

Challenges of Sharia Compliance Audits in Islamic Banking: An Analysis of Fintech Developments in Indonesia

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ABSTRACT

Digital transformation has encouraged Islamic banking in Indonesia to integrate financial technology (Fintech) to improve efficiency and competitiveness. This study aims to examine the application of fintech in Islamic banking, its impact on sharia compliance, and evaluate the effectiveness of supervision in the digital age. This study uses a library approach with qualitative content analysis, as well as the theoretical framework of diffusion of innovation and Islamic financial law. The study found that although Fintech facilitates the implementation of Sharia principles through profit-sharing/buying and selling schemes and contract transparency, there are tensions between digital automation and Sharia accountability that could potentially lead to violations of Islamic principles if oversight is not strict. Therefore, the study concludes that there is an urgent need to develop a digital Sharia audit framework that is capable of performing a Sharia-compliant test directly on the system's source code, as well as encouraging collaborative innovation to embed compliance tools into the core of the technology.

Keywords: Sharia Compliance Audit, Sharia Fintech, Fiqh Muamalah

1. INTRODUCTION

Digital transformation has revolutionized the global financial services sector, including Islamic banking, which is now facing an urgent need to integrate financial technology (fintech) to improve efficiency and competitiveness. Amid the rapid development of technology, Islamic financial institutions face difficulties in ensuring compliance with Sharia principles that prohibit usury, gharar, and maysir (Ridwansyah et al., 2024). Although Sharia fintech is increasingly being used, there are still problems of gaps in religious literacy and technological capabilities that hinder the correct implementation in accordance with Sharia objectives. This condition poses a risk of deviation of digital financial practices from Islamic values due to weak regulatory oversight and poor understanding among users and service providers (Rahmah et al., 2024).

The development of financial technology has completely transformed the global financial services industry, including in Indonesia. The use of digital transactions in developing countries has experienced a significant surge, including in Indonesia, where the level of digital payment users in 2021 reached 52% compared to 34% in 2017. This fact indicates a shift in people's behavior towards digital technology-based finance.

Fintech growth in Indonesia shows rapid development, with more than 300 companies listed in the Financial Services Authority until 2024. The implementation of fintech through services such

as Sharia mobile banking, digital payments, and peer-to-peer (P2P) financing based on Islamic values has proven to improve efficiency, transparency, and customer comfort. However, these developments pose new challenges that require innovation in accordance with the principles of sharia compliance and adaptive governance to technological advances. Thus, the integration of digital payment systems in banking is not only related to efficiency, but also concerns aspects of religious legalization and public trust in Islamic financial institutions (Jange et al., 2024).

Data from banks in Indonesia in 2023 showed that the value of electronic money transactions reached Rp 403.6 trillion, an increase of 43% compared to the previous year. Fintech innovation also contributed to the payment of zakat, infaq, and alms, where around 78.57% of muzakki now prefer to make payments online through platforms such as OVO, GoPay, and LinkAja syariah, compared to 48.31% in 2019. Meanwhile, with only 36% of the population having a formal bank account, fintech in Indonesia is considered able to reach unbankable community groups, thus expanding digital-based Islamic principles are increasingly accepted by the muslim community in Indonesia.

The conflict between innovation speed and compliance control is a central issue in this study. Traditional risks, such as credit risk measured with TWP90, have been mitigated by the industry, but substantial risks related to Sharia compliance are often not measured explicitly in regulatory metrics. Sharia fintech operations are regulated in a dualistic framework, including OJK regulations, for example, POJK.01/2016 about information technology-based money lending services, and fatwas issued by the National Sharia Council of the Indonesian Ulema Council (DSN-MUI), such as fatwa No. 117/DSN-MUI / II.2018 on financing services (Silalahi, 2025). The complexity of this regulation demands integration between positive law and Sharia principles at the level of algorithms and internal controls,

Sharia compliance Audit is a critical function that aims to ensure that all operational aspects, from products, contracts, governance, natural resources, to business processes, comply with Sharia principles and rules (Nugraheni, 2012). In technology-based Islamic financial institutions, the role of auditing becomes much more complex compared to traditional financial institutions. The digital transformation driven by fintech P2P lending brings with it new risks. These risks include operational risks, compatibility technology risks, data integrity, and compliance risks unique to automation and data privacy. Failure to manage these risks not only threatens the operational stability of Platform A, but also potentially damages the reputation and integrity of the entire national Islamic finance (Borhan et al., 2025).

The main innovation in Sharia P2P Fintech is the automation of contract and transaction processes, often through algorithms that resemble smart contracts. Consequently, the substance of sharia compliance is no longer only in physical documents, but is embedded directly in programming logic. Traditional audits that focus on examining documents, final reports, or passive interviews are becoming inadequate. Sharia irregularities can occur and continue on a large scale if the logic of the algorithm, for example, incorrectly interprets the rasion or automatically imposes non-Sharia fines. Therefore, a new audit method is needed that is able to perform a Sharia compliance test directly on the source code of the system (Anwar & Pustaka, 2025).

Sharia P2P fintechs in Indonesia generally apply buy and sell-based contracts, such as Murabaha or partnerships, such as Musharakah and mudharabah. This study shows that Murabaha contracts tend to dominate because they are considered to offer lower efficiency and risk (Syifa et al., 2025). However, the excessive use of Murabaha has been criticised for failing to reflect the value of partnerships and the range of risks that are the core ethos of Islamic finance. Musyarakah and mudharabah agreements, which are in line with the principles of various risks, are more recommended. However, the biggest challenge lies in how to implement Musharakah/mudharabah transparently in a digital system, ensuring that the revenue sharing mechanism and the insurer are completely in accordance with fiqh (Sulaiman & Jamaluddin, 2025).

The researcher aims to examine how financial technology (fintech) is implemented by Islamic banking institutions and how such implementation affects compliance with Sharia

principles, particularly the Prohibition of *riba*, *gharar*, and *maysir*. The study also aims to identify common digital innovations in Islamic finance and evaluate the effectiveness of Sharia supervision in the era of digitalization. This study uses the theory of diffusion of innovation to investigate internal and external factors that facilitate or hinder the comprehensive implementation of fintech within a framework that complies with Islamic law.

This urgency lies in the potential tension between digital efficiency and compliance with Sharia principles. Although digitization offers benefits such as wider coverage, lower operational costs, and faster service. It turns out that there is still a risk of violating Sharia both technically and substantially if there is no close supervision and proper system design. Therefore, it is important to conduct in-depth and evidence-based research on how Islamic financial institutions can strategically digitalize while maintaining their core legal and ethical commitments.

2. LITERATURE REVIEW

The theoretical basis of Fiqh Muamalah in Sharia Fintech

Islamic finance is based on a set of ethical and legal principles aimed at realizing justice and prosperity (*falah*). The three fundamental prohibitions that must be avoided in all Sharia transactions, including in the fintech environment, are *Riba*, *Gharar*, and *Maisir* (Azharah et al., 2025).

1) Diffusion Theory Of Innovation

This study uses the theory of diffusion of innovation developed by Everett M. Rogers in 1962. This theory describes the process by which innovations are communicated and adopted in a social system through five stages: knowledge, persuasion, Decision, Implementation, and confirmation. In Islamic finance, the theory is applied to examine how technological innovations, particularly fintech, are adopted by Islamic-based financial institutions, and how specific characteristics of the innovations influence implementation decisions. This theory serves as a conceptual framework for assessing the readiness of institutions for innovation in relation to compliance with Sharia law.

2) *Riba* (Interest / Exchange is Not Equivalent)

Refers to the addition or excess hinted at in a loan or exchange transaction in a loan or exchange transaction of similar goods. *Riba* in the context of Sharia Fintech refers to the practice of taking additional or excess interest illegally (interest or interest) in debt-receivable transactions (*Riba Nasī'ah*) or exchange of similar goods that are not equivalent and not cash (*Riba Fadhl*), which this practice is expressly prohibited (*haram*) in Islamic law because it is considered a form of exploitation and economic injustice (Noh, 2023).

3) *Gharar* (Vagueness / Ambiguity of the Contract)

Refers to significant uncertainty in the object, price, or terms of the contract. The use of smart contract technology or complex algorithmic logic has the potential to increase the risk of *gharar* complex potentially increases the risk of *gharar*, especially if the terms of the contract are not fully transparent and understood by both parties (investors and loans) (Muzaki, 2025).

4) *Maisir* (Speculation / Gambling)

Maysir is a Sharia prohibition that refers to any form of gambling, betting, or pure speculation in which the acquisition of property depends on the sheer factor of luck (chance) and not from real effort or productive economic added value, resulting in losses for one party and instant profits for the other.

In the context of Islamic Fintech, this prohibition is implemented by ensuring that digital platforms do not provide or facilitate products that are speculative and resemble gambling, such as trading designed like guessing, paid lottery schemes that aim to make a profit from betting, or activities that explicitly do not have a connection with real assets or businesses. The goal is to maintain fairness in transactions and encourage fintechs to focus on financing, investment, and service activities that are based on reasonable and measurable business risks, rather than on speculation dominated by fate factors.

5) Financial Technology

Financial Technology, or better known as fintech, is a technological innovation in the financial world. According to Fahlevi, quoted from the National Digital Research Center (NDRC), fintech is a technological innovation using modern technology in the Financial Field. (Generasi et al., 2022) Basically, fintech is a technology-based financial service, where fintech is an innovative service in the field of financial services that uses online systems. One of the fintech products, such as electricity bill payments, vehicle installments, or insurance premiums made online. In Indonesia, fintech has become a business worth hundreds of trillions of rupiah because it offers several services, namely loans, payments, personal finance, retail investments, financing, remittances, and financial research.

3. RESEARCH METHODS

This study focuses on the phenomenon of the application of financial technology (fintech) in Islamic banking, which raises greater challenges for the preservation of Islamic finance. Many fintech integrations, such as P2P lending and digital banking by Islamic financial institutions, are driven by efforts to pursue greater operational efficiency and financial inclusion. However, the rapid adoption of these innovations creates regulatory and ethical dilemmas, particularly regarding the violations of *riba*, *gharar*, and *maysir*, which are the cornerstones of Islamic financial law. The object of this study is the current condition of fintech practices in the Islamic banking sector in Indonesia. Although the sector is showing rapid growth, it still faces significant obstacles in ensuring that its practices are fully aligned with applicable Islamic law.

This study uses a library approach by collecting and analyzing secondary data from the scientific literature. Secondary data includes journal articles, conference papers, academic books, and regulatory documents that address broader themes related to the study. This study uses the theory of diffusion of innovation developed by Everett M. Rogers in 1962. This theory describes the process by which innovations are communicated and adopted in a social system through five stages: knowledge, persuasion, Decision, Implementation, and confirmation.

In Islamic finance, this theory is applied to examine how technological innovations, particularly fintech, are adopted by Islamic-based financial institutions, and how specific characteristics of the innovations influence implementation decisions. This theory serves as a conceptual framework for assessing the readiness of institutions for innovation in relation to compliance with Sharia law.

This research is a qualitative study that relies on a systematic review of textual sources, including peer-reviewed journal articles, scientific books, industry reports, legal documents, and fatwas from sharia authorities. In order to guarantee an up-to-date and relevant analysis, the selection of literature is limited to the publications of the last five years. Data collected using documentation techniques are processed and interpreted through content analysis. This analysis process includes theme identification, coding, and categorization of recurring concepts to detect relevant key patterns and insights. Triangulation by comparing different sources is also applied to increase validity and reduce bias. This qualitative content analysis uses innovation diffusion theory and Islamic finance law as the main framework to synthesize literature, identify trends, and formulate conceptual insights regarding fintech adoption in Islamic banking.

4. RESULTS AND ANALYSIS

This study indicates that Islamic banking in Indonesia is experiencing significant growth, characterized by an increase in assets, the number of customers, and institutional variations. This expansion is driven by government regulatory support and increased public awareness of Islamic financial values. This development is also in line with macroeconomic trends and increased Islamic financial literacy. Islamic banking institutions currently offer many financial products based on Islamic contracts, such as *mudharabah*, *Musharakah*, and *murabahah*.

This growth has been accompanied by organizational changes focused on digital services, compliance structures, and better governance. The role of the Sharia Supervisory Board (DPS) is increasingly crucial in ensuring that all products remain ethically and legally consistent. Service modernization is supported by investment in fintech infrastructure that is tailored to Sharia principles (Aditya et al., 2025). However, there is a major issue that arises: although Islamic banking is growing rapidly, the integration of digital technologies is not always aligned with Sharia control mechanisms. This highlights the core issue of the study, namely, how accelerating digital innovation (fintech) poses compliance risks in institutions that are legally and ethically obliged to comply with Islamic jurisprudence.

The implementation of Financial Technology (Fintech) by Islamic banking institutions is a strategic innovation to improve operational efficiency, expand access to services, and provide fully Sharia-compliant products. Fintech enables Islamic banks to transform from physical services to end-to-end digital services, including mobile banking, online account opening, to digital investment and financing platforms. This integration fundamentally strengthens adherence to sharia principles, particularly in avoiding prohibitions on *riba* (interest), *gharar* (obscurity), and *maysir* (speculation/gambling).

The Prohibition of usury was overcome by changing the concept of loan interest to a profit-sharing scheme (*Mudharabah* or *Musharakah*) or buying and selling (*Murabahah*) in the Sharia Peer-to-Peer (P2P) digital financing platform, where the profits obtained by lenders come from real business profits, not from setting interest in advance. Furthermore, *gharar* risks are minimized through technological features that ensure transparency and clarity of the contract, for example, with the use of blockchain-based Smart contracts or the provision of highly detailed disclosure information on risks, costs, and profit-sharing mechanisms, ensuring there is no element of uncertainty in the transaction. (Peer-to-peer & Wiyono, 2020)

Finally, the ban on *maysir* is maintained by a strict selection of sectors and financing objectives that must be halal and productive, and supervised by the Sharia Supervisory Board, so that Sharia digital products, such as mutual funds or Sharia stocks, avoid pure speculative activity. Thus, Fintech is not only a tool of efficiency but also a means of Sharia validation that facilitates the implementation of Islamic principles in the modern economy.

The most common digital innovations in Islamic finance center on Sharia Fintech, which includes Sharia Digital payment services, Sharia Peer-to-Peer (P2P) Lending with profit-sharing agreements (*Mudharabah* or *Musharakah*), and Digital investments, all of which are required to comply with DSN-MUI fatwas to avoid usury, *gharar*, and *maysir*. In addition to service products, the use of technology such as Blockchain is used to increase transaction transparency, while Artificial Intelligence (AI) and Big Data are implemented to improve operational efficiency and strengthen Sharia risk management. (Peer-to-peer & Wiyono, 2020)

While these innovations offer greater accessibility and inclusion, the effectiveness of surveillance in the era of digitalization faces significant challenges: the speed of innovation often exceeds the pace of regulations and fatwas (dynamic regulations), giving rise to gray areas in sharia compliance and the risk of mixing conventional funds. Supervision becomes complex because transactions take place in real-time and borderless, demanding the integration of technology in supervision, strengthening the capacity of Sharia Supervisory Boards in the field of technology, and closer regulatory collaboration between financial authorities and sharia authorities to ensure Sharia integrity and accountability in the digital ecosystem.

The study affirms that the development of Islamic Fintech must take into account the technical and ethical dimensions in a balanced way, as the core objective of evaluating the impact of Fintech on Sharia compliance is validated by the increasing tension between digital automation and Sharia accountability; technological innovation must be assessed on its ability to enforce religious norms and Justice. In practical terms, the study highlights the urgent need for an effective digital Sharia audit framework, given that the absence of real-time surveillance technology creates vulnerabilities that can lead to violations of Islamic principles, hence the call for collaborative

innovation between Sharia councils, regulators, and developers to embed compliance tools directly into the core of the technology. This imbalance stems in large part from the gap in regulatory adaptation that tends to be reactive rather than proactive, and the lack of institutional capacity and training of practitioners in the field of technology and Sharia jurisprudence. To ensure continuous integration, the study recommends the development of standardized digital compliance metrics, digitization of fatwa references, strengthening the capacity of sharia boards, and the establishment of a dedicated regulatory sandbox for real-time compliance testing.

5. CONCLUSION

The implementation of financial technology (Fintech) by Islamic banks in Indonesia is a strategic innovation for efficiency, transparency, and inclusion, which also aims to strengthen compliance with Sharia principles (avoiding Riba, Gharar, and Maisir). Nevertheless, this rapid development raises a central issue in the form of a conflict between the speed of digital innovation and the need for Sharia compliance controls.

The role of compliance auditing has become very complex, especially since the substance of Sharia compliance is now embedded directly in the programming logic of algorithms and smart contracts. As a result, traditional auditing that focuses only on physical documents is inadequate, and a new audit method is needed that is capable of performing a Sharia-compliant test directly on the system's source code to prevent large-scale irregularities (for example, misinterpretation of ratios or imposition of non-Sharia fines). The challenge of surveillance is increasingly significant because the speed of innovation exceeds the pace of regulation and fatwas, creating gray areas and requiring the integration of surveillance technology (RegTech and SupTech). Therefore, the study emphasizes the urgent need to develop an effective digital Sharia audit framework, including standardized digital compliance metrics, digitization of fatwa references, and strengthening the capacity of Sharia Supervisory Boards (DPS) in technology.

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