

## Digitalization of Islamic Finance in the 5.0 Era: A Systematic Review and Challenges in Strengthening the Halal Ecosystem

**Riska Alvarido<sup>2\*</sup>, Rika Lidyah<sup>2</sup>**

<sup>1,2</sup>Raden Fatah State Islamic University

Corresponding Author e-mail: [riskaalvarido21@gmail.com](mailto:riskaalvarido21@gmail.com)

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**Abstract:** *The digital era has brought significant transformations to Islamic finance through fintech, blockchain, and digital currencies, offering efficient, transparent, and inclusive innovations, but facing regulatory and Sharia compliance challenges. This research aims to analyze the digitalization of Islamic finance in the 5.0 era, provide a systematic review, and address the challenges of strengthening the halal ecosystem. The descriptive-analytical qualitative method was applied through library research with secondary data from 32 peer-reviewed journal articles (2020–2025) via PRISMA, analyzed thematically to map the themes of innovation, regulation, and sharia ethics. The results show the rapid development of Islamic fintech (P2P lending, halal crowdfunding), the main challenges are the absence of global regulatory standards and data security, as well as strengthening strategies through stakeholder collaboration and integration of maqashid sharia. It is concluded that adaptive regulations and digital education are needed to realize a sustainable Islamic financial ecosystem in the 5.0 era.*

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### Introduction

In a highly competitive global economy, business practices are often dominated by profit-driven principles without regard for ethics, with large corporations ignoring social and ecological impacts in order to maximize profits. Sharia economics offers an ethical framework that aligns individual interests with collective ones, through the prohibition of *riba* (usury), *maysir* (gambling), and *gharar* (unlawful gambling), which are the root of injustice in the conventional system (Wahyuningrum et al., 2025). The development of Sharia finance is accelerating thanks to digitalization, introducing innovations such as Sharia fintech, which

encompasses digital payments, peer-to-peer lending, crowdfunding, and Sharia-compliant e-wallets (Primambudi & Maarif, 2024).

Digitalization brings significant opportunities for the Islamic economy, such as mudharabah/musarakah-based crowdfunding platforms that connect global investors, as well as Islamic peer-to-peer lending services, halal e-wallets, and digital zakat via blockchain (Wahyuningrum et al., 2025); (Norrahan, 2023). This phenomenon improves financial access, efficiency, transparency, and Sharia compliance, while automating processes to reduce costs and increase inclusiveness (Kanwal et al., 2023). The digital transformation of Islamic finance urgently needs to be strengthened through clear regulations, public education, stakeholder collaboration, and an emphasis on data security and privacy to build customer trust (Kanwal et al., 2023). Without these efforts, the potential of Islamic fintech as a vehicle for Islamic economic da'wah in the 5.0 era will not be optimally realized, especially amidst long-term operational risks.

This research offers novelty by integrating the maqashid sharia into the technological structure of fintech in the 5.0 era, making it an innovative, efficient, and inclusive adaptive da'wah medium, while exploring process automation for affordable services (Norrahan, 2023). Despite its rapid growth, sharia fintech faces structural gaps such as the absence of global regulatory standards for technical-sharia specifications, inconsistencies between countries, and a lack of service oversight and certification, which pose risks to product validity (Safitri et al., 2023); (Hasanah et al., 2024).

This research aims to formulate an effective regulatory strategy and supporting framework to maximize the benefits of digitalization of Islamic finance, realizing sustainable growth in line with Islamic principles in the 5.0 era.

## **Research Methods**

This study uses a qualitative approach with descriptive-analytical methods to deeply understand the phenomenon of Islamic financial digitalization in the 5.0 era, specifically a systematic review and the challenges of strengthening the halal ecosystem. This approach was chosen because it allows for a comprehensive analysis of socio-economic dynamics without direct empirical intervention. The study is library research with entirely secondary data. Data were collected from national and international scientific journal articles, academic books, research reports, and official documents related to the role of digital technology in Islamic finance. Searches were conducted through databases such as Google Scholar, Scopus, Sinta, Garuda, and DOAJ using the following keywords: "Islamic fintech," "Islamic financial digitalization," "5.0 era," "halal ecosystem," and "Sharia regulatory challenges" (period 2020–2025).

Data was analyzed using a thematic content analysis approach with the following steps:

1. Mapping of key topics (theme clustering: technological innovation, regulation, ethical challenges).
2. Narrative synthesis to identify patterns, gaps, and recommendations.
3. Triangulation validation of sources to increase the credibility of findings.

## Results and Discussion

The role of digital technology in Islamic finance refers to significant changes and positive impacts on various aspects of financial operations and services based on Islamic principles. This includes innovations in products and services fully supported by information and communication technology. However, the application of technology still poses various challenges and risks, particularly related to regulations, Sharia compliance, and digital literacy among the public. Islamic finance applies principles in accordance with Islamic principles.

In the context of Islamic finance, digitalization plays a crucial role in bringing innovation to the financial sector, ensuring its compliance with Islamic principles, while expanding product access for individuals and businesses. This, in turn, drives broader Islamic financial inclusion. Digitalization in Islamic finance encompasses several key aspects, such as fintech, blockchain, and AI and automation.

The development of digitalization in the Islamic financial sector is inseparable from various challenges, such as regulatory complexity, compliance with Islamic principles, low levels of consumer literacy, and weaknesses in data security and cyber risks. Therefore, this study seeks to examine these aspects in more depth and assess their impact on the dynamics of change in the Islamic financial industry.

These policy recommendations are expected to support the expansion of digitalization in Islamic finance while also addressing the various challenges that arise. Thus, utilizing digital technology to transform the financial sector can make a more significant contribution and provide broader benefits to communities seeking Sharia-compliant financial solutions.

### The Development of Digitalization in Islamic Finance

According to the Global Fintech Adoption Index report, global fintech adoption has reached 64%, indicating that the majority of consumers are now accustomed to using technology-based financial services. Southeast Asia, including Indonesia, is the region with the fastest growth in fintech adoption, in line with increasing internet and smartphone penetration, as well as the public's need for fast and efficient financial access (Huong et al., 2021). The emergence of fintech also presents a strategic opportunity to strengthen the Islamic financial ecosystem, which still faces various structural barriers. In Indonesia, despite its dominant Muslim population, Islamic financial inclusion remains relatively low, at less than 10% of the total national financial inclusion (Az-Zahra et al., 2022).

An empirical study by (Hazmi et al., 2025) supports this argument by showing that most current Islamic fintech products only emphasize the legality of transactions (whether they are halal or not), without integrating broader considerations of the maqasid sharia. As a result, many Islamic fintech innovations are declared legally halal, but they do not necessarily have a positive social impact or align with the inclusive and equitable goals of Islamic finance (Hazmi et al., 2025).

The Islamic finance industry continues to adapt to changing times while upholding its foundational values of ethics and fairness. In recent years, digitalization has provided a powerful transformational impetus, opening up numerous opportunities to increase efficiency, expand financial inclusion, and drive product innovation. The emergence of digital technologies such as fintech, blockchain, artificial intelligence (AI), and automation within the Islamic finance ecosystem has accelerated changes in the design, delivery, and access to



Islamic financial services.

Sharia Fintech (Sharia Financial Technology) is a technology-based service in the financial sector that operates in accordance with Islamic principles (Qudah et al., 2023). Sharia fintech combines digital innovation and adherence to Islamic legal principles in providing financial services to the public, especially groups underserved by the conventional banking system. In Indonesia, Sharia Fintech encompasses a variety of digital financial services, including: Sharia Digital Payments, Sharia P2P Lending, Sharia Crowdfunding, Sharia Electronic Wallets, and Sharia Investment and Capital Markets. These fintech services provide facilities and benefits tailored to customer needs while ensuring the key characteristics of Sharia fintech: avoiding riba (interest), freedom from gharar and maysir, and ensuring all transactions are conducted transparently and clearly in accordance with Sharia contracts. With the growth of digitalization, Sharia fintech can be an innovative solution that enables a more modern, efficient Islamic financial system that remains in accordance with Sharia principles (Primambudi & Maarif, 2024).

In Islamic finance, blockchain is used to ensure compliance with Sharia principles. Blockchain technology was first explored in the financial sector. This system is believed to effectively promote transparency, security, and Sharia compliance, thus preventing fraud in transactions. With the advent of blockchain technology, the Islamic finance sector has significant potential to benefit from its implementation. The role of artificial intelligence (AI) and automation in Islamic finance is being leveraged to respond to various customer inquiries regarding Sharia-compliant products, typically packaged in the form of Sharia chatbots. Furthermore, AI technology is also being applied to conduct data-driven risk analysis to ensure that every transaction remains in line with Sharia principles, thus minimizing the potential for violations.

The use of artificial intelligence (AI) is also applied in the automation of fatwas and the monitoring of compliance with Sharia principles. This technology serves as a tool for Islamic scholars in evaluating the compliance of transactions with applicable Sharia provisions. Based on the research findings, a summary of the technology's use can be presented in the following table:

**Table 1. Summary of Technology Use**

Aspect	Sharia Fintech	Blockchain	AI and Automation
Definition	Sharia-based digital financial services	Decentralized ledger technology that records transactions permanently	Artificial intelligence technology to improve efficiency and sharia compliance
Main function	Providing technology-based financial services in accordance with sharia	Ensuring security, transparency and efficiency in Islamic financial transactions	Analyzing data, automating services, and ensuring sharia compliance
Superiority	Transparent, interest-free, and increasing financial	Avoid data manipulation and ensure sharia	Increase efficiency, reduce human error, and support sharia



	inclusion	compliance	decisions.
Implementation	Sharia E-Wallet, Sharia P2P, Sharia Crowdfunding	Blockchain-based sukuk, digital waqf, zakat with smart contracts.	AI in Risk Analysis, Sharia Chatbot, Fatwa Automation

The primary focus of Islamic fintech is the provision of digital financial services that operate in accordance with Sharia principles. Blockchain technology plays a role in ensuring the security and transparency of transactions within the Islamic financial ecosystem. Meanwhile, the use of AI and automation is aimed at increasing process efficiency, minimizing human error, and strengthening Sharia compliance mechanisms in various financial activities.

### Challenges of Digital Transformation in Islamic Finance

The digital transformation in Islamic finance has brought various benefits to the public, such as increased efficiency, transparency, and financial inclusion. However, based on analysis of several reviewed articles, several key challenges remain that hinder the adoption of technology in the Islamic finance sector. Therefore, an in-depth consideration and analysis of the challenges of digital transformation in Islamic finance is necessary to better align it with Sharia-compliant transactional objectives.

Furthermore, the lack of clear global standards for Sharia compliance presents obstacles to regulatory harmonization. Different interpretations and fatwas from country to country regarding Islamic finance make it difficult for institutions to develop widely accepted services. Without uniform standards, digital technology in Sharia finance struggles to build trust internationally (Qudah et al., 2023). Another challenge in implementing Sharia digital financial technology is compliance with Sharia principles. The use of advanced technology such as AI and blockchain continues to face challenges in ensuring its conformity with Maqasid Shariah (the basic goals to be achieved by Islamic Sharia).

Obstacles to the digitalization of the Islamic financial sector also arise at the community level due to low literacy regarding digital technology. Many individuals do not fully understand the benefits or how this technology works, leading to hesitation in switching to digital service platforms. This lack of public knowledge about Islamic digital finance also contributes to the low utilization of Islamic financial services.

Therefore, more comprehensive efforts are needed to improve digital literacy and Islamic financial literacy to increase public confidence in using technology-based Islamic financial services. Furthermore, in several developing countries, the disparity in technological infrastructure remains a significant challenge to the development of Islamic fintech.

Access to the internet and technology remains limited, particularly in rural areas, making it difficult for people to use digital financial services. This situation hampers the growth of the Sharia fintech industry, as not all segments of society can benefit from technology-based financial services. A lack of investment in technological infrastructure also makes it difficult for Sharia financial institutions to adopt digital innovations.

Without adequate infrastructure support, Islamic banks and financial institutions cannot optimize technologies like blockchain and AI in their operations. This leaves Islamic financial services lagging behind conventional financial systems that have been more advanced in adopting digital technologies.



In the digital era, personal data protection and transaction security are key public concerns. Many potential users remain concerned about personal data misuse, financial information leaks, or potential fraud by individuals impersonating fintech platforms. Trust is a key foundation of the Islamic financial system, as the principles of trustworthiness and honesty are core values in every transaction. Therefore, every Islamic fintech provider must have a robust cybersecurity system, digital security certification, and a clear transparency mechanism for managing user data. Increasing public trust in the security of digital services will be crucial for the sustainability and growth of the Islamic fintech industry in the future (Nurazizah & Vidiati, 2025).

In the context of Islamic finance, transaction security becomes even more crucial due to the strict adherence to Islamic principles. The Islamic financial system requires additional layers of security to ensure that transactions remain legitimate and free from elements that violate Islamic law. With increasing cyber threats, strengthening regulations and investing in security technology are crucial steps to ensure the sustainable development of Islamic fintech.

The development of Islamic fintech is inseparable from various structural and systemic challenges that must be addressed comprehensively. One major challenge is the lack of global regulatory standards governing the technical and sharia specifications of Islamic fintech products. This raises the risk of inconsistencies between countries and doubts about the validity of products circulating in the market. Furthermore, a gap in skills between sharia experts and technology developers has led to a lack of maqasid-based innovation. Many fintech platforms simply adopt contracts textually without considering the contextual objectives of sharia (Safitri et al., 2023).

### **Digitalization Implementation Strategy for Islamic Finance in the 5.0 Era**

In the context of data-driven decision-making, it demonstrates how big data can be leveraged to more accurately assess the financial needs of Muslims. Through analysis of digital behavior, halal consumption preferences, and the potential for productive waqf, fintech platforms can develop strategies that are more oriented toward utility. However, the use of this data must be accompanied by Sharia ethics regarding privacy and user information protection. With this principle, information technology can become a tool supporting the maqasid (obligatory objectives), not merely a commercial instrument (Azizi, 2022).

The Islamic economic system is based on fundamental Islamic values such as justice (adl), balance (mizan), and social concern (maslahah). These principles also encompass the philosophies of monotheism, rubbubiyah (the right to equality), caliphate (caliphate), tazkiyah (the right to equality), and accountability. These values are realized through the prohibition of riba (usury), maysir (risk of losing), and gharar (unlawful activity), which are considered detrimental to one party. The primary goal of the Islamic economic system is not merely material profit, but rather the blessing and welfare of the community as a whole. Economic activity is viewed as part of worship, thus, economic actors have a spiritual responsibility to God and a social responsibility to society. Therefore, Islamic values demand moral integrity in every transaction (Ayu & Azzak, 2024).

In the modern context, the concept of Islamic financial inclusion plays a crucial role in realizing the economic goals of the people. Islamic financial inclusion means involving all

levels of society in accessing financial services in accordance with Islamic principles. By increasing inclusion, small and medium-sized communities can obtain financing without being trapped in usury or economic injustice. Islamic fintech, Islamic cooperatives, and Islamic microfinance institutions are strategic instruments in expanding the reach of financial services to the unbanked and underbanked (Romadi & Jaharuddin, 2024).

Sharia fintech plays a strategic role in strengthening the economic structure of the people by increasing access to financing in accordance with Sharia principles (Wulandari et al., 2025). To date, most micro, small, and medium enterprises (MSMEs) face obstacles in accessing financing from conventional financial institutions due to limited collateral, low creditworthiness, and incompatibility with interest-based mechanisms. Sharia fintech offers a solution by providing financing schemes based on Sharia contracts, such as *mudharabah* (profit sharing), *murabahah* (sale and purchase), and *musyarakah* (capital partnership).

With broader access to Islamic finance, people's purchasing power and economic productivity increase, ultimately contributing to collective prosperity. Therefore, Islamic financial inclusion is not only an indicator of Islamic economic success but also an effective means of strengthening the ummah's economy in the era of financial digitalization (Tia Nurazizah1 & Cory Vidiati, 2025). To minimize the fundamental problems of Islamic finance, a specific approach is needed to improve Islamic financial literacy and inclusiveness in Indonesia. One approach that can be taken is to utilize digital technology as a means to increase public access to Islamic financial products and services. There are four strategies for implementing digitalization in Islamic finance, as follows:

1. Strategic orientation

A thorough understanding of Sharia principles. Before undertaking digital transformation, Islamic financial institutions need to have a thorough understanding of the Sharia principles that underpin their operations. This is crucial to ensure that technology implementation focuses not only on operational efficiency but also on ensuring adherence to Islamic ethics.

2. Data analysis for service personalization

Use of customer data. Islamic financial institutions can use data analytics to gain a deeper understanding of customer behavior. With this greater understanding, financial services can be personalized to individual needs and preferences, creating a more satisfying customer experience. Data analytics can be used to understand economic conditions and provide better forecasting insights. This helps customers make better investment decisions and manage risk (Kurniawan et al., 2021).

3. Use of artificial intelligence and data analysis

The implementation of artificial intelligence and data analytics can help Islamic financial institutions understand customer behavior, identify market trends, and make smarter decisions. This helps improve service personalization, data-driven decision-making, and better capitalize on business opportunities (Ulhaq & Fajar, 2022)

4. Security and Sharia compliance

In the context of Islamic finance, information and transaction security are critical factors. Implementing robust security systems, including encryption technology and continuous security monitoring, is essential to protect customer information and ensure



compliance with Islamic principles. Digital transformation must support and ensure compliance with Islamic principles. Islamic financial institutions need to conduct regular audits and evaluations to ensure that any technology implementation complies with Islamic law and avoids prohibited activities (Kurniawan et al., 2021).

#### 5. Integrated Ecosystem Development

The government and other stakeholders are advised to encourage integration between sharia fintech, digital zakat, productive waqf, and halal marketplaces in a single digital-based Islamic economic ecosystem, in order to create strong and impactful synergies (Nurhayati & Julina, 2025).

### Conclusion and Recommendation

The digitalization of Islamic finance through fintech, blockchain, AI, and automation has revolutionized the sector by increasing operational efficiency, transparency, and financial inclusion in line with Sharia principles. This innovation expands access to halal services for the wider community, strengthening the position of the Islamic economy as an innovative system in the 5.0 era. However, structural challenges such as regulatory disparities, Sharia compliance, low digital literacy, limited infrastructure, and cyber risks hamper the potential for optimization. Global regulatory harmonization, integrated Sharia certification, and strengthening digital literacy through massive education programs are needed. Synergy between the government, financial institutions, and technology players is essential to mitigate data security. This strategy will create a sustainable, adaptive, and globally competitive Sharia financial ecosystem.

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