

## FINTECH DRIVEN FINANCIAL INCLUSION AND DIGITALIZATION: INSIGHTS FROM INDONESIA'S EMERGING MARKET (2020–2025)

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### Abstract

*This study conducts a systematic analysis of the role of financial technology (fintech) in promoting financial inclusion and the digitalization of financial services during the period 2020–2025. The method used is a comprehensive literature review, examining various academic publications, industry reports, and policy documents related to fintech. The findings indicate that fintech has significantly expanded access to financial services for unbanked groups and MSMEs through digital product innovations, while also enhancing the efficiency and transparency of financial services. The novelty of this research lies in presenting an up-to-date literature review that integrates aspects of financial inclusion with service digitalization, as well as identifying gaps in the literature related to inclusive approaches and adaptive regulations, which have been rarely explored before. The study provides a major contribution in the form of a holistic analytical framework that combines technological innovation, socioeconomic impacts, and implementation challenges in emerging markets, particularly Indonesia. However, challenges such as low financial and digital literacy, infrastructure inequality, and the need for adaptive regulations remain key obstacles. The study recommends strengthening literacy and building an inclusive digital ecosystem as strategic steps to optimize the contribution of fintech to sustainable financial development. These findings offer scientific contributions to the development of digital financial policies and practices in Indonesia and other developing countries.*

**Keywords:** financial technology, financial inclusion, digitalization of financial services

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## INTRODUCTION

The development of financial technology (fintech) has revolutionized the global financial industry landscape and become a key catalyst in driving the digital transformation of the financial sector, including in Indonesia. With a population of more than 270 million people and an ever-increasing internet penetration rate, Indonesia represents a highly promising market for fintech growth, particularly in advancing financial inclusion and the digitalization of financial services. Since the early 2010s, government initiatives such as Indonesia Digital Economy 2020 and the “1000 Digital Start-ups Movement” have accelerated the development of the national digital financial ecosystem. Fintech offers faster, cheaper, and more accessible financial solutions than conventional financial services, enabling broader access for unbanked populations and micro, small, and medium enterprises (MSMEs) that previously faced barriers to formal financial services. Fintech products such as e-wallets, digital payments, peer-to-peer (P2P) lending, and Islamic digital financial services have played a significant role in expanding financial access, improving transaction efficiency, and fostering inclusive economic growth across various regions.

Several recent studies support this perspective. For instance, Hapsoro *et al.* (2021) found that fintech adoption in Indonesia has increased significantly alongside higher digital literacy and internet accessibility. Setiawan and Rahman (2023) revealed that fintech directly contributes to enhancing MSME financial inclusion through digital-based financing, while Putra *et al.* (2024) discovered that digital financial services improve transaction efficiency by up to 35% compared to traditional banking services. Furthermore, a report by Bank Indonesia (2024) recorded that the value of digital economic transactions surpassed USD 280 billion, with an annual growth rate of 19%, reflecting the rapid acceleration of digital

financial adoption nationwide. However, substantial challenges remain, including low levels of financial and digital literacy, regional disparities in digital infrastructure, cybersecurity risks, and the need for adaptive regulation capable of balancing innovation with consumer protection (OJK, 2023).

Given these circumstances, a comprehensive study on the role of fintech in promoting financial inclusion and the digitalization of financial services is increasingly relevant and necessary. Although previous studies have examined these two aspects separately, few have integrated them into a unified analytical framework particularly within the context of emerging markets such as Indonesia. Therefore, this study aims to conduct a systematic analysis of literature published between 2020 and 2025 to assess fintech's contribution to financial inclusion and financial service digitalization, as well as to identify research gaps, challenges, and strategic opportunities for fostering inclusive and sustainable financial development. The findings are expected to provide both academic and practical contributions to the advancement of digital finance policies and practices in Indonesia and other developing countries.

## **LITERATURE REVIEW**

The Role of Fintech in Financial Inclusion and the Digitalization of Financial Services Based on Literature Studies (2020–2025):

- **The Development of Fintech and the Concept of Financial Inclusion**

Fintech represents technological innovation in financial services that leverages digital technology to provide faster, cheaper, and more accessible financial solutions (Gomber et al., 2018). Over the past decade, fintech has grown rapidly, particularly in developing countries such as Indonesia, which has great potential to enhance financial inclusion — defined as access to and usage of formal financial services by all segments of society (Demirguc-Kunt et al., 2018). A study by Arner et al. (2020) emphasizes that fintech serves as a bridge to overcome the limitations of traditional financial access, especially for unbanked populations and micro, small, and medium enterprises (MSMEs).

- **The Role of Fintech in Promoting Financial Inclusion**

Modern literature demonstrates that fintech promotes financial inclusion through services such as mobile banking, peer-to-peer (P2P) lending, digital wallets, and electronic payments (Philippon, 2016; Frost et al., 2019). For instance, P2P lending provides MSMEs with access to capital that was previously difficult to obtain through conventional banking channels. A study in Indonesia by Kusuma and Damayanti (2022) recorded a 15% annual increase in digital loan adoption, significantly helping MSMEs survive during the pandemic. Fintech also reduces transaction costs and geographic barriers, leading to more equitable financial services (Lee & Shin, 2018).

- **Digitalization of Financial Services and Transformation of the Financial System**

The digitalization of financial services involves integrating digital technology into financial activities to enhance operational efficiency, transparency, and security (Zavolokina et al., 2016). A digital financial system enables real-time data processing and personalized financial products powered by big data and artificial intelligence (Bohn et al., 2020). In Indonesia, this digitalization is reflected in the development of Islamic-based fintech and digital wallets that reach communities previously underserved by formal financial institutions (Sari et al., 2023). Digitalization also accelerates the transformation of conventional banking into hybrid-digital models, making financial services even more accessible.

- Challenges in the Implementation of Fintech and Digitalization

Despite its vast potential, literature also highlights several challenges in the development of fintech, particularly in developing countries. First, low levels of financial and digital literacy hinder widespread fintech adoption (Lusardi & Mitchell, 2014). Second, digital infrastructure remains uneven, particularly in rural and island regions (Susanti, 2021). Third, cybersecurity and personal data protection have become critical issues requiring strict regulation (Philippon, 2019). Fourth, adaptive and inclusive fintech regulation is still evolving and needs continuous evaluation (Zetzsche et al., 2020).

- Regulations and Supporting Policies

Various studies underscore the role of governments and financial authorities in creating a healthy fintech ecosystem. The Financial Services Authority (OJK) and Bank Indonesia have issued regulations to ensure user safety and maintain financial system stability (OJK, 2023). A risk-based regulatory approach is recommended to balance innovation with security and transparency (Arner et al., 2020). The government also supports the enhancement of financial and digital literacy through education programs and MSME empowerment initiatives (Sari et al., 2023).

- Technological Innovation in Islamic-Based Fintech

Specific studies on Islamic fintech indicate significant progress as a response to the need for an inclusive and modern Islamic financial ecosystem (Dusuki & Abdullah, 2018). Digital Islamic financial literacy remains relatively low; thus, research by Ilmi et al. (2024) recommends technology-based education approaches to increase the penetration of Islamic fintech. Integrating Sharia principles into fintech products enriches service diversity and broadens financial inclusion coverage.

- Gaps and Recommendations in Recent Literature

Although numerous studies discuss fintech and financial inclusion, critical reviews reveal that most of the literature still treats financial inclusion and digitalization as separate topics, while integration between the two within the fintech context remains limited. Research combining technological innovation, socioeconomic impact, implementation challenges, and policy dimensions holistically is needed to strengthen the development of an inclusive and sustainable fintech ecosystem (Zetzsche et al., 2020; Sari et al., 2023).

## METHOD

This study employs a Systematic Literature Review (SLR) approach, a method conducted by systematically and structurally identifying, evaluating, and synthesizing relevant research findings. This approach was chosen because it allows researchers to obtain a comprehensive and up-to-date overview of the role of fintech in financial inclusion and the digitalization of financial services during the 2020–2025 period. The steps undertaken in this study include:

- Identification of Research Objectives and Questions

The study focuses on examining the impact of fintech on digital financial inclusion as well as its challenges and opportunities. The main research questions are: How does fintech contribute to expanding financial access and the digitalization of financial services? What factors influence its success? What regulatory and literacy barriers are encountered?

- Literature Selection Criteria

The inclusion criteria applied are as follows:

1. National and international scholarly journal articles published between 2020 and 2025

2. Focus on fintech, financial inclusion, digitalization of financial services, and regulatory aspects in Indonesia and other developing countries
3. Literature consisting of journals, books, official reports, policy documents, and online articles from credible sources
4. Articles written in Indonesian and English

- **Collection and Selection of Literature**

Literature searches were conducted through leading academic databases such as Google Scholar, DOAJ, and university library databases, using keywords such as “fintech,” “financial inclusion,” “digital financial services,” and “Indonesia.” The selection process was carried out manually by reviewing abstracts and full texts to ensure that only relevant and high-quality studies were included.

- **Data Analysis and Synthesis**

The data were analyzed qualitatively using the content analysis method. The variables examined include the role of fintech in expanding financial access, improving service efficiency, socio-economic implications, regulatory challenges, and digital literacy. The findings were thematically synthesized to reveal patterns, trends, opportunities, and barriers in the development of fintech within the context of financial inclusion and digitalization of financial services.

- **Validation and Triangulation**

To enhance validity, the findings were compared with official reports and related secondary data from institutions such as the Financial Services Authority (OJK) and Bank Indonesia (BI), as well as industry reports such as the “Indonesia Fintech 2025 Report.”

The SLR method provides a strong foundation for generating comprehensive and objective analyses, making it a reliable reference for policy development and future research in the field of fintech and digital financial inclusion. The methodological references follow standard systematic literature review practices in social and digital economic research.

## **RESULTS AND DISCUSSION**

### **The Role of Fintech in Expanding Financial Access**

The analysis indicates that the development of financial technology (fintech) in Indonesia has significantly expanded access to formal financial services. According to the Indonesia Fintech 2025 Report (OJK, 2023), the penetration of digital financial service users reached approximately 60% of the national population by 2025, compared to 42% in 2020. This demonstrates that fintech serves as a major catalyst in promoting national financial inclusion. Fintech products such as digital wallets, peer-to-peer (P2P) lending, and digital payment platforms have accelerated the outreach of financial services to remote communities and micro, small, and medium enterprises (MSMEs). Prior to fintech, MSMEs often faced obstacles in accessing bank loans due to collateral requirements and complex administrative procedures. However, through data-driven credit scoring algorithms and alternative financing models, P2P lending platforms have effectively bridged this financial gap.

Data from OJK (2024) further reveal that the number of MSMEs using fintech platforms increased by 30% compared to 2020, indicating a continuous upward trend in adoption, especially amid rising needs for capital access and cashless transactions. The increasing use of digital payment systems has also improved transaction efficiency, reduced dependency on cash, and stimulated local economic circulation.

## **Technological Innovation and Digitalization of Financial Services**

The digital transformation of the financial sector is characterized by the growing application of artificial intelligence (AI), big data analytics, and blockchain technology among fintech firms and traditional financial institutions. These innovations accelerate transaction processes, enhance risk management, and improve operational efficiency. For example, machine learning-based credit scoring enables real-time behavioral analysis, reducing default risks and improving credit distribution accuracy. An industry study by McKinsey & Company (2023) shows that digitalization using AI and big data can reduce operational costs by up to 40% and increase service speed by 50%. Meanwhile, Islamic fintechs in Indonesia are adopting technology to ensure Sharia compliance while maintaining transparency, security, and efficiency in service delivery.

In addition, blockchain technology has been increasingly utilized to enhance transaction security and data integrity, minimizing fraud risks and ensuring traceability. These innovations have accelerated the digitalization of the financial ecosystem, not only among large financial institutions but also across micro-segments through mobile-based applications and inclusive financial solutions.

## **Socioeconomic Impacts of Fintech**

Fintech has demonstrated substantial socioeconomic benefits, particularly in empowering micro-economies and reducing financial inequality. Studies by Frost et al. (2022) reveal that digital lending access through fintech platforms has increased business income by up to 25%, especially among MSMEs and informal sector entrepreneurs. Moreover, fintech contributes to job creation, business productivity, and regional economic stability. Supported by the Financial Services Authority (OJK) and Bank Indonesia (BI), fintech companies have initiated financial literacy programs and digital education campaigns that improved digital financial literacy rates from 35% in 2020 to 54% in 2025 (OJK, 2025). Thus, fintech not only represents technological innovation but also acts as a social instrument for promoting inclusive and sustainable economic growth in Indonesia.

## **Challenges and Barriers to Fintech Implementation**

Despite its rapid growth, several critical challenges remain. The first is the low level of financial and digital literacy, which limits fintech adoption, particularly in rural and traditional market areas (OJK, 2023). The second challenge concerns unequal digital infrastructure, including limited internet coverage and electricity access in remote regions. Third, cybersecurity risks and data privacy concerns are major issues. According to the Indonesia Cyber Security Report (2024), cybercrime cases in the financial sector increased by 35% between 2020 and 2025, particularly affecting digital payment and online lending services. Fourth, regulatory adaptation often lags behind rapid technological innovation, indicating the need for continuous evaluation of fintech governance frameworks to ensure both innovation and consumer protection.

## **Regulatory and Policy Responses**

The Indonesian government, through Otoritas Jasa Keuangan (OJK) and Bank Indonesia (BI), has established several regulatory frameworks to ensure a healthy and sustainable fintech ecosystem. A key regulation is OJK Regulation No. 77/POJK.01/2016 concerning Information Technology-Based Lending Services, which provides the legal foundation for P2P lending operations in Indonesia. Other policy

initiatives, including BI-Fast, QRIS (Quick Response Code Indonesian Standard), and the National Payment Gateway (NPG), have strengthened national digital infrastructure. Government programs such as the National Financial Literacy Movement (GNLIK) have also played a crucial role in enhancing public trust and understanding of digital finance. Nevertheless, there remains a need for a more dynamic, risk-based regulatory framework that balances innovation with consumer protection and financial system stability. Effective collaboration among regulators, industry players, and academic institutions is essential to ensure that fintech development in Indonesia remains inclusive, secure, and sustainable.

## **CONCLUSION**

This study confirms that fintech plays a strategic role in promoting financial inclusion and accelerating the digitalization of financial services in Indonesia during the period 2020–2025. Fintech has successfully expanded financial access for unbanked populations and MSMEs through innovative digital products such as e-wallets, peer-to-peer (P2P) lending, and digital payment platforms, which have increasingly been accepted by the broader society. Digitalization supported by technologies such as AI, big data, and blockchain enhances efficiency, transparency, and security of financial services while simultaneously strengthening the competitiveness of both traditional financial institutions and fintech companies.

The literature analysis highlights the positive economic impacts of fintech, including increased MSME revenues and competitiveness, reduced financial access gaps, and improved community welfare through service automation and easier access to financial products. However, the study also identifies significant challenges, including low financial and digital literacy that hinder technology adoption, uneven digital infrastructure—particularly in remote areas—and cybersecurity and data protection risks that require stronger, adaptive, and inclusive regulatory frameworks. Regulations implemented by the Financial Services Authority (OJK) and Bank Indonesia provide a strong foundation for fintech supervision and development. Nonetheless, ongoing updates are necessary to balance innovation promotion, consumer protection, and financial system stability. Strengthening collaboration between the fintech industry, regulators, and the government to improve literacy, expand infrastructure, and refine regulatory frameworks is essential to ensure the sustainability of digital financial transformation.

The novelty of this study lies in its holistic integration of both financial inclusion and digitalization aspects of fintech in a developing country context, particularly Indonesia—a perspective that has rarely been addressed comprehensively. The main contribution is a conceptual framework combining technological innovation, socio-economic aspects, and regulatory challenges, which can serve as a critical reference for developing inclusive and sustainable fintech policies. The study also opens opportunities for further research on the quantitative impact of fintech on financial stability and consumer behavior.

Overall, fintech is a highly potential instrument for transforming the financial sector by enhancing equitable access and quality of financial services, supporting inclusive economic growth, and accelerating the digitalization of the national financial sector toward a more advanced and sustainable digital economy in Indonesia. These conclusions are intended to provide guidance for academics, policymakers, and fintech stakeholders in fostering a financial digital ecosystem that is innovative, secure, inclusive, and sustainable. The references supporting these conclusions are based on a comprehensive analysis of literature, industry reports, and official data up to 2025, providing an up-to-date overview of fintech development and financial inclusion in Indonesia.

## REFERENCES

- Arner, D. W., Buckley, R. P., Zetsche, D. A., & Veidt, R. (2020). Fintech and financial inclusion: The global landscape and regulation. *Georgetown Journal of International Law*, 51(4), 1113–1176.
- Bank Indonesia. (2023). National digital payment infrastructure and fintech integration: BI-Fast, QRIS, and National Payment Gateway. Jakarta: Bank Indonesia.
- Bank Indonesia. (2024). Laporan Ekonomi dan Keuangan Digital Indonesia 2024. Retrieved from <https://www.bi.go.id>
- Bohn, R., Claessens, S., & Ghosh, S. (2020). Artificial intelligence in financial services: Opportunities and challenges. IMF Working Paper No. 20/201. International Monetary Fund. <https://doi.org/10.5089/9781513559625.001>
- Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution. World Bank. <https://doi.org/10.1596/978-1-4648-1259-0>
- Dusuki, A. W., & Abdullah, N. I. (2018). Fintech and Islamic finance: A conceptual framework and research agenda. *Journal of Islamic Accounting and Business Research*, 9(2), 221–236. <https://doi.org/10.1108/JIABR-12-2017-0188>
- Frost, J., Gambacorta, L., Huang, Y., Shin, H. S., Zbinden, P. (2019). BigTech and the changing structure of financial intermediation. BIS Working Papers No. 779. Bank for International Settlements. <https://doi.org/10.2139/ssrn.3364972>
- Frost, J., Gambacorta, L., Huang, Y., Shin, H. S., & Zbinden, P. (2022). The socio-economic impacts of fintech adoption in emerging markets. BIS Working Papers, No. 892. Bank for International Settlements. <https://www.bis.org>
- Gomber, P., Kauffman, R. J., Parker, C., Weber, B. W. (2018). On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. *Journal of Management Information Systems*, 35(1), 220–265. <https://doi.org/10.1080/07421222.2018.1440766>
- Hapsoro, D., Suryani, A., & Wijayanti, R. (2021). User Innovativeness and Fintech Adoption in Indonesia. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(3), 188. <https://doi.org/10.3390/joitmc7030188>
- Ilmi, M. N., Fadli, R., & Rasyid, S. (2024). Enhancing Islamic fintech adoption through digital literacy and technology-based education: Evidence from Indonesia. *Journal of Islamic Finance and Technology*, 6(1), 45–60.
- Indonesia Fintech Association. (2025). Indonesia Fintech 2025 Report: Digital financial inclusion trends and outlook. Jakarta: Indonesia Fintech Association.
- Indonesia Cyber Security Agency. (2024). Indonesia Cyber Security Report 2024: Cyber threats in financial services sector. Jakarta: National Cyber Security Agency.
- Kementerian Komunikasi dan Informatika Republik Indonesia. (2020). Indonesia Digital Economy 2020. Jakarta: Kominfo
- Kusuma, D., & Damayanti, R. (2022). Digital lending and MSME resilience during the COVID-19 pandemic in Indonesia. *Asian Journal of Economics and Business*, 4(3), 112–126.

- Lee, I., & Shin, Y. J. (2018). Fintech: Ecosystem, business models, investment decisions, and challenges. *Business Horizons*, 61(1), 35–46. <https://doi.org/10.1016/j.bushor.2017.09.003>
- Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44. <https://doi.org/10.1257/jel.52.1.5>
- McKinsey & Company. (2023). *Digital finance in Indonesia: Driving efficiency, inclusion, and growth through AI and big data*. Jakarta: McKinsey & Company.
- Otoritas Jasa Keuangan (OJK). (2023). *Annual Report on Fintech Regulation and Development in Indonesia*. Jakarta: OJK.
- Otoritas Jasa Keuangan (OJK). (2023). *Laporan Perkembangan Fintech Lending dan Regulasi Adaptif di Indonesia*. Jakarta: OJK.
- Otoritas Jasa Keuangan (OJK). (2025). *Financial literacy survey report 2025: Digital finance adoption and consumer behavior*. Jakarta: OJK.
- Philippon, T. (2016). *The fintech opportunity*. National Bureau of Economic Research Working Paper No. 22476. <https://doi.org/10.3386/w22476>
- Philippon, T. (2019). *The great reversal: How America gave up on free markets*. Harvard University Press.
- Putra, I. W., Lestari, D., & Ahmad, F. (2024). The Impact of Digital Financial Services on Transaction Efficiency: Evidence from Indonesia. *International Journal of Financial Innovation*, 9(1), 22–35.
- Sari, D., Prasetyo, A., & Nugroho, B. (2023). Digital financial inclusion and the rise of Islamic fintech in Indonesia. *Indonesian Journal of Financial Innovation*, 5(2), 90–108.
- Setiawan, B., & Rahman, F. (2023). The Role of Fintech in Financial Inclusion and MSME Growth in Indonesia. *Jurnal Oikonomia*, 19(2), 101–115.
- Susanti, R. (2021). Digital infrastructure inequality and fintech accessibility in rural Indonesia. *Journal of Development Economics and Policy*, 3(2), 77–91.
- Zavolokina, L., Dolata, M., & Schwabe, G. (2016). Fintech transformation: How IT-enabled innovations shape the financial sector. *Proceedings of the 37th International Conference on Information Systems (ICIS 2016)*, Dublin, Ireland.
- Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Barberis, J. N. (2020). Fintech for financial inclusion: A framework for digital transformation. *Journal of Banking Regulation*, 21(4), 311–329. <https://doi.org/10.1057/s41261-019-00104-3>