

## **Fintech Adoption in Islamic Banking: Implications for Achieving Sustainable Development Goals**

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### **Abstract**

In the increasingly modern era, the digitization of the banking industry has been developing rapidly. Banks that fail to adapt to technological advancements tend to experience declining competitiveness, which encourages financial institutions to leverage digital technologies in their operations. Along with this development, several emerging financial technologies, such as Securities Crowdfunding (SCF) and Peer-to-Peer (P2P) finance, have gained significant attention. This study analyzes these technologies separately to examine their potential application within Islamic banking. This research employs a quantitative approach using correlation and one-directional analysis to address the research questions. The findings aim to explain Islamic banks' perspectives on digital transformation and to identify the strategic direction adopted by Islamic banks in their digitalization efforts. The results reveal that, in general, the implementation level of emerging digital technologies in Islamic banking remains relatively low. An exception is mobile banking, which has been widely implemented due to the availability of established public infrastructure. It is expected that the findings of this study will encourage Islamic banks, particularly in Indonesia, to increase capital investment in digital innovation in order to enhance competitiveness with conventional banks and strengthen the sustainability of Islamic banking in the digital era.

**Keywords:** Fintech, Islamic Banking, Sustainable Development, Digital Transformation

### ***Abstrak***

Pada era modern saat ini, digitalisasi industri perbankan berkembang dengan sangat pesat. Bank yang tidak mampu beradaptasi dengan perkembangan teknologi cenderung mengalami penurunan daya saing, sehingga mendorong lembaga keuangan untuk memanfaatkan teknologi digital dalam kegiatan operasionalnya. Seiring dengan perkembangan tersebut, berbagai inovasi teknologi keuangan (financial technology) seperti Securities Crowdfunding (SCF) dan Peer-to-Peer (P2P) finance semakin mendapatkan perhatian. Penelitian ini menganalisis kedua teknologi tersebut secara terpisah untuk mengkaji potensi penerapannya dalam perbankan syariah. Penelitian ini menggunakan metode kuantitatif dengan analisis korelasi dan analisis satu arah untuk menjawab pertanyaan penelitian. Hasil penelitian bertujuan untuk menjelaskan perspektif bank syariah terhadap transformasi digital serta mengidentifikasi arah strategi yang diambil bank syariah dalam proses digitalisasi. Temuan penelitian menunjukkan bahwa secara umum tingkat implementasi teknologi digital yang berkembang dalam operasional perbankan syariah masih relatif rendah. Pengecualian terdapat pada layanan mobile banking yang telah diimplementasikan secara luas karena didukung oleh infrastruktur public yang memadai. Diharapkan hasil penelitian ini dapat mendorong bank syariah, khususnya di Indonesia, untuk meningkatkan investasi modal dalam inovasi digital guna meningkatkan daya saing dengan perbankan konvensional serta memperkuat keberlanjutan perbankan syariah di era digital.

**Keywords:** Fintech, Perbankan Syariah, Pembangunan Berkelanjutan, Transformasi Digital

### **INTRODUCTION**

Fintech is an innovation in the financial services sector where there is no longer a need to use paper money. In other words, the existence of financial technology changes currency to digital to make it more efficient. In a number of literatures, various definitions of FinTech are found. In general and in a broad sense, FinTech refers to the use of technology to provide financial solutions (Barberis et al., 2019). Furthermore, specifically, FinTech can also be defined as a digital technology application that aims as a financial intermediary (Estrada-Rivadeneira, 2017). In a broader sense, FinTech is defined as an industry consisting of companies that use technology to make the financial system and the distribution of financial services more efficient. (Muzdalifa et al., 2018).

Fintech is also defined as technological innovation in financial services that can produce business models, applications, business processes or products that have a significant impact on business activities related to the provision of financial services. (Kustiwi & Sawarjuwono, 2021). Progress in economic transactions, known as Fintech, also influences technological innovation in the world of Sharia economics and finance in Indonesia.

The banking industry has undergone several digital transformations. Starting from the spread of credit cards, in the last decade, technology has become and remains at the heart of banking, moving almost all its services online in a phenomenon known as the “Bank 4.0” concept.(King, 2018). Digital transformation is quickly shifting from being an advantage to being a necessity for all banks to survive amidst other financial institutions, and media companies.

With rapid changes in the financial industry and the emergence of new players such as Fintech companies, other technology giants, and media-telecommunications companies, banks need to change their competitive strategies. Today's customers think about what they want, making it difficult for financial institutions to serve them. Even established financial institutions or banks have difficulty organizing their operations to meet emerging needs, unlike start-ups and Fintechs. The digitalization of banking is closely related to widespread internet technology, as this technology helps banks go online and does more than just that. It can be quite difficult to prove this for institutions that are entrenched with a strong physical presence but have not yet built the necessary framework for a strong virtual presence as well. The scope of digital transformation in banks includes three main tasks: adopting digital technologies, processes redesign to streamline service costs dominate financial aspects with digital services, and restructuring of business entities (Widharto et al., 2020).

As these steps make clear, a healthy digital transformation process requires head-to-toe changes in the bank's structure and operations. However, the ultimate challenge is resolving these issues and restructuring while keeping the bank profitable, up-to-date, and aligned with customer needs. Financial and Fintech start-ups can build their structures to

be compatible with digital service requirements from the start. Therefore, Fintech on a micro scale can be considered a threat to multi-billion dollar banks, depending on their business model (Unal, 2021).

Moving technology developments may prove to be more of a challenge for larger banks, due to their lack of flexibility in changing their operational structures (Ndlovu et al., 2020). It can be concluded that small banks have a greater advantage in digital transformation than large-scale banks. Given that banking in Islam is much younger than conventional banking. This theory is supported by Islam in a more flexible financial operational structure that drives digitalization and Fintech adoption (Yunita, 2021).

The big question of this article analyzes technological trends related to the digital transformation of Islamic banks in Indonesia since 2022. One of them is the development of Fintech Securities Crowdfunding (SCF) and also Peer to Peer (P2P) Finance which has enormous potential that will continue develop in the future. This question examines Islamic banks' understanding of this technology, and whether they are taking appropriate steps to incorporate it into their infrastructure.

The discussion in this paper shows the level of awareness globally within the Islamic banking sector regarding the importance of digitization for the survival of the sector and how more digitized small-scale businesses can threaten banking operations. However, this research proves that very little has been done in adopting critical technology in banking operations. This central finding urges Islamic banks to raise awareness and accelerate the digital adoption process of Islamic banking. The views in this discussion incorporate a great deal of knowledge about the digital transformation of conventional or Islamic banking, and about how this transformation affects the banking business and operations (Tsindeliani et al., 2021).

## **LITERATURE REVIEW**

### **Fintech and Digital Transformation in Banking**

Financial technology (Fintech) refers to the application of digital technologies to improve the delivery and efficiency of financial services. In a broad sense, Fintech encompasses

innovations that transform traditional financial intermediation through digital platforms, data analytics, and automation (Ayu & Wati, 2022; Khan & Rabbani, 2020). Fintech has reshaped the structure of the financial industry by enabling faster transactions, lower operational costs, and improved customer experience.

Digital transformation in banking goes beyond the adoption of information technology and involves fundamental changes in organizational structures, business models, and value creation processes (Vial, 2019). King (2018) describes this transformation as the evolution toward “Bank 4.0,” where banking services are embedded seamlessly into customers’ daily activities. Prior studies indicate that banks that successfully implement digital transformation tend to achieve higher operational efficiency and stronger competitive positioning (Natakusumah, Maulina, & ..., 2023; Pitchay, Eliz, Ganesan, & ..., 2022).

However, traditional banks often face significant barriers to digital transformation, including rigid organizational structures, legacy systems, and regulatory constraints (Sibanda et al., 2020). In contrast, fintech startups are inherently designed to operate within digital ecosystems, allowing them to respond more flexibly to changing market demands.

### **Banking Digitalization Transformation in Modern Era**

In terms of digital transformation is the use of digital technology to facilitate the day-to-day performance of institutions. Digital transformation is widely known as the use of advanced technology to improve company performance (Wieters, n.d.). By adopting digital transformation to its full potential, it will generate the power to change all aspects of their operations (Bascur, 2020). Therefore, digital transformation is a process of an organization identifying a response to create value by reducing challenges from its technology (Vial, 2019).

The internet has fundamentally influenced society with the emergence of new technology (Spindler, 2020). Digital developments form systematic internal changes, competencies to provide interactive value to customers (Abuhasan & Moreb, 2021). Various kinds of literature question the existence of banks in a fully digitized future world.

So, the classic banking business will no longer be effective, what banks need is new innovation in digitalization so they can survive in competition (A, 2017).

Customers prefer the digital platform model, because the platform design is similar to social media and easy to use in banking which is the trigger for customer attraction (Chishti & Barberis, 2016). Fintech also has other similar disruptive impacts on the banking business. Likewise, the literature discusses, in their studies, the fact that among these technologies, blockchain-based solutions have an important role in achieving resilient systems. They focus on achieving the SDGs as a benchmark, and continue the paper by quantifying the likelihood of achieving the SDGs through blockchain-based methods. According to the author, this method is very important to achieve a banking system that is more environmentally friendly and inclusive (Aysan et al., 2021).

In their literature, Abuhasan and Moreb conducted similar research on banks in Indonesia, but this is not enough for a bank to be called a "Digital Bank". Traditional financial institutions are faced with strategic and operational obstacles in their digital transformation journey, indicating the absence of a comprehensive understanding of digitalization (Diener & Špaček, 2021). Furthermore, Abedefar explained that a financial ecosystem where fully Islamic banks and technological opportunities are used more efficiently will perform better out of date. This proves that a dual banking system with fully Islamic banking will perform better in systematic shocks (Abedifar et al., 2017). Other literature also explains that Islamic and conventional financial systems that are more technological will work better than ecosystems that are more outdated (Dosso & Aysan, 2022).

Tiutiunk, Unal et al, examine how banks' digital transformation improves their competitive position in developed countries, as well as the risks and benefits involved. The results show a direct relationship between banks' performance and their level of digitalization. This paper shows the important thing that digital transformation is viewed differently among Islamic banks, and that there may be differences in the comprehensive understanding of the factors that lead to the perfect implementation of digitalization (Tiutiunyk et al., 2021). Additionally, Aysan and Unal discussed the fact that in particular,

the global Islamic financial system is evolving into fintech and blockchain users for a smoother customer experience in a market (Unal, 2021).

In this modern era, the digitalization of sharia or conventional banking and the disruptive impact of structural improvements on the banking industry have become hot topics among experts in the world. However, the understanding of digital transformation and its impact on the level of adoption and type of technology adopted by Islamic banks is still limited (Iman, Wardhana, Rusgianto, & ..., 2022). Some discussions directly focus on the financial industry as a whole, or specific groups of countries, so there is no overview of Islamic banks globally in the literature. The aim of this paper focuses on the relationship between understanding of the digitalization process and the level of its use by Islamic banks in various countries in the world.

### **Fintech, Sustainability, and Sustainable Development Goals (SDGs)**

Fintech has increasingly been linked to sustainability and the achievement of the Sustainable Development Goals (SDGs), particularly through financial inclusion, MSME financing, and inclusive economic growth (Tsindeliani et al., 2021). Digital financial services can expand access to finance for underserved communities and support sustainable economic development.

Blockchain-based fintech solutions have been identified as potential tools for enhancing transparency, accountability, and efficiency in financial systems, thereby supporting sustainability objectives (Aysan et al., 2021). In the context of Islamic finance, fintech can facilitate Sharia-compliant financing instruments that promote ethical investment and social welfare.

Despite this potential, the literature indicates that the contribution of Islamic banking to sustainability through fintech remains underexplored. Most studies focus on technological adoption without systematically linking fintech implementation to sustainability outcomes (Dosso & Aysan, 2022). This gap highlights the need for empirical research that examines how fintech adoption in Islamic banking can support sustainable development.

## **RESEARCH METHODS**

This study employs a quantitative research approach to examine the adoption of financial technology and digital transformation strategies in Islamic banking. The analysis is based on secondary data obtained from the *Global Islamic Banks Survey (GIBS)* conducted by the General Council for Islamic Banks and Financial Institutions (CIBAFI) in June 2023. GIBS is an annual global survey designed to capture the perspectives of senior management and decision-makers in Islamic banks regarding industry developments, strategic priorities, and future directions. The 2023 survey covers 103 Islamic financial institutions across 30 countries, representing a wide geographical distribution. For analytical purposes, the respondent banks are grouped into seven regional categories: Gulf Cooperation Council (GCC), Middle East (excluding GCC), Southeast Asia, West, Central and South Asia, North Africa, Sub-Saharan Africa, and Europe and Türkiye.

The survey data include variables related to digital transformation awareness, fintech adoption, customer experience, and the use of specific digital technologies, such as mobile banking, big data, peer-to-peer (P2P) finance, and securities crowdfunding (SCF). These variables are used to assess the relationship between Islamic banks' understanding of digital transformation and the level of fintech implementation in their operational activities.

The data are analyzed using descriptive statistics to identify adoption trends across regions, followed by correlation analysis to examine the relationship between digital transformation awareness and fintech utilization. In addition, one-directional (unidirectional) analysis is applied to explore the direction of influence between digital strategy orientation and the level of technology adoption in Islamic banks.

This methodological approach enables a systematic evaluation of how Islamic banks respond to digital innovation and provides empirical insights into the extent to which fintech adoption supports competitiveness and sustainability in the Islamic banking sector, with particular emphasis on developments in Indonesia.

## **DISCUSSION**

The findings of this study indicate that Islamic banks globally demonstrate a strong awareness of the importance of digital transformation; however, this awareness has not been fully translated into comprehensive fintech adoption within core banking operations. To support this argument, Table 6 presents the level of adoption of selected digital technologies among Islamic banks based on the GIBS survey data.

**Table 6**  
**Level of Fintech Adoption in Islamic Banking**

<b>Digital Technology</b>	<b>Level of Adoption</b>	<b>Implementation Characteristics</b>
Mobile Banking	High	Widely implemented, mature infrastructure, customer-oriented
Big Data Analytics	Medium	Limited to internal analysis and risk assessment
Peer-to-Peer (P2P) Finance	Low	Mostly external platforms, limited bank integration
Securities Crowdfunding (SCF)	Low	Regulatory-driven, minimal direct bank involvement
Blockchain-based Applications	Very Low	Experimental stage, lack of readiness

*Source: Processed from GIBS (CIBAFI, 2023)*

As shown in Table 6, mobile banking dominates fintech adoption in Islamic banking. This finding explains why digital transformation efforts are largely concentrated on customer-facing services rather than deeper structural innovation. Mobile banking benefits from established infrastructure, lower regulatory complexity, and proven demand, making it the least risky digital investment for Islamic banks (Jamalurus, 2022; Katterbauer, Syed, Cleenewerck, & ..., 2022).

In contrast, P2P finance and SCF exhibit significantly lower levels of implementation. These technologies require substantial changes in governance, risk management, and regulatory compliance, which may discourage Islamic banks from adopting them internally. Instead, banks tend to position themselves as observers or indirect participants rather than active ecosystem players.

**Figure 1**  
**Research Framework of Digital Transformation and Fintech Adoption in Islamic Banking**

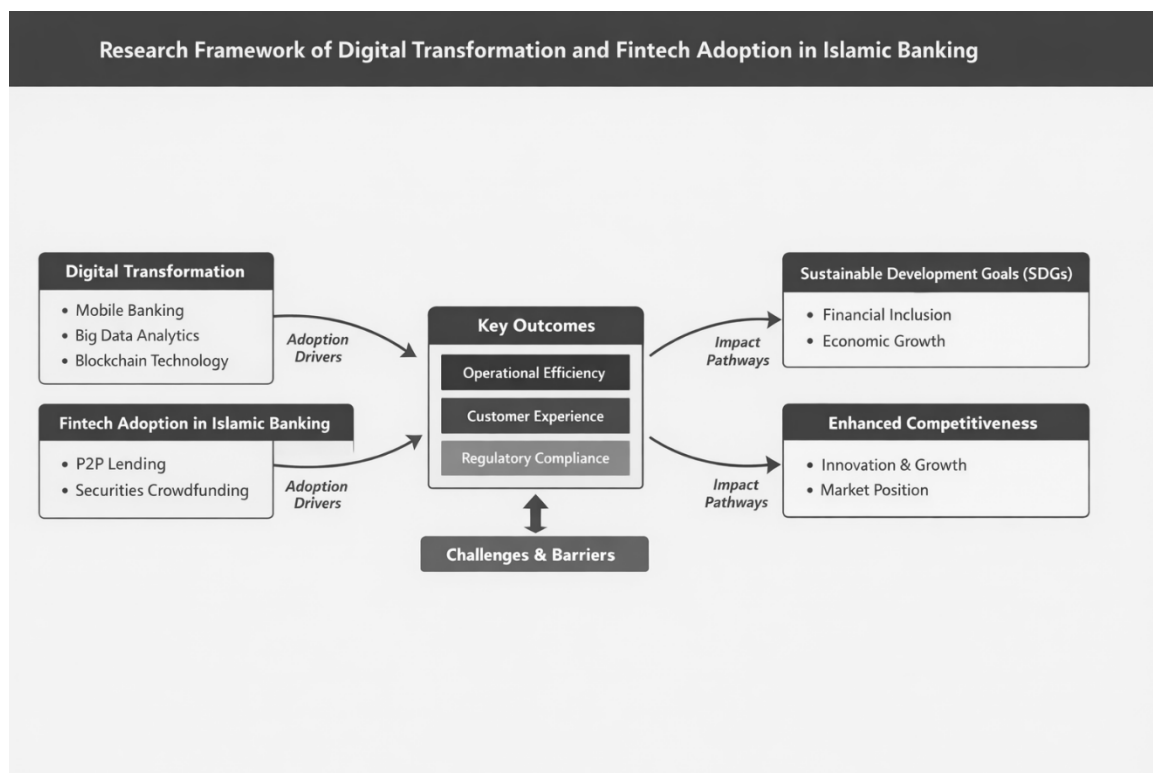


Figure 1 illustrates the research framework used in this study. The framework emphasizes the mediating role of fintech adoption between digital transformation awareness and bank competitiveness and sustainability (Meslier, Risfandy, & Tarazi, 2017; Silvino Violita & Handarbeni, 2019). Although awareness levels are high, the limited adoption of advanced

fintech solutions weakens the overall impact of digital transformation on sustainability outcomes.

**Table 7**  
**Regional Differences in Fintech Adoption Trends**

<b>Region</b>	<b>Dominant Technology</b>	<b>Digital Transformation Intensity</b>
GCC	Mobile Banking	High
Southeast Asia	Mobile Banking, SCF	Medium
Middle East (non-GCC)	Mobile Banking	Medium
South & Central Asia	Mobile Banking	Low–Medium
Africa	Basic Digital Tools	Low
Europe & Türkiye	Mobile & Big Data	Medium–High

*Source: GIBS Survey (CIBAFI, 2023)*

Table 7 shows that regional factors significantly influence fintech adoption patterns. Islamic banks in Southeast Asia, particularly Indonesia and Malaysia, show early engagement with SCF and P2P finance, driven by regulatory support and MSME financing needs. However, the scale of adoption remains limited, indicating a cautious innovation strategy.

### **Discussion Implications**

The inclusion of these tables and figures reinforces the argument that Islamic banks' digitalization strategies remain bank-centric rather than ecosystem-oriented. Fintech innovations such as P2P finance and SCF are still perceived as external alternatives instead

of strategic complements to Islamic banking operations. This limits Islamic banks' contribution to financial inclusion and sustainable development, particularly in MSME financing.

Overall, the empirical evidence suggests that digital transformation in Islamic banking should move beyond basic service digitalization. Strategic collaboration with sharia-compliant fintech firms, supported by adequate capital investment and regulatory clarity, can accelerate the adoption of advanced technologies and strengthen the sustainability and competitiveness of Islamic banks.

## **CONCLUSION**

This study investigates fintech adoption and digital transformation strategies in Islamic banking using data from the Global Islamic Banks Survey (GIBS) conducted by CIBAFI. The findings indicate that while Islamic banks demonstrate strong awareness of the importance of digital transformation, the actual adoption of advanced fintech solutions remains limited. Digitalization efforts are primarily concentrated on well-established technologies, particularly mobile banking, with relatively low implementation of emerging innovations such as Peer-to-Peer (P2P) finance, Securities Crowdfunding (SCF), and blockchain-based applications. The results highlight a gap between strategic understanding and practical implementation of digital transformation within Islamic banking. This gap constrains the sector's ability to enhance competitiveness, promote financial inclusion, and contribute effectively to sustainable development. Therefore, digital transformation in Islamic banking should extend beyond basic digital services toward ecosystem-based innovation and deeper fintech integration. Strategic collaboration with sharia-compliant fintech firms may provide an efficient pathway to accelerate adoption while minimizing risks. Future research should focus on developing systematic models for fintech integration and assessing their impact on sustainability and performance in Islamic banking.

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