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Article

Digitalization of Accounting In Banks: Efficiency and Risks In Uzbekistan's Banking System

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Abstract: The global banking sector is undergoing a profound shift driven by digital technologies, with accounting functions at the forefront of transformation. In Uzbekistan, governmental initiatives promoting digitalization, particularly the 2020 Presidential Decree, have accelerated the adoption of enterprise resource planning (ERP) systems and automated accounting tools in commercial banks. Despite growing digital adoption, empirical research addressing the practical efficiency gains and risks associated with digital accounting in Uzbekistan's banking sector remains scarce. This study investigates how digitalization impacts accounting efficiency, transparency, and operational risks within Uzbekistan's commercial banks between 2020 and 2024. Findings demonstrate that digitalization reduced financial reporting error rates from 6.5% to 2.7% and decreased report preparation time from 12 to 5 days, significantly improving transparency and boosting foreign direct investment. However, challenges such as cybersecurity threats, high implementation costs, and regulatory inconsistencies were also identified, disproportionately affecting smaller banks. By employing a mixed-methods approach combining qualitative analysis of bank documentation and quantitative assessment of key performance indicators, the study uniquely bridges theoretical frameworks with practical realities in an emerging market context. To sustain digital gains, policymakers should enhance financial literacy, provide financial support for smaller banks' technological upgrades, and harmonize local regulations with international standards, ensuring that digitalization strengthens resilience and competitiveness in Uzbekistan's banking system.

Keywords: Digitalization, Accounting, Banking, Efficiency, Cybersecurity, Uzbekistan

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1. Introduction

The global financial landscape is undergoing a profound transformation driven by digital technologies, with accounting processes in banks at the forefront of this evolution. Digitalization, encompassing the adoption of enterprise resource planning (ERP) systems, artificial intelligence (AI), and automated reporting mechanisms, has redefined the operational paradigms of financial institutions. In Uzbekistan, the government's strategic emphasis on fostering a digital economy, as outlined in the 2020 Presidential Decree on the "Year of Science, Education, and Digital Economy Development," has catalyzed the integration of advanced technologies into the banking sector. This shift promises enhanced efficiency, transparency, and accuracy in accounting, yet it introduces complexities related to cybersecurity, regulatory compliance, and human capital readiness [1].

This study seeks to examine the impact of digitalization on accounting practices within Uzbekistan's commercial banks, with a dual focus on operational efficiency and inherent risks. By exploring the interplay between technological advancements and accounting quality, the research addresses a critical gap in the literature, as empirical studies on digital accounting in Uzbekistan remain scarce. The primary research questions are: How does digitalization enhance the efficiency of accounting processes in banks? What risks emerge during this transition, and how do they affect financial reporting quality? Through a comprehensive analysis, this article aims to provide evidence-based recommendations for stakeholders navigating Uzbekistan's digital transformation journey [2].

2. Materials and Methods

The literature on digitalization in accounting underscores its transformative potential across financial sectors. Studies highlight that digital tools, such as ERP systems and AI-driven analytics, streamline data processing, reduce human error, and enhance real-time reporting . However, scholars like DeFond and Zhang caution that digitalization amplifies risks, including data breaches and system vulnerabilities, particularly in emerging economies with underdeveloped technological infrastructure [3].

In Uzbekistan, research on digital accounting is nascent, primarily focusing on policy frameworks rather than practical implications. This study bridges this gap by examining both the benefits and challenges of digitalization in the banking sector [4].

Methodologically, the research employs a mixed-methods approach to ensure robustness. Qualitative analysis involves a review of banking documentation, including annual reports and digital transformation strategies from five leading commercial banks in Uzbekistan (anonymized for confidentiality). Quantitative analysis leverages key performance indicators, such as error rates in financial reports, processing times, and cybersecurity incident frequencies, collected over the period from 2020 to 2024. Data were sourced from the Central Bank of Uzbekistan and public disclosures, with statistical analysis conducted using SPSS to identify trends and correlations. This dual approach enables a holistic evaluation of digitalization's impact on accounting efficiency and risk exposure [5].

3. Results

The digitalization of accounting processes in Uzbekistan's commercial banks has ushered in significant advancements, reshaping the landscape of financial reporting and operational efficiency. The adoption of digital tools, notably ERP systems like SAP and Oracle, alongside localized platforms such as 1C, has streamlined the preparation of financial statements, enabling banks to achieve greater accuracy and timeliness. Over the study period from 2020 to 2024, the implementation of these systems was found to reduce error rates in financial reporting substantially. Where manual processes in 2020 resulted in an average error rate of approximately 6.5% across the sampled banks, the integration of automated accounting tools by 2024 lowered this figure to 2.7%. This improvement reflects the precision afforded by digital systems, which minimize human intervention in repetitive tasks such as ledger reconciliation and transaction categorization. Furthermore, the time required to compile quarterly financial reports decreased notably, from an average of 12 working days in 2020 to just 5 days by 2024, underscoring the acceleration of workflows driven by automation [6].

Beyond accuracy and speed, digitalization has enhanced the transparency of financial reporting, a critical factor for stakeholder trust. The introduction of standardized digital formats allowed banks to present assets, liabilities, and cash flows with greater clarity, aligning with global best practices. This shift was particularly evident in the increased accessibility of financial data for external auditors and investors, fostering confidence in the banks' operational integrity. By 2024, the transparency index, measured through the availability of disaggregated financial metrics, rose from 62% to 79% across the sampled institutions. This progress facilitated a 12% uptick in foreign direct investment inflows into the banking sector between 2022 and 2024, as digitalized reporting aligned with the expectations of international stakeholders [7].

However, the transition to digital accounting systems has not been without challenges. The financial burden of implementing advanced technologies posed a significant hurdle, particularly for smaller banks with limited capital reserves. On average, each bank invested approximately $450,000 in software upgrades and hardware enhancements to support digital accounting frameworks. These costs were compounded by the need for extensive staff training, with an estimated 100 hours per employee dedicated to mastering new systems. Larger banks, benefiting from economies of scale, adapted more swiftly, while smaller institutions faced delays, highlighting disparities in resource availability. Additionally, cybersecurity emerged as a critical concern. The study recorded a 20% increase in attempted cyberattacks on banking systems between 2020 and 2024, with phishing and ransomware incidents posing threats to data integrity. Although no major breaches disrupted financial reporting, these incidents underscored the vulnerability of digital infrastructures in a rapidly evolving threat landscape [8].

Regulatory gaps further complicated the digitalization process. While Uzbekistan’s banking regulations have evolved to support technological innovation, inconsistencies between local standards and international protocols created friction. For instance, discrepancies in data retention policies hindered seamless integration with global ERP systems, requiring banks to develop interim solutions at additional cost. Despite these obstacles, the overall trajectory of digitalization in Uzbekistan’s banks points to a net positive impact, with efficiency gains outweighing initial setbacks, provided that ongoing investments in infrastructure and expertise are sustained [9].

4. Discussion

The findings illuminate the transformative role of digitalization in enhancing the accounting framework of Uzbekistan’s banking sector, aligning with global trends toward technological integration. The marked reduction in error rates and processing times reflects the capacity of digital tools to refine the precision and agility of financial reporting, corroborating insights from prior studies [10].

By automating complex computations and standardizing data formats, banks have not only optimized internal workflows but also elevated their credibility in the eyes of regulators and investors. The rise in transparency, evidenced by improved access to financial metrics, positions Uzbekistan’s banks as competitive players in the global financial arena, a development that resonates with DeFond and Zhang’s assertion that technological advancements enhance stakeholder trust [11].

Yet, the journey toward full digitalization reveals systemic challenges that warrant careful consideration. The financial and temporal costs of adopting sophisticated systems highlight a structural divide between larger and smaller banks, a phenomenon not unique to Uzbekistan but pronounced in emerging markets. Larger institutions, leveraging greater capital and expertise, have integrated digital tools with relative ease, while smaller banks grapple with resource constraints, echoing concerns raised by Nobes about uneven technological adoption. This disparity suggests a need for targeted interventions, such as government-backed subsidies or public-private partnerships, to level the playing field and ensure inclusive digital transformation [12].

Cybersecurity risks represent another critical dimension of the digital accounting landscape. The uptick in cyber incidents underscores the fragility of digital systems in the face of evolving threats, a challenge that demands robust countermeasures. Investments in encryption, multi-factor authentication, and employee awareness programs are imperative to safeguard sensitive financial data. The absence of major breaches in the studied banks is encouraging, but the rising frequency of attacks signals a pressing need for preemptive strategies, aligning with global recommendations for fortified cyber resilience in financial institutions [13].

Regulatory alignment remains a pivotal factor in sustaining digitalization's benefits. The friction between local and international standards, particularly in data governance, complicates the adoption of global ERP systems, requiring banks to navigate a complex compliance landscape. This observation aligns with regional studies highlighting regulatory lag as a barrier to technological progress. Addressing these gaps through harmonized policies and enhanced collaboration between the Central Bank of Uzbekistan and international standard-setting bodies could streamline digital integration, reducing compliance costs and enhancing system interoperability [14].

The broader implications of digitalization extend beyond accounting to encompass risk management and strategic decision-making. Automated systems have enabled banks to conduct real-time risk assessments, improving the quality of loan portfolios and reducing non-performing assets from 7% in 2020 to 4.5% in 2024. This synergy between accounting and risk management underscores the holistic value of digital tools, yet it also amplifies the stakes of system failures or security lapses. Moving forward, Uzbekistan's banking sector must balance innovation with resilience, ensuring that digitalization serves as a catalyst for sustainable growth rather than a source of vulnerability [15].

5. Conclusion

This study underscores the profound impact of digitalization on accounting practices in Uzbekistan's commercial banks, highlighting its role in enhancing efficiency, accuracy, and transparency. The adoption of digital tools has streamlined financial reporting, reduced errors, and bolstered investor confidence, aligning the sector with global standards. However, challenges such as high implementation costs, cybersecurity risks, and regulatory inconsistencies pose significant hurdles, particularly for smaller institutions. To maximize the benefits of digitalization, the following recommendations are proposed: first, establish training programs to bridge skill gaps among accounting personnel; second, introduce financial support mechanisms for smaller banks to adopt digital systems; and third, harmonize local regulations with international standards to facilitate seamless integration. These measures will strengthen Uzbekistan's banking sector, positioning it as a resilient and competitive player in the digital age. The findings hold relevance not only for Uzbekistan but also for other emerging economies navigating the complexities of technological transformation.

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