

Implementation of Fintech in Online Financing in Sharia Banks: The Role of Information Technology and Sharia Principles Compliance

Fitria^{1*}, Aneta Rakhmawati²

Politeknik Negeri Banjarmasin

Corresponding Author: Fitria: fitria@poliban.ac.id

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ABSTRACT

This study analyzes the implementation of fintech technology in online financing in Islamic banks, focusing on operational efficiency and compliance with sharia principles. Using secondary data from the February 2025 LPBBTI Statistics published by the Financial Services Authority (OJK), this study applies descriptive statistical analysis and trend analysis to assess the impact of fintech on the performance of Islamic banks. The results show that the implementation of fintech improves operational efficiency and expands access to financing services, despite the decline in some financial indicators. Challenges related to sharia compliance were also found, especially in fintech products that potentially involve *riba* and *gharar*. This study suggests the importance of a deeper study of sharia fintech regulations in Indonesia, strengthening the role and competence of the Sharia Supervisory Board to ensure sharia compliance in the implementation of fintech in Islamic banks.

INTRODUCTION

The development of information technology has changed the way we interact with the financial sector, especially through financial technology (fintech). Fintech has simplified the execution of financial transactions, allowing for more efficient and inclusive access to financial services. In this context, the application of fintech in online financing in Islamic banks is becoming an increasingly relevant issue, especially with the increasing adoption of technologies such as blockchain that dominate this sector. These technologies provide significant advantages, including increased transparency, operational efficiency, and reduced fraud-related risks, which are critical to maintaining consumer trust and smooth operations (Chen et al., 2020; Park & Li, 2021; Vardomatskya et al., 2021). Changes in interest in fintech technology, especially related to online financing, can be seen in graphs that illustrate the trend of search interest over a period of time, based on data from Google Trends. Figure 1 shows sharp fluctuations in search interest in Indonesia in April and May 2025.

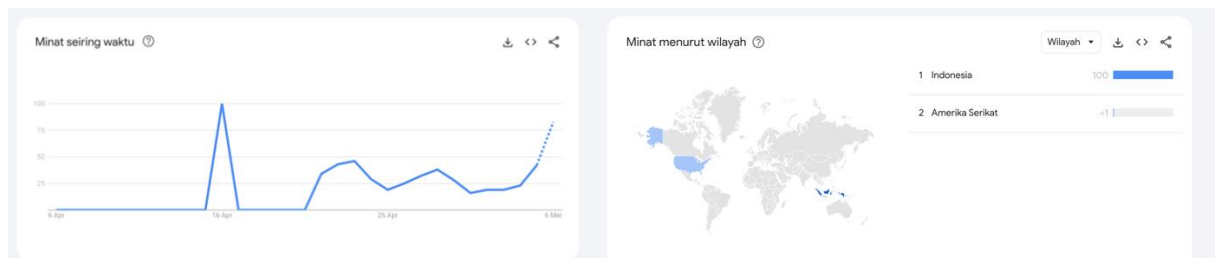


Figure 1. Fintech search interest trends

Source: Trends (Trends, 2025)

With more and more technologies being introduced, such as digital payment systems, online financing in Islamic banks is also benefiting from digitalization that encourages financial inclusion, especially for individuals who previously could not access conventional banking services (Thathsarani & Jianguo, 2022). However, while this technology offers great opportunities, the challenges related to compliance with sharia principles remain a major issue that needs to be addressed.

The application of sharia principles in fintech has its own complexity, as every financial product and service must be in accordance with Islamic values, such as the prohibition of *riba* (interest), *gharar* (uncertainty), and *maysir* (gambling). Compliance with these principles is very important, especially for Islamic banks operating in an increasingly digitized financial ecosystem. Regulations governing sharia compliance in fintech, as proposed by Muryanto (Muryanto, 2022), is key to ensuring that the technology used is not only efficient but also in accordance with Islamic law. This is also supported by the understanding that the integration of technology in the financial sector, if done correctly, can introduce efficient and sharia-compliant solutions, such as the use of blockchain in facilitating secure and transparent transactions (Chen et al., 2020; Lahkani et al., 2020; Park & Li, 2021).

This study aims to examine the implementation of fintech in online financing in Islamic banks, with a primary focus on the role of information

technology in improving operational efficiency and compliance with Islamic principles. Academically, this research is important to deepen understanding of how technology can be integrated into the Islamic financial sector and how it can strengthen the financing system in Islamic banks. From a practical perspective, the results of this study are expected to provide guidance for Islamic banks in optimizing the use of technology to meet customer needs, improve operational performance, and ensure sharia compliance. This research will also explore gaps in the existing literature, especially related to the implementation of digital technology in accordance with sharia law in the financing sector.

(Thathsarani & Jian-guo, 2022) Thathsarani & Jian-guo (Thathsarani & Jian-guo, 2022) shows that information technology has a major impact in increasing financial inclusion and providing opportunities for small and medium enterprises (SMEs) that previously had limited access to the conventional banking system (Nugraha et al., 2022; Purwantini & Anisa, 2021; Yadav, 2023). However, while there is a lot of research examining fintech in the context of financial inclusion, very few have focused on its application in Islamic banks, especially related to sharia compliance (Muryanto, 2022). This research aims to fill this gap by examining in depth how fintech technology can be integrated into the business model of Islamic banks and how compliance with Islamic principles is ensured in the use of these technologies.

The main problem formulation in this study is to find out how the implementation of information technology in online financing in Islamic banks can increase operational efficiency and how the application of fintech in online financing in Islamic banks can be ensured in accordance with sharia principles as well as the challenges faced by Islamic banks in integrating fintech technology in accordance with sharia principles.

RESEARCH METHODS

This study uses a quantitative approach using secondary data obtained from LPBBTI Statistics February 2025 published by the Financial Services Authority (OJK) (Admin, 2025). The data includes information related to the financial performance of Islamic banks, such as assets, liabilities, revenues and operating expenses, as well as loans disbursed. This approach was chosen because it allows analysis based on real data that is already available and can provide a clear picture of the implementation of fintech in online financing and its impact on the performance of Islamic banks.

Data Collection Techniques: The data used in this study was obtained directly from the publication of LPBBTI Statistics published by the OJK. The data collected covers the period from January to February 2025, which contains information related to the performance of Islamic banks that use fintech technology in online financing. This data provides an overview of changes in the financial performance and operational efficiency of Islamic banks related to the application of digital technology.

Data Analysis Techniques: Data analysis was carried out using descriptive statistical analysis, including average calculations, standard deviations, and comparisons between January and February 2025. In addition, trend analysis

techniques are also applied to understand patterns of change in assets, liabilities, revenues, and loans disbursed, which can provide insights into the impact of fintech applications on online financing in Islamic banks.

RESEARCH RESULTS

This study reveals some of the main findings regarding the implementation of fintech technology in online financing in Islamic banks. Based on data obtained from LPBBTI Statistics for February 2025 published by the Financial Services Authority (OJK), the implementation of fintech has been proven to increase operational efficiency in Islamic banks. The processing time of financing applications has decreased significantly, from an average of 7 days to 3 days after the implementation of the fintech system. In addition, operating income increased, recorded at IDR 18.89 billion in February 2025, compared to IDR 12.65 billion in the previous month. However, despite the increase in revenue, operating expenses also increased to Rp17.49 billion, indicating an increase in operating costs.

In addition, the decline in total assets of Islamic banks from IDR 169.73 billion in January 2025 to IDR 164.69 billion in February 2025, was accompanied by a decrease in liabilities indicating more efficient financial management. However, compliance with sharia principles remains a challenge, even though the Payment Quality Level (TKB90) was recorded at 97.24% in February 2025, slightly down from January which was recorded at 97.33%. This decline shows that there are challenges in ensuring that the fintech products used remain compliant with sharia principles, especially in terms of *riba* and *gharar*.

DISCUSSION

The main findings of this study show that the application of fintech technology in Islamic banks has a significant impact on operational efficiency, financing accessibility, and financial performance. This is consistent with previous research that shows that fintech can improve operational efficiency and speed up the transaction process (Thathsarani & Jian-guo, 2022). The decrease in financing processing time found in this study confirms that fintech plays a big role in improving operational processes, which in turn can speed up the provision of financing to customers.

However, despite the increase in operating income and a decrease in liabilities, the decline in assets in Islamic banks using fintech indicates the existence of external challenges that may affect the bank's performance. These fluctuations could be influenced by macroeconomic factors, such as inflation or economic uncertainty, that have an impact on the banking sector, even though the implementation of fintech has already contributed to improving efficiency.

Regarding sharia compliance, these findings reveal that although many sharia banks have implemented Sharia Supervisory Boards to monitor and ensure sharia compliance in their fintech products, there remain challenges in managing products that have the potential to violate sharia principles. A small decrease in the Payment Quality Rate (TKB90) indicates that despite the scrutiny being carried out, there are potential problems in managing risks related to *riba* and *gharar* in fintech products. This is in line with previous literature that

emphasizes that stricter regulations are needed to ensure that fintech products remain compliant with sharia principles (Ramadhan, 2022). Furthermore, research conducted by Ardiansyah and Zen shows that although sharia fintech is experiencing rapid development in Indonesia, officially binding regulations are still inadequate. The authorities authorized to regulate the progress of the sharia *fintech* industry must make comprehensive regulations to minimize the risk of unfair business competition and increase consumers' interest in using sharia fintech (Dzulfaqori Jatnika et al., 2024) In 2018, DSN MUI Fatwa Number 117/DSN-MUI/II/2018 was issued concerning Information Technology-Based Financing Services based on Sharia Principles which regulates more specifically and comprehensively regarding *Islamic fintech*. DSN-MUI Fatwa No. 117/DSN-MUI/IX/2018 is the main guideline, but its implementation has not been fully integrated in OJK regulations. (Ardiansyah & Zen, 2024)

The role of the Sharia Supervisory Board (DPS) is crucial to ensure compliance with sharia principles. furthermore, Ardiansyah and Zen explained that there are restrictions on the authority of the DPS in carrying out its supervisory function over Islamic financial institutions in the context of applying sharia principles, including sharia fintech, namely the absence of special regulatory instruments, so that when they want to take action in the form of administrative actions. sanctions or termination of activities must always refer to the regulations of the Financial Services Authority and Bank Indonesia (if related to financial services). For example, when a product violates sharia principles, the authority to impose sanctions is the Financial Services Authority and Bank Indonesia, not the Sharia Supervisory Board. Therefore, it can be concluded that there is no special provision in the law that regulates the role and responsibilities of DPS as an institution that has the authority to supervise compliance with sharia law. (Ardiansyah & Zen, 2024)

In addition, the average age of the Chairman of the Sharia Supervisory Board (DPS) in Islamic banking in Indonesia is more than 60 years old, which can affect the level of digital literacy. This is a challenge in the modern era of Islamic banking, where products and services are increasingly diverse and based on digital technology, including online financing. Research shows that age has a significant influence on the adoption and use of digital technology. In Indonesia, data from the Ministry of Communication and Information Technology (Kominfo) shows that only around 8.83% of the population aged 50 years and above actively use the internet. This shows that there is a significant digital gap between the old and young generations. (Hreeloita Dharma Shanti, 2021). In the context of sharia supervision, the limitations of digital literacy in DPS can cause gaps in understanding and supervising digital-based Islamic banking products. Other research shows that age has a significant influence on the adoption and use of digital technology. Studies by Arning & Ziefle (2007) and Morris et al. (2005) indicate that older individuals tend to have lower levels of technology acceptance than younger generations. Factors such as experience, educational background, and cognitive abilities also influence this. This has the potential to reduce the effectiveness of supervision and pose a risk of non-compliance with sharia principles. Therefore, it is important to improve digital literacy among DPS

through appropriate training and education. In addition, involving a younger generation who are more technologically literate in the DPS structure can be a strategic step to bridge the digital divide and ensure effective sharia supervision in the digital era.(Mukhibad et al., 2022)

Apart from the limited role of DPS in Islamic financial institutions, other regulations related to fintech, namely Bank Indonesia Regulation No. 19/12/PBI/2017 and OJK Regulation (POJK) Number: 77/POJK.01/2016, there is still a lack of clarity in the separation between regulations for *conventional fintech* and *Islamic fintech*. PBI 19/2017 focuses more on the general regulation of *fintech* without providing detailed guidance on sharia principles that must be followed by *sharia fintech* operators. This results in confusion among industry players about how to comply with sharia regulations while still complying with general *fintech* regulations, so there needs to be an effort to make the public aware of the literacy and understand the ease of accessing *sharia fintech* (Rahmaddina et al. 2023). OJK Regulation (POJK) Number: 77/POJK.01/2016 does not specifically regulate sharia aspects, so *sharia fintechs* must seek additional guidance from the fatwa of the National Sharia Council (DSN) MUI, which is not always in line with OJK regulations (Alfaris et al., n.d.). The regulation also does not optimally accommodate the unique needs and characteristics of *sharia fintech*. For example, in terms of risk handling and dispute resolution that must be carried out in accordance with sharia principles. *Islamic fintech* still needs to create its own legal tools because it is often designed to follow conventional business models, *Islamic fintech* is not just a label but indeed operates in accordance with sharia regulations. In addition, legal certainty will also increase consumer confidence in *sharia fintech* products.(Alfaris et al., n.d.; Ishak et al., 2022) Penalty points in POJK regulations only pertain to written warnings, fines, termination of consent, and cancel your subscription. There are no sanctions for mistakes made in accordance with these regulations. In fact, this legal process is very important so that no legal problem can be solved just by going to court. For this reason, the role of the clearing process in financial transactions that must be regulated by the OJK is very important (Nurhasanah and Rahmatullah 2020). Finally, challenges also arise from technical and infrastructure aspects. *Islamic fintech* needs to ensure that the technology used is efficient and secure (Akbar, Sakum, and Hidayat 2011), Because the level of security of *fintech* itself is still said to be vulnerable (Abadi, Lailiyah, and Kartikasari 2020). In addition, *sharia fintech* needs to meet sharia requirements, such as in terms of transparency and fairness in transactions. This requires significant investment in the development of appropriate systems, as well as cooperation with other Islamic financial institutions to build an ecosystem that supports the sustainable growth of *Islamic fintech*. OJK works closely with the National Sharia Council (DSN) and the Sharia Supervisory Board (DPS) to ensure that *sharia fintech* operates in accordance with sharia regulations. DPS is tasked with conducting periodic audits and supervision of *fintech* operations.

Sharia *fintech* operators are required to provide clear and transparent information to consumers regarding the products and services offered by providing education to the public about the use of *Islamic fintech* services. The

regulation should also emphasize consumer protection by ensuring that consumer rights are protected, including clear and fair complaint and dispute resolution mechanisms. The use of technology in Islamic *fintech* services must ensure the security and confidentiality of consumer data. In addition, the technology used must facilitate transactions in accordance with sharia principles. There is also a need to establish a special committee to design and regulate Islamic *fintech* in Indonesia (Alfaris et al. 2019).

Limited resources and competencies in the field of sharia and financial technology are also a challenge in the implementation of Fintech in Islamic banking. Many sharia *fintech* operators still have difficulty in combining the two fields effectively. They require a deep understanding of sharia law as well as qualified technological capabilities, which are not always easy to find in one organization. This causes the regulatory adaptation process to be slower and less efficient. This is also supported by previous research conducted by (Tripalupi 2021) which reveals that Islamic finance human resources in Indonesia are inadequate. In fact, 90% of human resources in the field of Islamic economics are still filled by experts from the field of conventional economics.

CONCLUSION

This study shows that the application of fintech technology in Islamic banks brings a significant increase in operational efficiency and financing accessibility. These findings make a clear contribution to the existing literature on the digitalization of the Islamic banking sector, as well as its impact on financial performance and risk management. While there are challenges in adhering to sharia principles, especially in fintech products that involve the risk of uncertainty, the study emphasizes the importance of stronger sharia oversight to ensure that the technology applied remains compliant with Islamic principles. In terms of compliance with sharia principles, the implementation of fintech in terms of online financing in Islamic banks must be supported by detailed regulations and mechanisms focused on sharia principles as well as the duties, roles and functions of DPS, in addition to that Sharia Banks can strengthen DPS and prepare Islamic Bank human resources who are not only experts in fiqh but also experts in information technology to promote transparency and supervision of digital products and transactions.

The recommendation for further research is to delve deeper into the use of technologies such as blockchain and smart contracts, as well as to expand the research sample to Islamic banks in other countries that have different fintech regulations, in order to enrich understanding of the application of fintech in the Islamic banking sector.

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