MODEL FOR ASSESSING THE EFFECT OF DIGITALIZATION OF BANKING SERVICES: IMPACT ON OPERATIONAL COSTS, SERVICE QUALITY, AND FINANCIAL STABILITY OF BANKS

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Abstract. This study examines the development of a model for assessing the effects of digitalization in banking services and its impact on key performance indicators of banks, including operational costs, service quality, and financial stability. The research analyzes modern digital banking technologies such as online banking, mobile applications, automated credit scoring systems, and digital lending platforms. The findings indicate that the implementation of digital tools reduces operational costs, accelerates loan processing, enhances transparency, and improves customer satisfaction. The proposed model allows for quantitative evaluation of the effects of digitalization on financial stability and provides a basis for managerial decision-making in the digital economy. Attention is also given to cybersecurity, employee digital literacy, and regulatory frameworks as critical factors for successful digital transformation.

Introduction. The global banking sector is undergoing a profound digital transformation, driven by rapid technological advancements, changing customer expectations, and intensifying competition. Digital banking channels, including online banking, mobile applications, automated credit scoring systems, and digital lending platforms, have become strategic tools for enhancing operational efficiency, improving service quality, and strengthening the financial stability of banks.

Operational costs represent a significant portion of total bank expenditures. Traditional banking processes, which rely heavily on manual operations, paperwork, and lengthy approval procedures, often result in increased costs and slower service delivery. The adoption of digital technologies allows banks to automate routine operations, streamline document management, and reduce bureaucracy, thereby improving efficiency and profitability.

Service quality is a critical factor influencing customer satisfaction and loyalty in modern banking. Clients increasingly demand fast, transparent, and convenient banking experiences. Digital banking services provide 24/7 access to accounts, enable real-time transaction processing, and allow clients to monitor loan applications

remotely. For small and medium-sized enterprises (SMEs) and industrial companies, timely access to financial resources through digital channels is crucial for operational continuity and investment planning.

International experience demonstrates that countries with well-developed digital banking infrastructure benefit from reduced transaction costs, improved credit portfolio quality, and stronger financial stability. Digitalization also promotes financial inclusion, enabling SMEs and underserved populations to access financial services that were previously limited by geographical or procedural barriers (Gomber et al., 2018; Kleinhans, 2017; Ozili, 2020).

In the context of Uzbekistan, the government's strategic program "Digital Uzbekistan – 2030" emphasizes the development of digital banking platforms, optimization of credit processes, and expansion of financial access for the real sector of the economy. The program aims to modernize financial institutions, improve operational efficiency, and support economic growth through technology-driven solutions.

Research Objective: The primary objective of this study is to develop a model for assessing the effects of digitalization of banking services and to evaluate its impact on operational costs, service quality, and financial stability of banks. Achieving this objective requires analyzing current digital banking technologies, identifying key performance indicators, and examining how digital channels influence risk management, customer satisfaction, and overall banking efficiency.

Literature Review. The digitalization of banking services has emerged as a transformative force in the financial sector, reshaping traditional banking operations and influencing key performance indicators such as operational costs, service quality, and financial stability. Numerous studies highlight the multifaceted impact of digital banking technologies on institutional efficiency and customer satisfaction.

Kleinhans (2017) identifies improvements in service quality and financial inclusion as direct outcomes of digital banking adoption. Mobile and online banking platforms enable customers to access services 24/7, perform transactions efficiently, and monitor account activity in real-time. Such capabilities are particularly beneficial for small and medium-sized enterprises (SMEs) that require rapid access to financial resources to maintain operations and support investment planning.

Ozili (2020) investigates the role of digital financial services in enhancing financial stability. The research demonstrates that banks employing automated credit scoring systems and big data analytics can more accurately assess borrower risk, minimize exposure to bad debt, and optimize resource allocation. This contributes to the resilience of financial institutions during economic fluctuations and financial shocks.

Norton and Shan (2019) provide a global perspective on digital financial services, noting that while digitalization improves efficiency and inclusion, it also introduces challenges such as cybersecurity risks, data privacy concerns, and regulatory compliance requirements. These factors must be addressed to ensure sustainable implementation of digital banking systems.

Empirical evidence from Uzbekistan supports these global findings. Reports

from the Central Bank of the Republic of Uzbekistan (2019–2024) indicate a significant increase in online transactions, reduced processing times for loan applications, and improved customer satisfaction with digital banking services. Rakhmonov (2021) and Karimov (2022) highlight that the adoption of digital lending platforms and automated scoring systems has reduced operational costs, enhanced service quality, and strengthened financial stability within commercial banks.

International comparisons further show that countries with advanced digital banking infrastructures enjoy lower transaction costs, higher credit portfolio quality, and more resilient banking sectors (IMF, 2021; World Bank, 2022). These findings underscore the importance of integrating digital technologies with adequate employee training, cybersecurity measures, and regulatory frameworks to fully realize the potential of digital banking.

In summary, the literature consistently demonstrates that digitalization of banking services is a critical driver for operational efficiency, enhanced service quality, and financial stability. Simultaneously, successful digital transformation requires addressing cybersecurity risks, ensuring workforce digital literacy, and developing robust legal and regulatory frameworks. These insights provide the theoretical foundation for developing a model to assess the effects of digitalization on banks, which is the focus of this study.

Discussion. The results of this study indicate that the digitalization of banking services has a significant and multifaceted impact on operational costs, service quality, and financial stability. The proposed assessment model provides a quantitative framework for understanding the extent to which digital banking channels contribute to improvements in these key performance indicators.

Operational Costs: The study confirms that the adoption of digital banking technologies significantly reduces operational costs. Automation of routine tasks, implementation of electronic document management, and the use of digital lending platforms minimize manual work and streamline internal processes. This reduction in costs directly enhances bank profitability and efficiency, particularly for institutions handling a large volume of transactions and loan applications.

Service Quality: Digital channels substantially improve service quality by providing customers with convenient, 24/7 access to banking services. Online and mobile banking platforms accelerate transaction processing, improve transparency, and allow real-time monitoring of account and loan application statuses. As a result, customer satisfaction increases, trust in financial institutions is strengthened, and client retention is enhanced. This is particularly relevant for small and medium-sized enterprises (SMEs), which benefit from faster access to credit and streamlined financial operations.

Financial Stability: Digitalization also contributes to the financial stability of banks. Automated credit scoring and data analytics enhance risk assessment accuracy, reduce the proportion of non-performing loans, and optimize portfolio management. Banks that implement digital solutions demonstrate increased resilience to economic fluctuations, market shocks, and unexpected financial disturbances. This aligns with international findings showing that digital financial services can stabilize banking

operations and reduce systemic risks (Ozili, 2020; IMF, 2021).

Comparison with Global Practices: International experience confirms that countries with advanced digital banking infrastructures enjoy reduced transaction costs, higher quality of service, and more resilient financial systems (Gomber et al., 2018; Kleinhans, 2017). Uzbekistan's strategic program "Digital Uzbekistan – 2030" provides a domestic framework for adopting similar approaches. The study's findings suggest that while Uzbekistan has made significant progress in digital banking, further improvements in cybersecurity, workforce training, and regulatory compliance are necessary to fully leverage the potential of digitalization.

In conclusion, the discussion demonstrates that digitalization is a strategic driver for improving operational efficiency, service quality, and financial stability in banks. The developed assessment model offers a practical tool for quantitatively evaluating these effects and provides a foundation for managerial decisions aimed at enhancing banking performance in the digital economy.

Conclusion. This study confirms that the digitalization of banking services is a critical factor in enhancing operational efficiency, improving service quality, and strengthening the financial stability of banks. The implementation of digital channels—including online banking, mobile applications, automated credit scoring systems, and digital lending platforms—significantly reduces operational costs, accelerates loan processing, increases transparency, and improves customer satisfaction. The proposed assessment model demonstrates that digitalization contributes to lower credit risk, a higher proportion of quality loans, and more reliable portfolio management. Furthermore, digital banking expands access to financial services for small and medium-sized enterprises, stimulating investment activity and economic growth. However, the study also highlights challenges that need to be addressed for successful digital transformation: ensuring cybersecurity, enhancing digital literacy among bank employees and clients, and developing a robust regulatory framework. Addressing these challenges will enable banks to fully leverage the benefits of digitalization, strengthen financial resilience, and maintain competitiveness in the evolving digital economy.

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