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Financial Technology in Islamic Finance: Conceptual Foundations, Opportunities and Challenges

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Article History:	Abstract
Submitted: August 11st, 2025 **Revised:** November 21st, 2025 **Accepted:** December 16th, 2025 **Published:** December 28th, 2025 **By:** **International Journal of Islamic Economics (IJIE)**	**Introduction:** Almost every aspect of life can be addressed through technology, including the business and financial sectors. Financial technology (fintech) has emerged as a transformative innovation in Indonesia, presenting both opportunities and challenges. Sharia-based fintech, in particular, has attracted attention for its efforts to align financial innovation with Islamic principles. **Objective:** This article aims to outline the conceptions, opportunities, and challenges of fintech in the Indonesian context, with a particular focus on sharia fintech **Method:** A descriptive method is used. The descriptive approach is used to systematically describe facts, characteristics, and relationships within the fintech ecosystem without manipulating variables. Data are obtained from literature reviews, official regulations, and reports from relevant authorities, including Bank Indonesia, OJK, and DSN-MUI. **Result:** The Development of fintech in Indonesia presents a significant opportunity to encourage technology-based businesses, but also poses serious management challenges. Islamic fintech has received regulatory support from Bank Indonesia, DSN-MUI, and OJK to strengthen financial inclusion and smooth payment systems. However, obstacles such as DPS access, the length of the licensing process, and minimum capital requirements remain the primary barriers. Therefore, collaboration among all stakeholders is necessary to create a healthy and sustainable ecosystem for Islamic fintech. **Implication:** The Development of Sharia fintech in Indonesia has the potential to strengthen financial inclusion and technology-based financial services. However, overcoming regulatory and economic challenges is essential to ensure the sustainability and growth of the sharia fintech ecosystem. **Keywords:** Challenges; Financial Inclusion; Financial Technology; Indonesia; Sharia Fintech; Opportunities.

A. Introduction

"The future is now" and "the world is in our hands" reflect the rapid growth of technology capable of folding space and time. Technology is now increasingly familiar in human life, not only making daily activities easier but also preparing the foundation for the future. The digital economy is a necessity, an evolution that will inevitably continue. One area significantly affected is the financial and banking sectors, where digitalization facilitates transactions (Ansori, 2016).

In general, information technology provides significant benefits to humans. First, it replaces human roles through automation, machinery, and process control systems. Second, technology supports human roles by providing accurate information during specific processes. Third, technology reconstructs human roles through changes in work systems and interaction patterns.

Meanwhile, the term "finance" derives from the root word "money," which refers to the management, allocation, and use of resources. According to the German philosopher Georg Simmel, money is impersonal, in contrast to the barter system. (Ritzer, 2012). Money creates a calculative relationship that tends to ignore quality, so modern finance is not only a matter of exchange rates but also of rational systems. Financial technology (fintech) is the evolution of technology use in the financial sector. Its presence provides practical solutions that enhance the efficiency and effectiveness of monetary and banking services. Bank Indonesia defines fintech as a combination of financial services and technology that transforms conventional business models into more innovative ones.

Mackenzie described fintech as companies that integrate financial services with modern internet-based technologies and applications (Harahap et al., 2017). In the past, transactions had to be conducted face-to-face with cash; now they can be completed via digital devices within seconds. Fintech represents a traditional transformation of the financial sector toward digital finance that is more user-friendly, transparent, efficient, and automated (Harahap et al., 2017).

Fintech operations generate a variety of new products, services, and business models that affect monetary stability, the financial system, and the security and reliability of the payment system (Normand, 2018). Several studies show that fintech is practical for application in Islamic banking, particularly for reaching people in 3T areas (frontier, outermost, remote). In addition, fintech, which has grown rapidly in recent years, continues to create new opportunities, including greater efficiency, lower operational costs, and improved customer experience. With the ease of transactions and digital access, people are increasingly accustomed to using technology-based financial services (Harmoko & Ambarwati, 2022).

Bank Indonesia has described Indonesia as an ideal country for fintech development. This is supported by approximately 50 million MSMEs that have the potential to participate in the e-commerce ecosystem. Indonesia also recorded the highest growth rate in the fintech market in the Asia-Pacific region. However, it is essential to recognize that public access to the formal financial sector remains relatively low. According to the 2018 Fintech Report released by Daily Social, fintech lending accounts for the majority of the fintech industry in Indonesia. The report also shows an increase in public awareness of the importance of regulation. As many as 98.03% of survey respondents stated that fintech must be registered and supervised by Bank Indonesia and OJK. Other data shows that the fintech market in Indonesia is quite promising. Approximately 50% of respondents rated consumers' digital literacy as good, whereas the remainder indicated that education still requires improvement. In the e-money category, Go-Pay holds the first position at 79.38%, followed by OVO at 58.42%. In addition to e-money, other fast-growing categories include payday loans, peer-to-peer (P2P) lending, insurtech, and digital lending.

The growth of fintech presents significant opportunities for Islamic finance to digitize its operations. The Sharing Vision survey (2015) noted that people are increasingly switching to digital transactions: ATM transfers (42%), internet banking (28%), and direct transfers to accounts (25%). This fact confirms the excellent potential for Islamic fintech to grow. Furthermore, digital fintech innovation, with the slogan "connected, one-stop solution," is considered consistent with the concept of maqashid sharia. Islamic fintech not only addresses the halal needs of the community but also enhances Islamic financial literacy and inclusion. Regulatory support from Bank Indonesia, DSN-MUI, and OJK further strengthens this ecosystem, particularly in terms of legal frameworks, education, and broader access to finance.

B. Literature Review

The integration of financial technology (FinTech) into Islamic finance has become increasingly significant, influencing various dimensions, from product development to regulatory enhancements. This literature review examines the impact, challenges, and opportunities of FinTech in Islamic finance, drawing on diverse research sources. The financial technology landscape in Islamic finance is marked by its potential to enhance financial inclusion, particularly in underserved markets. Research indicates that Islamic finance mechanisms, grounded in Shari'ah principles, can leverage FinTech to improve access to financial services (Kanwal et al., 2023). Through digital platforms, financial technology enables the delivery of Shari'ah-compliant products, thereby attracting a broader consumer base, particularly populations traditionally excluded due to religious considerations.

For instance, the successful adaptation of Islamic FinTech in Indonesia highlights how such technologies can effectively reach the micro, small, and medium enterprises (MSMEs), enabling them to thrive even during economic downturns, such as the COVID-19 pandemic (Putri & Akbary, 2021). Incorporating advanced technologies such as blockchain and artificial intelligence into Islamic finance presents a dual opportunity: enhancing operational efficiency and ensuring compliance with Islamic ethical standards. Blockchain technology is a transformative tool for Islamic finance, offering transactional transparency and security. This alignment with the principles of trust and fairness, which are crucial in Islamic finance, facilitates the Development of innovative financial products, such as smart contracts, that can automate and enforce Shari'ah compliance (Chong, 2021).

The integration of Islamic finance and FinTech also fosters a more ethical financial ecosystem in which sustainable practices can be effectively integrated. The concept of Islamic green finance exemplifies this approach, employing technologies such as big data and machine learning to deliver targeted financing solutions aligned with environmental sustainability goals. By mapping the climate funding landscape, Islamic finance can contribute significantly to sustainable economic Development while adhering to ethical investments and promoting social welfare.

C. Research Methodology

This study employs a descriptive research method to analyze the Development, opportunities, and challenges of financial technology in the Indonesian context, particularly within the framework of Islamic finance. The descriptive approach is used to systematically describe facts, characteristics, and relationships within the fintech ecosystem without manipulating variables. Data are obtained from literature reviews, official regulations, and reports from relevant authorities, including Bank Indonesia, OJK, and DSN-MUI. This method enables the researcher to provide a comprehensive overview of how fintech, particularly sharia-based fintech, is conceptualized, supported, and regulated, and to identify the barriers faced by new entrants to the industry.

D. Results and Discussion Results

1. Financial Technology: A Basic Conception

Financial technology (fintech) represents a transformative shift within the financial services landscape, characterized by the integration of advanced technologies with traditional financial practices. It encompasses a broad spectrum of innovations, including blockchain, artificial intelligence (AI), and big data analytics, that significantly enhance service delivery, operational efficiency, and consumer accessibility (Abuzov, 2023). Fintech is frequently defined as an intersection where technology begins to solve traditional financial problems, leading to more scalable, efficient, and reliable services (Sangwan et al., 2019).

The significance of fintech extends beyond mere operational enhancements; it fosters financial inclusion by providing underserved populations with access to essential financial services. As demonstrated in various studies, fintech platforms, particularly peer-to-peer lending, play a crucial role in democratizing finance by reducing barriers to entry for users traditionally marginalized by conventional banking systems (Rybakovas & Zigiene, 2022). This shift not only promotes consumer welfare but also drives innovation by encouraging competition within the financial sector, ultimately leading to lower costs and improved services (Liu & Zhang, 2023).

Moreover, fintech's impact on economic development cannot be overstated. By facilitating faster transactions and improving customer experiences, fintech can contribute to overall economic growth (Bara & Mudzingiri, 2016). This innovation allows businesses, particularly startups, to access financial resources more readily and efficiently, enhancing their potential for growth and innovation. Research indicates that firms that leverage fintech effectively are better able to navigate financial constraints and capitalize on market opportunities (Liu & Zhang, 2023).

Additionally, regulations surrounding fintech are evolving to keep pace with these technological advancements. Regulatory bodies are increasingly aware of the need to balance innovation with consumer protection and financial stability. This calls for a nuanced understanding of fintech's implications for regulatory frameworks, as traditional regulatory models may no longer be sufficient to address the rapid changes it brings.

2. Classification and Types of Financial Technology

Financial technology (fintech) is a rapidly evolving sector that enhances financial services through technological innovation. This domain encompasses various classifications and types that address different aspects of financial and economic activities. In Indonesia, for example, fintech encompasses a range of services, including payment processing, investment platforms, financial planning, lending, and crowdfunding (Atichasari et al., 2023). Each type of fintech plays a distinct role within the broader financial system, thus promoting increased accessibility and efficiency in financial services.

One prominent category of fintech is digital payment solutions, which facilitate seamless transactions, making it easier for consumers to purchase goods and services online or via mobile applications. These solutions have disrupted traditional banking systems and led to greater financial inclusion, particularly among Millennials and Generation Z, who are often characterized by their readiness to adopt new technologies (Hamzah & Sukma, 2021). Furthermore, investment-focused fintech platforms have gained traction, enabling users to manage their investments more efficiently without extensive financial literacy or prior experience. This innovation appeals particularly to individuals seeking to diversify their investment options with minimal overhead (Hamzah & Sukma, 2021).

Crowdfunding is another innovative fintech model that enables individuals or organizations to raise funds through digital networks, thereby democratizing access to capital and empowering small and medium-sized enterprises (SMEs). This type of fintech not only serves as a financial intermediary but also fosters social capital development, thereby addressing community needs in ways that traditional financing methods may not. In addition, Islamic fintech, which aligns with Sharia principles, has emerged strongly in Indonesia, contributing to the financial inclusion of underserved groups, including micro, small, and medium-sized enterprises (MSMEs).

Moreover, regulatory frameworks are adapting to address the challenges and risks posed by fintech innovations. They aim to ensure consumer protection and safeguard financial stability while encouraging innovation within the financial market (Yao & Song, 2023). However, these technologies also raise concerns about security, data reliability, and the increasing competition they pose to traditional banking systems (Kasri & Yuniar, 2021). Therefore, a balanced approach towards regulation and innovation is required to harness the full potential of fintech while minimizing risks.

3. Sharia Fintech Opportunities in Indonesia

The development of Sharia fintech in Indonesia offers a significant opportunity to enhance financial inclusion, particularly for micro, small, and medium enterprises (MSMEs), which are crucial to the country's economy (Triwibowo & Adam, 2023). With at least 87% of Indonesia's population identifying as Muslim, there is a strong demand for Sharia-compliant financial products and services. This growing demand positions Islamic fintech as a pivotal force in transforming Indonesia's economic landscape, promoting ethical and Islamically compliant financial practices that resonate with a large segment of the population (Yuspin & Fauzie, 2023).

The Islamic fintech sector has been identified as a substantial contributor to MSMEs, which account for approximately 54% of the country's GDP. Such businesses face numerous challenges, including limited access to capital and inadequate financial infrastructure. Islamic fintech can address these barriers by providing tailored financial services that align with Sharia principles. For instance, platforms that use big data analytics can enhance decision-making and expand the reach of Islamic finance to underserved markets (Syarifuddin et al., 2021). The introduction of innovative financial products, particularly those that emphasize collaborative financing models, can further enable MSMEs to thrive in Indonesia's evolving financial ecosystem.

Regulatory support plays a crucial role in the advancement of Islamic fintech. The National Sharia Council (DSN-MUI) has issued a fatwa governing Islamic fintech services, ensuring that products and services comply with Sharia law. This regulatory framework not only fosters consumer trust but also encourages service providers to innovate and compete in the marketplace. As fintech continues to evolve, government policies must adapt to support growth and ensure that Islamic fintech platforms maintain compliance with Sharia principles (Rusydiana, 2019).

Moreover, the growth potential is underscored by empirical evidence suggesting that Islamic finance instruments, such as Sukuk and Islamic mutual funds, significantly influence Indonesia's economic development (Sakinah et al., 2022). The integration of Islamic social finance initiatives, such as waqf and zakat, can also play a key role in empowering communities and reducing poverty, thus aligning with broader socioeconomic goals (Safarina Dewi & Hermawan Adinugraha, 2023). The synergy between fintech innovation and Islamic finance principles can foster a more inclusive economy, creating sustainable growth pathways for those often excluded from traditional financial systems (Syarifuddin et al., 2021).

Challenges remain, particularly in financial literacy and awareness of Sharia-compliant financial products. As Islamic fintech expands, stakeholders must invest in educational initiatives to improve understanding and encourage adoption among target demographics. Additionally, continuous development of robust technology infrastructure is essential to enhance accessibility, increase transaction efficiency, and ensure data security across platforms.

4. Challenges and Obstacles to Sharia Fintech in Indonesia

In Indonesia, the development of Sharia fintech faces numerous challenges that impede its growth and effectiveness. One of the primary challenges is the lack of comprehensive regulations governing Sharia fintech operations. Many players in this sector operate without explicit rules to ensure governance and compliance with Sharia principles, which can lead to noncompliance (Muryanto et al., 2022). Furthermore, consumer skepticism regarding the adherence of fintech products to Sharia principles can adversely affect adoption rates, indicating a psychological barrier that needs to be addressed.

Operational standards are critical for the effectiveness of Sharia fintech. Issues such as inadequate governance structures, including the role of the Sharia Supervisory Board, remain pertinent (Muryanto et al., 2022). The shortcomings of these frameworks not only affect regulatory compliance but also raise concerns about the security and integrity of transactions conducted on these platforms (Afif & Samsuri, 2022). Additionally, a limited understanding of Sharia principles among consumers poses challenges for fintech providers in building trust and driving adoption .

Operational challenges are compounded by increasing competition from conventional fintech companies. Current data indicate that the number of traditional fintech companies exceeds that of Sharia-compliant fintech companies, highlighting a significant market imbalance (Afif & Samsuri, 2022). This competition, coupled with the greater accessibility and sometimes lower costs of conventional platforms, makes it difficult for Sharia fintech services to gain traction in the market. Despite a growing awareness of Islamic finance principles, many consumers still prefer traditional options due to familiarity and perceived reliability (Syarifuddin et al., 2021).

Moreover, the infrastructure related to digital financial services in Indonesia poses significant challenges. Although digital penetration and usage have increased, the quality of the infrastructure, particularly in lower-income areas, remains inadequate (Isa & Suryomurti, 2023). Consequently, the outreach capability of Sharia fintech services is limited, restricting access for many potential users, especially in rural areas where financial literacy is low (Muryanto et al., 2022).

The ecological environment of Sharia fintech in Indonesia requires significant improvement to foster growth. While there are opportunities for strategic partnerships between fintech providers and traditional banks, inconsistencies remain in effectively integrating these new technologies into the existing financial system (Safarina Dewi & Hermawan Adinugraha, 2023). Additionally, the need for comprehensive education on both fintech and Sharia principles is critical, especially among youth and small- and medium-sized enterprises (SMEs) (Syarifuddin et al., 2021).

E. Conclusion

The development of fintech in Indonesia presents significant opportunities for advancing technology-based businesses, yet it also poses serious challenges for its management. Islamic fintech receives regulatory support from Bank Indonesia, DSN-MUI, and OJK to strengthen financial inclusion and ensure the smooth functioning of payment systems. However, barriers such as access to Sharia Supervisory Boards, lengthy licensing processes, and high minimum capital requirements remain key obstacles. Therefore, collaboration among all stakeholders is essential to build a healthy and sustainable ecosystem for Islamic fintech.

F. Bibliography

Abuzov, A. (2023). The role of technological innovations in institutional regulation of the financial capital market. *E3S Web of Conferences*, *376*, 05047. https://doi.org/10.1051/e3sconf/202337605047

Afif, M., & Samsuri, A. (2022). Integration of Fintech and Islamic Banking in Indonesia: Opportunities and Challenges. *Cakrawala: Jurnal Studi Islam*, *17*(1), 27–38. https://doi.org/10.31603/cakrawala.7051

Ansori, A. (2016). Digitalisasi Ekonomi Islam. *Islamiconomic: Jurnal Ekonomi Keuangan Dan Bisnis Islam*, *7*(1), 1–18. https://doi.org/10.18231/ijie.2018.4.1.23

Atichasari, A. S., Kristanti, K., Hayriah, N., & Wulandari, S. S. (2023). Analysis of Quality and Implementation of Sharia Financial Services Based on Financial Technology in Indonesia. *International Journal of Current Science Research and Review*, *06*(07). https://doi.org/10.47191/ijcsrr/V6-i7-110

Bara, A., & Mudzingiri, C. (2016). Financial innovation and economic growth: evidence from Zimbabwe. *Investment Management and Financial Innovations*, *13*(2), 65–75. https://doi.org/10.21511/imfi.13(2).2016.07

Chong, F. H. L. (2021). Enhancing trust through digital Islamic finance and blockchain technology. *Qualitative Research in Financial Markets*, *13*(3), 328–341. https://doi.org/10.1108/QRFM-05-2020-0076

Hamzah, A., & Sukma, N. (2021). Factors That Influence The Interest In The Utilization Of Sharia Financial Technology On Millennials And Generation Z. *Tasharruf:*

Journal Economics and Business of Islam, 6(2), 119. https://doi.org/10.30984/tjebi.v6i2.1614

Harahap, B. A., Idham, P. B., Kusuma, A. C. M., & Rakhman, R. N. (2017). Perkembangan Financial Technology terkait Central Bank Digital Currency (CBDC). Bank Indonesia Report. *Jurnal Ekonomi Dan Perbankan Syariah*, *9*(204), 2010–2021.

Harmoko, A., & Ambarwati, D. (2022). Digital Islamic Business Ethics: Video Unboxing as a Khiyar mechanism in Online Buying and Selling Transactions. *International Journal of Islamic Economics*, *4*(02), 137. https://doi.org/10.32332/ijie.v4i02.5788

Isa, M., & Suryomurti, W. (2023). *Sentiment Analysis on the Perception of Sharia Fintech in Indonesia* (pp. 146–169). https://doi.org/10.2991/978-94-6463-176-0_11

Kanwal, A., Tayyab, M., & Idrees, S. (2023). Exploring the Nexus of Financial Technologies, Financial Inclusion, and Blockchain in Islamic Finance within Digital Transformation. *Pakistan Journal of Humanities and Social Sciences*, *11*(4). https://doi.org/10.52131/pjhss.2023.1104.0675

Kasri, R. A., & Yuniar, A. M. (2021). Determinants of digital zakat payments: lessons from Indonesian experience. *Journal of Islamic Accounting and Business Research*, *12*(3), 362–379. https://doi.org/10.1108/JIABR-08-2020-0258

Liu, Y., & Zhang, C. (2023). Does Technology and Finance Enhance the Innovation Capacity of High-tech Industries? *Journal of Innovation and Development*, *3*(2), 105–111. https://doi.org/10.54097/jid.v3i2.9395

Muryanto, Y. T., Kharisma, D. B., & Ciptorukmi Nugraheni, A. S. (2022). Prospects and challenges of Islamic fintech in Indonesia: a legal viewpoint. *International Journal of Law and Management*, *64*(2), 239–252. https://doi.org/10.1108/IJLMA-07-2021-0162

Putri, V. A., & Akbary, N. M. M. (2021). Islamic Fintech and Indonesian MSMEs during the Pandemic. *Sebelas Maret Business Review*, *6*(2), 111. https://doi.org/10.20961/smbr.v6i2.56063

Ritzer, G. (2012). Sociological Theory: From Classical Sociology to Recent Postmodern Developments. In *Kreasi Wacana*. Pustaka Siswa. http://philosociology.com/UPLOADS/_PHILOSOCIOLOGY.ir_George Ritzer-Sociological Theory (8th Edition)-McGraw-Hill (2010).pdf

Rusydiana, A. (2019). Bagaimana Mengembangkan Industri Fintech Syariah di Indonesia? Pendekatan Interpretive Structural Model (ISM). *Al-Muzara'ah*, *6*(2), 117–128. https://doi.org/10.29244/jam.6.2.117-128

Rybakovas, E., & Zigiene, G. (2022). Financial Innovation for Financial Inclusion: Mapping Potential Access to Finance. *European Conference on Innovation and Entrepreneurship*, *17*(1), 451–457. https://doi.org/10.34190/ecie.17.1.645

Safarina Dewi, I., & Hermawan Adinugraha, H. (2023). The Role Of Sharia Fintech In Improving Halal Financial Inclusion In Msmes In Indonesia. *LIKUID: Jurnal Ekonomi Industri Halal*, *3*(1), 18–29. https://doi.org/10.15575/likuid.v3i1.18693

Sakinah, G., Kasri, R. A., & Nurkholis, N. (2022). Islamic Finance and Indonesia's Economy: An Empirical Analysis. *Jurnal Ekonomi & Keuangan Islam*, 47–59.

https://doi.org/10.20885/jeki.vol8.iss1.art4

Sangwan, V., Harshita, H., Prakash, P., & Singh, S. (2019). Financial technology: a review of extant literature. *Studies in Economics and Finance*, *37*(1), 71–88. https://doi.org/10.1108/SEF-07-2019-0270

Syarifuddin, S., Muin, R., & Akramunnas, A. (2021). The Potential of Sharia Fintech in Increasing Micro Small and Medium Enterprises (MSMEs) in The Digital Era in Indonesia. *Jurnal Hukum Ekonomi Syariah*, *4*(1), 23. https://doi.org/10.30595/jhes.v4i1.9768

Triwibowo, A., & Adam, M. A. (2023). Etika Bisnis Islam Dalam Praktek Bisnis Di Era Digital Ekonomi. *Margin: Jurnal Bisnis Islam Dan Perbankan Syariah*, 24–36. https://doi.org/10.58561/MARGIN.V2I1.65

Yao, T., & Song, L. (2023). Fintech and the economic capital of Chinese commercial bank's risk: Based on theory and evidence. *International Journal of Finance & Economics*, *28*(2), 2109–2123. https://doi.org/10.1002/ijfe.2528

Yuspin, W., & Fauzie, A. (2023). Good Corporate Governance In Sharia Fintech: Challenges and Opportunities In The Digital Era. *Quality - Access to Success*, *24*(196), 221–229. https://doi.org/10.47750/QAS/24.196.28