

Digital Operational System Analysis: Sharia Core Banking in Digital Financial Transactions

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Abstract : The rapid development of digital technology has significantly transformed the banking sector, including Islamic banking, which is required to adapt to digital-based operational systems while maintaining compliance with Sharia principles. One of the key components supporting digital financial transactions in Islamic banks is the digital operational system through Sharia core banking. This study aims to analyze the digital operational system of Sharia core banking in supporting digital financial transactions, focusing on its role, operational mechanisms, and implementation challenges. This research employs a qualitative descriptive approach using a literature study method by reviewing relevant academic journals, books, and official regulations related to digital Islamic banking. The findings indicate that the Sharia core banking system plays a central role as the backbone of digital financial transactions by integrating transaction processing, accounting, reporting, and Sharia compliance control in real time. The system contributes to improving operational efficiency, transaction transparency, service reliability, and internal control while ensuring adherence to Sharia principles through proper contract management. However, the implementation of digital Sharia core banking systems still faces challenges related to technological infrastructure, human resource readiness, and regulatory adaptation. These challenges highlight the need for continuous system development, enhancement of human resource competencies, and regulatory harmonization. This study provides theoretical contributions to the literature on digital Islamic banking and offers practical insights for Islamic financial institutions in optimizing digital core banking systems to support sustainable digital financial services.

Keywords: core banking system; digital financial transactions; Islamic banking; operational systems; sharia compliance.

1. BACKGROUND

The development of digital technology has brought significant changes to various sectors, including the financial services sector. Digitalization is encouraging financial institutions to adapt to technology-based operational systems to improve efficiency, speed, and quality of service to customers. In the banking context, the use of digital technology serves not only as a means of supporting services but has become a core part of the operational system, particularly through the implementation of an integrated *core banking system*. (Ramzy et al., 2024). This transformation also impacts Islamic banking, which is required to compete amidst the rapid development of digital financial services without neglecting Islamic principles.

Islamic banking has distinct operational characteristics from conventional banking, particularly regarding the prohibition of *riba* (usury), *gharar* (uncertainty), and *maysir* (gambling), as well as the application of Islamic contracts in every transaction. Therefore, digitalization in Islamic banking requires an operational system that is not only technologically sophisticated but also capable of ensuring compliance with Islamic principles. Islamic *core banking* plays a crucial role as the backbone of bank operations in managing digital financial transactions, from recording contracts and managing funds to providing digital-based services such as *mobile*

banking and *internet banking*. (Siregar et al., 2025) . Previous research shows that digital transformation in Islamic banking provides significant opportunities to improve operational efficiency, service quality, and expand Islamic financial inclusion in society. (Aripin et al., 2022) .

However, the implementation of digital operational systems in *core* Islamic banking also faces various challenges. Several studies have shown that the digitalization process in Islamic banking is not only related to technological readiness but also involves regulatory aspects, human resources, system security, and the integration of Islamic values into every digital process. (G et al., 2025) . Furthermore, there are still limited studies that specifically discuss how the digital *core banking system* works to support digital financial transactions comprehensively, particularly in terms of operational mechanisms and its role in maintaining Sharia compliance.

(*gap analysis*) can be identified, namely the lack of comprehensive discussion on the analysis of digital *core banking operational systems* in the context of digital financial transactions. Most previous research has focused more on the general aspects of digital transformation or its impact on financial performance and inclusion, while studies focusing on the *core banking operational system* as the foundation of digital transactions are still relatively limited. Therefore, this research is crucial for providing a deeper understanding of the role and mechanisms of the digital *core banking operational system* .

This study aims to analyze the operational system of digital *core Islamic banking* in supporting digital financial transactions and identify its role in improving operational efficiency and maintaining compliance with Islamic principles. The results are expected to contribute academically to the development of digital Islamic banking studies. and serve as practical considerations for Islamic financial institutions in optimizing the implementation of *core banking systems* in the digital era.

2. THEORETICAL STUDY

a. Digitalization in Islamic Banking

Digitalization in the banking sector is the process of utilizing information technology to support operational activities, services, and financial data management in a more efficient and integrated manner (Safa, 2024) . In Islamic banking, digitalization is not only oriented towards increasing service speed but also must pay attention to compliance with the sharia principles that underlie bank operations. (G et al., 2025) . The development of the digital economy has encouraged Islamic banks to

develop technology-based services such as *mobile banking* and *internet banking* to meet the needs of modern society.

Digital transformation in Islamic banking is seen as a crucial strategy for increasing competitiveness and expanding Islamic financial inclusion. Service digitization enables Islamic banks to reach communities that previously had limited access to formal financial services. Furthermore, the development of Islamic banking in the digital economy era demonstrates that the use of technology contributes to the sustainable growth of the Islamic financial industry (Zakia Rahmah Siahaan & Marliyah, 2023) . Thus, digitalization is a key foundation for the development of modern Islamic banking.

b. Digital Operational System and Sharia *Core Banking*

A digital operational system in banking refers to the entire operational process supported by information technology. One of the main components of a banking operational system is *the core banking system*, which integrates all banking activities in *real time* . In Islamic banking, *the core banking system* plays a strategic role because it must be able to accommodate Islamic contracts and ensure all transactions comply with Islamic principles (G et al., 2025) .

core banking functions not only as a technical data processing system but also as an operational control instrument that ensures Sharia compliance in every digital financial transaction. The implementation of a digital operational system through *Sharia core banking* allows for increased operational efficiency, transaction transparency, and accurate financial recording (Siregar et al., 2025) . Other research also shows that digital transformation in Sharia banking services contributes to operational optimization while supporting sustainable banking practices (Miftahur Rahman & Ririn Makrifah, 2025) .

With the increasing use of digital banking services, the *Sharia core banking system* is required to operate stably and integrate with various digital platforms. Therefore, analyzing the operational system of the *Sharia core banking digital system* is crucial for understanding the effectiveness of digital financial transactions in Sharia banking.

c. Digital Financial Transactions from a Sharia Perspective

Digital financial transactions are financial activities conducted electronically without face-to-face physical contact. In Islamic banking, digital financial transactions must adhere to Sharia principles, such as fairness, transparency, and the prohibition of *riba* (usury) , *gharar* (*gharar*), and *maysir* (*gambling*). Digitizing transactions offers

convenience and flexibility for customers, but requires a system capable of ensuring Sharia compliance and transaction security (Fitria, 2025) .

The success of digital financial transactions in Islamic banking depends heavily on the quality of the digital operational system used. A well-integrated Islamic core banking system will ensure that every digital transaction is recorded accurately and in accordance with Sharia (Aripin et al., 2022) . Furthermore, the use of digital technology in Islamic financial transactions also has the potential to increase customer trust by enhancing transaction security and transparency, including through the development of supporting technologies such as *blockchain*. (Wati & Yazid, 2023) .

3. RESEARCH METHODS

The research method used is a descriptive qualitative approach with a literature study method to analyze the digital operational system of Islamic *core banking* in digital financial transactions. A descriptive qualitative approach using the literature study method is research that describes a phenomenon based on the analysis of various relevant literature sources. (Moleong, 2016) The research data consists of secondary data obtained from scientific journals, reference books, and related official regulations. Data analysis is conducted qualitatively descriptively through the processes of data reduction, data presentation, and drawing conclusions to obtain a comprehensive picture of the role of the digital *core banking operational system* in Islamic banking. (Suryabrata, 2013)

4. RESULTS AND DISCUSSION

a. Core Banking Operational System in Digital Financial Transactions

The study results show that a digital operational system through Sharia *core banking* plays a central role in supporting digital financial transactions in Sharia banking. *The core banking system* serves as the backbone of bank operations, integrating all transaction activities, from account registration and fund management to *real-time transaction processing* . In the context of Sharia banking, this system is oriented not only toward operational efficiency but also toward compliance with Sharia principles in every digital financial transaction.

core Islamic banking operational system is reflected in the increased efficiency and reliability of digital transaction services. System digitization enables faster, more accurate, and more standardized transaction processes, thereby reducing operational errors and improving the quality of service to customers. This is in line with findings

(Vives, 2019) , which confirm that banking system digitization contributes significantly to operational efficiency and improved bank service performance. Furthermore, studies on Islamic banking in Indonesia also show that integrated digital banking services can improve transaction efficiency and customer satisfaction (Abidin & Octira, 2024) .

Beyond efficiency, the Islamic *core banking system* also plays a crucial role in increasing the transparency of financial transactions. All digital transaction activity is recorded automatically and centrally, facilitating financial tracking, monitoring, and reporting. This transparency is a crucial factor in building customer trust in Islamic banking services in the digital era (Ma & Nasution, 2025) .

On the other hand, Islamic *core banking* plays a strategic role in maintaining compliance with Islamic principles . This system is designed to accommodate various types of Islamic contracts, such as *murabahah*, *mudharabah*, and *ijarah* , so that every digital transaction remains in accordance with Islamic provisions. An integrated Islamic banking information system has been proven to strengthen internal controls and minimize potential deviations from Islamic principles (Ichsan et al., 2024) . Thus, the Islamic *core banking digital operational system* functions not only as a technical tool but also as an instrument for controlling and supervising digital financial transactions.

b. *Core Banking Operational Mechanisms in Supporting Digital Financial Transactions*

The operational mechanism of the sharia *core banking system* in supporting digital financial transactions involves the integration of various system modules, such as transaction, bookkeeping, reporting, and internal control modules. (Ocha, 2025) . The digital transaction process in Islamic banking generally begins with customer interaction through digital services, such as *mobile banking* , which is then processed centrally by the *core banking system* before recording and settling the transaction. This integrated system enables fast and accurate transaction processing.

core banking system also plays a role in ensuring that every digital transaction complies with the Sharia contract. This operational mechanism includes transaction validation, contract compliance verification, and automatic recording in the Sharia accounting system. Digital transformation through the *core banking system* has been proven to improve the operational efficiency of Sharia banking without compromising Sharia principles (Siregar et al., 2025) .

Furthermore, digital operational mechanisms enable Islamic banks to continuously *monitor transactions to minimize operational risk and maintain transaction security*.

The implementation of an integrated information system supports internal control and risk management in Islamic banking digital transaction services (Lestari et al., 2025) .

c. **Core Sharia Banking Operational System**

core banking systems in Islamic banking, studies show that their implementation still faces various challenges. The main challenges lie in technical aspects, human resources, and regulations. Technically, the complexity of core banking systems , which must accommodate various Sharia contracts and provisions, requires reliable technological infrastructure and high costs, which are often a constraint, especially for small and medium-sized Islamic banks (Jannah & Rohmayanti, 2025) .

Another challenge arises in the readiness of human resources, where digital transformation requires human resources who not only master information technology but also understand sharia principles, and the limitations of these human resource competencies have been identified as a significant obstacle in the digital transformation process of Islamic banks (Wahab & Ihsan, 2025) .

From a regulatory perspective, Islamic banking faces demands to comply with both general banking regulations and Sharia provisions, where the imbalance between the pace of technological development and regulatory adjustments can be a major challenge. Harmonization between technology, regulations, and Sharia compliance needs to be prioritized to ensure the sustainability of Islamic banking digitalization (Laksono & Nisa, 2024) . Therefore, synergy between regulators, banking industry players, and academic stakeholders is key to supporting the development of a sustainable digital *core Islamic banking operational system*.

5. CONCLUSION AND SUGGESTIONS

Based on the literature review, it can be concluded that the digital operational system for Islamic *core banking* plays a central role in supporting digital financial transactions in Islamic banking. This system serves as the core infrastructure that integrates all transaction processes in *real time* , improving operational efficiency, transparency, and accuracy of financial records, while maintaining compliance with Islamic principles through integrated contract management and internal controls. Thus, Islamic *core banking* serves not only as a technical system but also as a strategic instrument in ensuring the quality and reliability of digital Islamic banking services.

However, the implementation of a digital operational system for Sharia *core banking* still faces various challenges, particularly in terms of technological infrastructure readiness, human

resource competency, and regulatory harmonization. System complexity and the need for human resources who understand technology and Sharia principles are factors that hinder the optimization of Sharia banking digitalization. Therefore, ongoing efforts by banks to improve system quality and human resource capacity are needed, along with regulatory support in creating policies that adapt to digital technology developments. Further research is recommended to examine the implementation of the Sharia *core banking system* empirically to gain a deeper understanding of real-world practices and challenges.

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