

INNOVATION SCIENCE AND TECHNOLOGY



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ISSUE 2



Acceptance of papers **February, 2026**



Acceptance of papers

Published monthly



Topics

economics, technology, social sciences

ISSN 3060-5229



Digital Object Identifier



Visit the website t.me/scopus_IST2100

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JOURNAL **"INNOVATION SCIENCE AND
TECHNOLOGY"** HAS BEEN REGISTERED
UNDER THE NUMBER **C-5669633** BY THE
AGENCY FOR INFORMATION AND MASS
COMMUNICATIONS (AOKA) OF THE
REPUBLIC OF UZBEKISTAN, EFFECTIVE
FROM OCTOBER 9, 2024.

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SPECIFIC ASPECTS OF DIGITALIZING RETAIL LENDING PROCESSES IN COMMERCIAL BANKS

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Abstract: Currently, the process of digitalizing retail lending operations is being actively implemented in commercial banks. This article examines the stages, advantages, and key principles of digitalizing retail lending and analyzes the changes occurring in retail lending processes as a result of this transformation.

Key words: lending, digitalization, lending process, loan portfolio, credit risk, technology, transformation, automation.

Annotatsiya: Hozirgi kunda tijorat banklarida chakana kreditlash jarayonlarini raqamlashtirish faol joriy etilmoqda. Mazkur maqolada chakana kreditlashni raqamlashtirishning bosqichlari, afzalliklari va asosiy tamoyillari yoritilgan, shuningdek, ushbu transformatsiya natijasida kreditlash jarayonlarida yuz berayotgan o'zgarishlar tahlil qilingan.

Kalit so'zlar: kreditlash, raqamlashtirish, kreditlash jarayoni, kredit portfeli, kredit riski, texnologiya, transformatsiya, avtomatlashtirish.

Аннотация: В настоящее время в коммерческих банках активно внедряется процесс цифровизации розничного кредитования. В данной статье рассматриваются этапы, преимущества и основные принципы цифровизации розничного кредитования, а также анализируются изменения, происходящие в процессах кредитования в результате данной трансформации.

Ключевые слова: кредитование, цифровизация, процесс кредитования, кредитный портфель, кредитный риск, технология, трансформация, автоматизация.

INTRODUCTION

Today, the digitalization of lending processes has significantly transformed the banking system and simplified both loan origination and disbursement. At the same time, the economy is developing rapidly and is increasingly intertwined with technological progress. In this context, the transformation and digitalization of banks have made the digitalization of lending processes a strategic necessity.

Digitalization of lending processes refers to the application of digital technologies to simplify and automate the key stages of the lending cycle, including loan application, origination, underwriting, repayment, and servicing. Traditional lending practices are typically characterized by extensive paperwork, manual verification procedures, and lengthy approval times, which limit accessibility and operational efficiency. By contrast, digital transformation has enabled the adoption of advanced technologies such as artificial intelligence, big data analytics, and blockchain, thereby enhancing the speed, transparency, and reliability of lending operations.

In recent years, banks have increasingly focused on initiatives aimed at digitalizing their lending practices. In particular, the restrictions associated with COVID-19, as well as customers' concerns about visiting bank branches, have further emphasized the importance of digital channels in banking services. As a result, many banks have accelerated their investment plans in this area and are actively digitalizing the lending experience. While some institutions are pursuing a gradual, methodical transition toward full automation, others are implementing the highest feasible level of automation in their lending processes.

LITERATURE REVIEW

A substantial body of research and numerous academic publications by foreign scholars have examined the digital transformation of retail lending processes in banks, offering diverse conceptual approaches and

definitions. According to researchers in this field, the digital transformation of retail lending in commercial banks has both direct and indirect effects on the growth of gross domestic product (GDP) through various indicators within the financial and banking sectors.

The prominent European economist Dimitris Chorafas has conducted extensive research in finance and banking, including banking technologies, risk management, and digital transformation. In his works, he emphasizes the critical role of information systems and technologies in modern risk management practices, highlighting their importance for the digital transformation of banking activities, including retail lending.

According to the well-known economist D. Mhlanga, the digital transformation of lending processes is reshaping the banking sector. The application of advanced information technologies, particularly artificial intelligence within digitalization processes, enables a more accurate assessment of credit risk in commercial banks. This, in turn, creates opportunities for more informed lending decisions and a better customer experience [1].

Foreign economists Warner and Wäger argue that digital transformation is an ongoing process that encompasses improvements in business models, collaboration, and organizational culture [2]. They note that much of the theoretical contribution to digital transformation focuses on customer value and experience, operational activities, strategic innovation, and the development of new business models. From this perspective, digital transformation should be viewed not as a one-time initiative, but as a continuous process involving the integration of digital technologies into organizational strategy and operations, as well as the adaptation of structures and processes to succeed in a rapidly changing digital environment.

The economist Thakor has explored the role of fintech in illustrating how innovations in payment systems, lending, and insurance have transformed financial intermediation [3]. His findings indicate that fintech has reshaped financial processes by increasing competition, improving efficiency, and enhancing the overall customer experience.

Several authors have analyzed the impact of digitalization on the credit process, including the advantages of digital lending, its fundamental principles, the technologies applied, and its developmental trends. The evolution of these processes has led to a growing preference for digital lending over traditional methods, as it more effectively meets the needs of bank clients. In particular, digital lending improves user convenience, simplifies customer service, and contributes to higher levels of financial literacy in matters related to identification and authentication. Additional benefits include time and cost savings, as higher levels of digitalization contribute to more efficient lending processes [4].

In Uzbekistan, Professor N. Kh. Jumayev conducts research on improving the service coordination of commercial banks through the digitalization of banking services, the introduction of information technologies, and innovation. He notes that the implementation of digital technologies enhances both the quality and speed of banking services and increases customer satisfaction through new payment channels and smart financial services.

According to Z. T. Mamadiyarov, the digital transformation of retail banking services enables clients to conduct banking operations on a 24/7 basis through online services, mobile applications, and electronic banking platforms, thereby making the banking system more efficient and convenient.

Although the above-mentioned scholars have proposed valuable practical recommendations and scientific contributions regarding banking services, technological innovation, and digitalization, the relevance of the present study is determined by the need for more targeted recommendations specifically focused on the digitalization of retail lending as an effective tool for attracting and retaining bank customers.

RESEARCH METHODOLOGY

This study examines the stages, advantages, and principles of digitalizing retail lending. In the course of the research, alongside general economic approaches, a set of complementary methods was applied, including systematic analysis, comparative analysis, generalization, statistical methods, and abstract–logical reasoning. The combined use of these methods ensures a comprehensive assessment of the digital transformation of retail lending processes and supports the reliability and consistency of the research findings.

ANALYSIS AND RESULTS

In order to accelerate the digital transformation of lending, banks should focus on three key principles: (i) taking into account actual customer needs and experiences; (ii) avoiding the superficial digitization of existing manual and underwriting processes; and (iii) integrating the digitalization of lending for both legal entities and individuals into the bank's strategic development plan.

The stages of digitalizing lending processes can be summarized in several interconnected steps, each generating substantial benefits. First, the transition from traditional to digital lending reduces time and costs for both borrowers and lenders. Second, the digital transformation accelerates procedures and expands the scale of microfinancing. Third, the effective improvement of lending processes requires the application of modern information technologies, including artificial intelligence, big data, and blockchain. Fourth, a successful transformation presupposes the development of a comprehensive digital strategy that reflects the specific needs and priorities of each bank. Finally, the digitalization of business processes enhances operational efficiency, optimizes workflows, and creates additional sources of income.

The first stage represents the introductory phase of digitalization, which involves either submitting simple online applications to test customer interaction or digitalizing only selected processes. Many banks have already reached this level. While these initial steps create important opportunities, customers increasingly prefer fully digital lending solutions, namely the ability to apply online on a 24/7 basis without visiting a bank branch. Although borrowers previously accepted complex and time-consuming procedures, their expectations are now evolving toward faster and more convenient services.

At the second stage, lenders move from predominantly offline procedures to fully digital online applications. However, in many cases, these digitized processes still resemble modified versions of traditional practices. For instance, applicants may upload documents and complete identification via camera, yet the submitted materials are often reviewed manually by bank staff. This indicates that not all procedures are fully automated or supported by artificial intelligence. While this stage represents meaningful progress, it also highlights the importance of further automation to ensure faster processing and a more seamless customer experience.

The transformation efforts currently undertaken by many banks are characteristic of this stage. Although the transition is resource-intensive and requires substantial investment in modern financial technologies, it opens up significant opportunities for further improvement and lays the foundation for comprehensive digitalization.

The third level involves automated decision-making, in which front-end processes are transferred to digital platforms, providing new digital opportunities for both clients and bank employees. A fully automated framework enables underwriting decisions to be made within a short time and facilitates the rapid determination of credit scoring results, including through KATM. The use of automated systems capable of processing large volumes of data, as well as artificial intelligence, reduces the need for manual review and supports faster, more consistent, and more objective decisions. As a result, banks can increase lending volumes and enhance customer satisfaction. In addition, verification procedures in the digital environment can be significantly simplified and, in many cases, fully automated, thereby eliminating the need for customers to submit paper-based documents such as income certificates.

At the fourth level, the stage of intelligent decision-making, banks further expand the use of advanced technologies and analytics to achieve faster and more accurate decisions. This not only allows institutions to automate existing processes, but also to fundamentally improve them. Banks that adopt these solutions create new opportunities to expand their loan portfolios among existing clients, attract new customers, and strengthen their market position without increasing portfolio risk.

Currently, in many traditional banks, decision-making and lending processes for small businesses and corporate clients remain relatively time-consuming. However, international best practices demonstrate that these timelines can be significantly reduced. Leading banks have already achieved substantial progress in digital retail lending, in some cases reducing the time required for preliminary approval to just a few minutes. This reflects the strategic priorities of banks worldwide. Overall, the digital transformation of lending, including the enhancement of customer experience and the optimization of credit processes, provides considerable advantages for both banks and clients. For banks, successful transformation initiatives can lead to sustainable revenue growth and significant cost efficiencies.

Simplifying and digitalizing lending processes offers a wide range of advantages. These measures enhance operational efficiency and significantly reduce the time required for lending procedures, which, in turn, increases customer satisfaction with banking services. In particular, the elimination of redundant activities and the streamlining of workflows contribute to shorter cycle times and improved service quality. Moreover, the simplification of lending processes supports the consolidation and further development of the digital environment formed as a result of ongoing transformation initiatives.

The introduction of advanced technologies, such as Robotic Process Automation (RPA), not only strengthens operational efficiency but also creates scalable solutions that can be adapted to various banking services. Overall, the digital management of lending processes improves organizational performance, ensures a higher level of customer satisfaction, and enhances the ability of banks to adapt to a dynamically changing business environment. Consequently, the digitalization of lending processes provides substantial benefits for both lenders and borrowers, as summarized in Table 1.

Table 1. Advantages of Digitalizing Lending Processes

No.	Advantages
1	Digitalization increases efficiency by reducing the time and resources required for loan processing.
2	Automated algorithms can rapidly analyze large volumes of data to assess borrowers' creditworthiness and support informed lending decisions in real time. This not only accelerates the loan approval process but also reduces the risk of human error.
3	Digitalization expands access to credit for underserved populations. Traditional lending models often overlook individuals with limited credit histories or those living in remote areas. In contrast, digital lending platforms use alternative data sources and innovative credit-scoring algorithms to assess creditworthiness, thereby creating more accessible financing opportunities.
4	Digitalization enhances transparency and accountability in lending processes. In addition, digital platforms enable borrowers to better understand loan terms and conditions, which supports more informed financial decision-making.

Source: Compiled by the author.

While the digitalization of lending processes offers substantial benefits, it also entails a number of challenges that require systematic management. One of the primary concerns relates to data privacy and security. As digital lending platforms collect and process large volumes of financial data, the implementation of robust cybersecurity measures is essential to prevent data breaches and unauthorized access. In addition, automated lending decisions involve certain algorithmic risks, which underscores the importance of transparent models and effective oversight mechanisms. Furthermore, the digital transformation of lending necessitates continuous upskilling and retraining of bank employees to ensure their successful adaptation to the evolving technological environment.

At the same time, the digitalization of lending plays a key role in improving the financial environment and enhancing overall efficiency. By leveraging digital technologies, banks can expand the volume and scale of lending to low-income groups through various forms of small-scale retail loans. Moreover, digital lending platforms provide borrowers with access to a wider range of financial products tailored to their specific needs, thereby strengthening banks' profitability and competitiveness.

As digitalization continues to accelerate, the digital transformation of retail lending in banks is becoming increasingly widespread. Today, applications for retail loans can be submitted via mobile devices within minutes. Although mortgage lending is more complex due to regulatory requirements, banks in many developed markets have successfully digitalized a significant portion of these processes. In some cases, major banks have achieved up to 95% automation of underwriting decisions in retail lending.

Banks are also increasingly using digital technologies to deliver financial products and services to individuals, and access to credit for various purposes has become an integral part of everyday economic activity. Retail lending should therefore be viewed not only as a source of income for banks, but also as a mechanism for improving living standards and stimulating economic development. The ongoing digitalization of retail banking services contributes to higher operational efficiency and faster transaction processing. In this context, regulatory frameworks such as PSD2 create new opportunities for retail banks to exchange data and provide more personalized services to customers.

Empirical evidence further illustrates the economic benefits of digital transformation. For example, by reducing the processing time for small and medium-sized business loans from 20 days to approximately ten minutes, a major European bank significantly improved its financial performance, increasing interest income and average margins and strengthening its competitive position. As a result, a bank with a balance sheet of around USD 250 billion was able to generate up to USD 230 million in additional annual profit, with more than half of this gain attributable to improvements in operational efficiency.

At the same time, the growing demand for digital products, mobile applications, and online services has intensified competition for traditional banks. Although a number of banking services have already been partially digitalized, many processes still begin in digital channels and end with manual, paper-based procedures. Such discontinuities in the digital service chain limit the full realization of digitalization benefits, particularly when customers are required to visit bank branches in person.

Over recent years, the services market has undergone significant changes due to the introduction of new financial technologies and innovations in retail lending. Advances in information technology have transformed the role of data in lending and increased demand for specialized solutions in data encryption and processing. Research also indicates that the automation of lending processes can help reduce disparities in access to credit, including for underrepresented groups in Europe [5]. In addition, digital financial technologies have a considerable impact on entrepreneurship, as banks increasingly emphasize electronic transactions and advanced financial services [6]. These developments play an important role in shaping the transformation of retail lending processes.

It is also evident that most commercial banks have adopted various strategies to support the digital economy, with the primary objectives of expanding their customer base, growing their loan portfolios, and increasing profitability. At the same time, prudent risk management remains essential, as rapid portfolio growth may lead to higher levels of non-performing loans (NPLs) and increased credit risk, which can affect financial stability [7]. Therefore, banks should continuously analyze data and monitor customer demand in order to enhance the efficiency, accuracy, and user-friendliness of their digital lending platforms.

Overall, the implementation of a comprehensive mechanism for the digitalization of retail lending enables banks to simplify loan application procedures, improve customer experience, and increase operational efficiency, while simultaneously ensuring a high level of security and compliance with regulatory requirements.

CONCLUSION AND RECOMMENDATIONS

In conclusion, the digital transformation of retail lending in commercial banks represents a substantial paradigm shift in contemporary lending practices. In the context of the transition to digital technologies, financial institutions are not only modernizing their operational processes but also redefining their relationships with customers. Digitized retail lending fosters a closer alignment between innovation and efficiency, thereby creating new opportunities to transform the ways in which individuals and firms access credit. Although challenges related to regulatory adaptation and data security remain important, the overall trajectory clearly indicates the emergence of a more dynamic, efficient, and accessible lending ecosystem. The ongoing innovative development in this area highlights the necessity of continuous research, institutional adaptation, and close collaboration among financial institutions, regulators, and technology providers in order to ensure the sustainable progress of digital retail lending.

The digitalization of lending processes constitutes a profound transformation of the financial system, offering significant opportunities to enhance efficiency, transparency, and financial inclusion. While it is essential to address issues such as data privacy, governance risks, and workforce transformation, digitalization plays a crucial role in expanding access to financial resources and supporting long-term economic growth. As technological development continues, the application of digital innovations in lending processes will become increasingly important for building a more resilient, competitive, and sustainable financial system.

Based on the findings of the study, it is recommended that commercial banks: (i) develop comprehensive digital strategies aligned with their business models and regulatory requirements; (ii) strengthen data protection and cybersecurity frameworks to ensure trust and system stability; (iii) invest in staff training and upskilling to support effective digital transformation; and (iv) enhance cooperation with fintech companies and regulators to promote innovation while maintaining prudent risk management. The consistent implementation of these measures will contribute to improving the effectiveness and sustainability of digital retail lending in commercial banks.

REFERENCES

- Mhlanga, D. (2021). Financial inclusion in emerging economies: The application of machine learning and artificial intelligence in credit risk assessment. *International Journal of Financial Studies*, 9(3), 39.
- Warner, K., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52(3), 326–349.
- Thakor, V. V. (2019). Fintech and banking: What do we know? *Journal of Financial Intermediation*, 41, 100833.
- Thuy, D., Nguyen, T., & Do, T. (2023). Digital and traditional lending: Some comparative issues. *Journal of Economic Development Studies*, 13–23. <https://doi.org/10.59276/tckhdt.2023.04.2470>
- Howell, S. T., Kuchler, T., Snitkof, D., Stroebel, J., & Wong, J. (2023). Lender automation and racial disparities in credit access. *The Journal of Finance*.
- Mohsin, H. J., Hani, L. Y., Bani Atta, A. A., Al-Alawneh, N. A., Ahmad, A. B., & Samara, H. (2023). The impact of digital financial technologies on the development of entrepreneurship: Evidence from commercial banks in emerging markets. *Corporate and Business Strategy Review*.
- Hakizimana, S., Wairimu, M. C., & Stephen, M. M. (2023). Digital banking transformation and performance: Where do we stand? *International Journal of Management Research and Emerging Sciences*.
- Akhmedova, D. K. K. (2023). Digitalization of retail lending practice in commercial banks of the Republic of Uzbekistan. *Frontline Marketing, Management and Economics Journal*, 3(5), 25–32.
- Sherjonov, S., Axmedova, D., Masharipova, X., Niyozmetov, D., & Jumaniyozov, F. (2025-November). The impact of CO₂ emissions and renewable energy on economic growth in Uzbekistan: A VECM analysis. In *AIP Conference Proceedings* (Vol. 3331, No. 1, p. 030024). AIP Publishing LLC.
- Hudayberganov, D., Mavlanova, B., Zakirova, G., Kuramboev, F., Hudoyberganov, D., & Hudayberganova, G. (2023). Features of assessing the satisfaction of the population with food consumption.
- Sh, M. B. (2024). Importance of tourism services in the region. *Ekonomika i Sotsium*, 1(116), 311–316.
- Ruzmetova, G. N. (2025). Inson kapitalini rivojlantirishning mintaqaviy rivojlanish asoslarining asosiy omillari tahlili. *Nauka i Innovatsiya*, 3(13), 100–102.

Proofreader: Zokir ALIBEKOV

Layout and Designer: Oloviddin Sobir ugli

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