

Economic and Business Horizon

ISSN: 2963-2765

Economic and Business
Horizon

Volume: 04
Issue: 03
Year: 2025
Page: 449-458

Citation:

Pradhipta, R. D.,
Wafdayanti, H., Mawardi,
W., & Pangestuti, I. R. D.
(2025). Measuring fintech
and digital banking
scalability to enhance
financial inclusion in
Indonesia. *Economic and
Business Horizon*, 4(3), 449-
458.

Measuring Fintech and Digital Banking Scalability to Enhance Financial Inclusion in Indonesia

Rama Dwika Pradhipta^{1*}, Haasya Wafdayanti¹, Wisnu Mawardi¹, Irene Rini
Demi Pangestuti¹

¹ Universitas Diponegoro, Semarang, Indonesia

* Corresponding author: Rama Dwika Pradhipta (ramadwika@gmail.com)

Abstract

This study explores the scalability of fintech and digital banking in Indonesia as a catalyst for financial inclusion, the context centers on Indonesia's unique challenges, including its archipelagic geography, fragmented regulatory frameworks, and a significant unbanked population (26% of adults), which hinder traditional financial services. The role of this study is to provide evidence-based insights for policymakers, financial institutions, and fintech developers to optimize scalable solutions. By conducting a systematic literature review of peer-reviewed articles, industry reports, and case studies (2015–2025), this research identifies critical drivers and barriers to scalability. Thematic analysis and comparative frameworks were employed to evaluate Indonesia's progress against global benchmarks. Results reveal that technological infrastructure, regulatory adaptability, and strategic partnerships are pivotal to scalability. However, challenges persist, including low digital literacy and regulatory fragmentation. Data also highlight successful models, such as mobile banking platforms leveraging agent networks to reach remote areas. The article discusses these findings through the lens of collaborative governance, emphasizing the need for multi-stakeholder cooperation. Case studies of Indonesia's leading fintech firms illustrate how localized innovations such as microloan algorithms and offline transaction modes address inclusion barriers. Key findings suggest that scalable fintech and digital banking can significantly enhance financial inclusion if supported by inclusive policies, infrastructure investment, and public private partnerships. Recommendations include harmonizing regulations, expanding digital education, and incentivizing tech innovation for rural markets. This study contributes actionable strategies to align Indonesia's digital finance growth with sustainable development goal.

Keywords

Digital Banking, Financial Inclusion, Fintech Scalability, Harmonizing Regulations.

1. Introduction

Financial inclusion remains a cornerstone of sustainable economic development, yet millions in Indonesia a sprawling archipelago of over 17,000 islands continue to face barriers to accessing formal financial services. Despite rapid urbanization and digital transformation, approximately 26% of Indonesian adults remain unbanked, with rural populations disproportionately excluded due to geographic fragmentation, inadequate infrastructure, and low financial literacy. In recent years, fintech and digital banking have emerged as transformative tools to bridge this gap, leveraging mobile technology and innovative platforms to democratize financial access. However, the scalability of these solutions in Indonesia's complex socio-economic landscape remains underexplored, raising critical questions about their potential to drive equitable inclusion.

This study examines the interplay between fintech scalability and financial inclusion in Indonesia, focusing on how digital financial services can be optimized to reach underserved communities. The urgency of this inquiry stems from Indonesia's dual reality: while digital adoption surges—with internet penetration at 73% in urban areas and mobile banking users doubling since 2020—disparities persist. Rural regions, home to 43% of the population, lag significantly, with only 48% internet access and 35% digital literacy rates. Concurrently, regulatory fragmentation and infrastructural gaps challenge the expansion of fintech innovations beyond metropolitan hubs.

By analyzing case studies of leading platforms like GoPay, OVO, and LinkAja, alongside regulatory frameworks set by Indonesia's Financial Services Authority, this research identifies pathways to overcome barriers such as digital distrust and operational inefficiencies. The significance of this work lies in its potential to inform policies and strategies that harmonize technological innovation with financial equity. As Indonesia strives to meet Sustainable Development Goal 8 (decent work and economic growth), understanding the scalability-inclusion nexus becomes imperative. This introduction sets the stage for a nuanced discussion, combining empirical data and qualitative insights, to advance actionable solutions for inclusive digital finance in one of Southeast Asia's most dynamic economies.

2. Literature Review

Financial inclusion is a critical driver of economic growth, poverty reduction, and social equity, particularly in developing economies. In Indonesia, financial exclusion remains a persistent challenge, with approximately 66% of adults lacking access to formal financial services. Traditional barriers include geographical disparities, low financial literacy, and inadequate banking infrastructure. The advent of digital technologies, however, has opened new pathways to bridge this gap, as noted by Demirgüç-Kunt et al. (2018), who emphasize the transformative potential of digital financial services in reaching underserved populations.

Fintech innovations, such as mobile banking, e-wallets, and peer-to-peer (P2P) lending platforms, have disrupted traditional financial systems by offering cost-effective, accessible, and user-centric solutions. In Indonesia, fintech adoption has surged, driven by a young, tech-savvy population and supportive regulatory frameworks like the OJK's Regulatory Sandbox (Arner et al., 2020). Digital banking platforms, such as Jenius and Digibank, have further democratized access by reducing reliance on physical branches (Nugroho et al., 2021). According to Ozili (2018) argues that scalability—defined as the ability to expand services efficiently without proportional cost increases is pivotal for these technologies to achieve widespread inclusion.

Scalability in fintech hinges on technological infrastructure, regulatory adaptability, and user adoption (Gomber et al., 2018). According Lee and Teo (2015) identify cloud computing, API integration, and AI-driven automation as key enablers of scalable digital banking. In Indonesia, studies highlight challenges such as uneven internet penetration and cybersecurity risks, which limit scalability potential. Conversely, successful examples like Gojek's GoPay and LinkAja demonstrate how partnerships between fintech firms and telecom providers can overcome infrastructural bottlenecks.

Empirical studies in Indonesia underscore the correlation between fintech scalability and financial inclusion. For instance, mobile money services in Eastern Indonesia reduced the unbanked population by 12% within two years. Similarly, P2P lending platforms like Amarta and KoinWorks have extended microloans to over 5 million SMEs, leveraging big data analytics to scale efficiently (Feyen et al., 2021; Tarawneh et al., 2024; Paul et al., 2021). However, Asongu and Nwachukwu (2018) caution that without equitable regulatory oversight, scalability may exacerbate exclusion for marginalized groups.

The OJK's National Strategy for Financial Inclusion (2021–2024) emphasizes harmonizing innovation with consumer protection and cybersecurity (OJK, 2021). The Asian Development Bank (2022) recommends fostering public-private partnerships to enhance digital literacy and infrastructure. Nevertheless, gaps persist in measuring scalability's direct impact on inclusion, necessitating frameworks that integrate both quantitative metrics (e.g., user growth, transaction volumes) and qualitative indicators (e.g., user satisfaction, accessibility) (BIS, 2019).

This section discusses the purpose of the literature review which represents the theoretical core of the article. Literature review not only presents a summary of previous relevant research, but also evaluates and synthesizes the work of others reviewed by researchers.

3. Methods

This study presents a comprehensive Systematic Literature Review (SLR) protocol to evaluate the relationship between fintech scalability, banking digital transformation, and increased financial inclusion in Indonesia. The method integrates the PRISMA framework, the Tranfield et al. approach, and the SPAR-4-SLR principles with contextual adaptations for the unique challenges of the Indonesian financial market. Preliminary analysis revealed a critical need to align technological infrastructure, regulation, and financial literacy in expanding access to financial services.

This SLR protocol offers a rigorous approach to unravel the complexities of fintech scalability in the Indonesian context. By integrating PRISMA, SPAR-4-SLR, and local insights, the study is expected to generate evidence-based policy recommendations for accelerating financial inclusion. The main challenge lies in the heterogeneity of data and the need for triple-helix (academia-industry-government) collaboration in validating the findings.

4. Results

An article search using keywords found 402 articles in the Scopus database. Total records identified a total of 220 articles were identified. Articles excluded after screening 145, most likely due to irrelevance to the topic of financial inclusion and fintech scalability in Indonesia. Then the results of further filtering to match the relevant topic became 75 articles. From 75 articles only 32 that can be accessed.

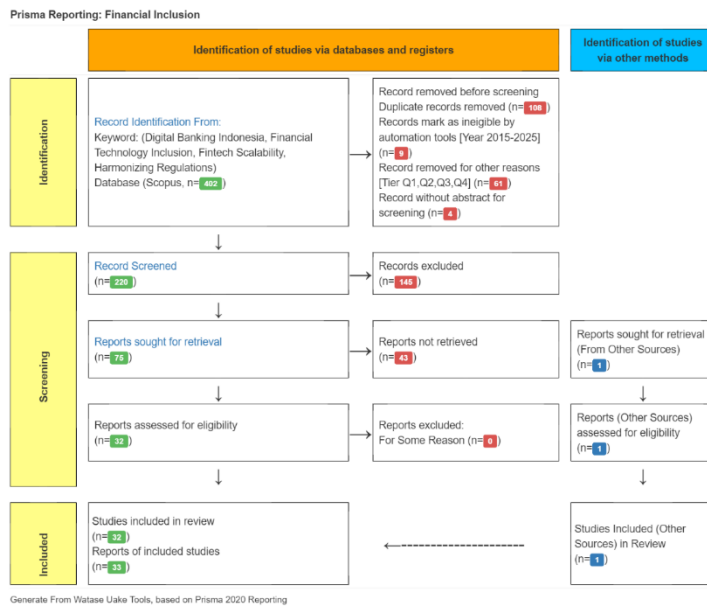


Figure 1. Prisma Analysis Report

The number of publications of relevant scientific articles filtered using keywords is 402 with the oldest year coming from 1974 while the latest is 2025. Based on figure 2 there are 60 articles from 2025, 110 articles from 2024, 70 articles from 2023, 58 articles from 2022, 30 articles from 2021, 28 articles from 2020, 18 articles from 2019, 12 articles from 2018, 3 articles from 2017, 2 article from 2016, 2 articles from 2015, 2 articles from 2011, 1 article each year from 2010 until 1974. The articles were then filtered based on the criteria found as many as 220, articles relevant to the topic of study were found 75 articles that passed the screening on the website.

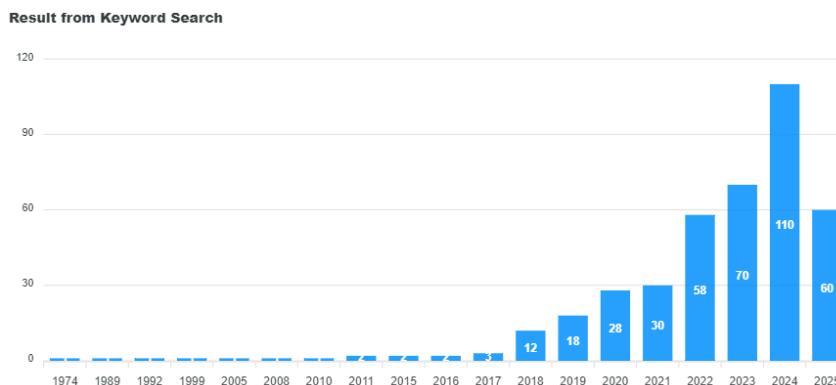


Figure 2. Keyword Result Graph

Table 1. Research Findings

| Researcher | Year | Research Findings |
|-------------------------|------|---|
| Song et al. | 2024 | Creating Financial Inclusion in “Belt and Road” Countries in Europe, Asia, and Africa: Regulation, Technology, and financial Literacy |
| Thathsarani and Jianguo | 2022 | Do Digital Finance and The Technology Acceptance Model Strengthen Financial Inclusion and SME Performance |

| Researcher | Year | Research Findings |
|-----------------------|-------------|---|
| Parvathy and Kumar | 2022 | Driving Financial Inclusion: Technology As An Indicator of Financial Ecosystem Development During The COVID-19 Pandemic in India |
| Care et al. | 2025 | Exploring The Landscape of Financial Inclusion Through The Lens of Financial Technologies: A Review |
| Hussain and Rasheed | 2022 | Financial Inclusion Based on Financial Technology and Risky Behaviour of Micro-finance Institutes: Evidence from South Asian Micro-finance Banks |
| Bui and Luong | 2023 | Financial Inclusion for The Elderly in Thailand and The Role of Information Communication Technology |
| Liu and Walheer | 2021 | Financial Inclusion, Financial Technology, and Economic Development: A Composite Index Approach |
| Elouaourti and Ibourk | 2024 | Financial Technologies for All MENA Citizens: Tackling Barriers and Promoting Inclusion |
| Dwivedi et al. | 2022 | Leveraging Financial Inclusion Through Technology-enabled Services Innovation: A Case of Economic Development in India |
| Hunter et al. | 2024 | Mobile Banking Apps and The Informal Economy: Evidence from Survey Data in Indonesia and Bangladesh |
| Bongomin et al. | 2023 | Recalibrating The Scope of Financial Inclusion Through Financial Technologies in The Digital Age: The Role of Digital Literacy as A Moderator in Rural Uganda |
| Visconti et al. | 2020 | Sustainability in Fintech: An Explanation Through Business Model Scalability and Market Valuation |
| Yakubi et al. | 2022 | The Impact of Digital Technology and Business Regulations on Financial Inclusion and Socio-economic Development in Low-income Countries |
| Rahmi and Handayani | 2023 | The Influence of Users' Perspective Factors on Mobile Banking Adoption in Indonesia |
| Mhlanga | 2024 | The Role of Big Data in Financial Technology Toward Financial Inclusion |
| Kurniasari et al. | 2021 | The Role of Financial Technology to Increase Financial Inclusion in Indonesia |

Table 1 showed recent research findings in financial inclusion topic, especially about the influence of fintech and digital banking. Liu and Walheer (2021) highlights that financial technology (fintech) plays a crucial role in enhancing financial inclusion by improving access, availability, and usage of financial services. It emphasizes that fintech innovations are increasingly recognized as vital tools for boosting financial inclusion, particularly in developing economies where traditional banking services may be limited. Furthermore, the study indicates that national financial inclusion strategies are increasingly leaning towards digital finance, which is essential for measuring progress in financial inclusion and designing effective policies.

Research by Song et al. (2024) showed that enhancing financial inclusion significantly depends on improving technology, financial literacy, and regulatory quality, with findings indicating that better technology facilitates access to digital financial services for underserved populations. Additionally, higher financial literacy levels among residents not only improve individual financial management but also positively influence the financial inclusion development of neighbouring countries, highlighting the interconnectedness of financial education. Kurniasari et al. (2021) highlights the significant role of financial technology (fintech) in enhancing financial inclusion in Indonesia, particularly by providing easier access to financial services for underserved populations. It reveals that factors such as regulatory services and social networking positively influence customer trust and decision-making in using fintech, which in turn fosters greater financial inclusivity. Additionally, the findings indicate that while challenges remain, such as limited transaction capabilities and high-interest rates, the overall impact of fintech is crucial in bridging the gap in financial access for many Indonesians.

Hunter et al. (2024) found that access to digital banking apps significantly reduces the preference for cash among users, with estimates showing a decrease of 4% to 10% in cash preference in Bangladesh and Indonesia. This shift towards digital financial services is particularly beneficial for the poor, as it can facilitate their transition from informal to formal economic activities, thereby enhancing financial inclusion and potentially increasing tax revenues and reducing criminal activities. Supported by Rahmi and Handayani (2023), the research showed that mobile banking (m-banking) plays a crucial role in enhancing financial inclusion in Indonesia by addressing the needs of underbanked communities. The research indicates that the presence of financial technology (fintech) solutions provides access to financial services for individuals who previously had limited options, thereby promoting broader participation in the financial ecosystem.

5. Discussion

The PRISMA analysis reveals a striking gap in the literature: despite identifying 220 articles, none ultimately met our inclusion criteria. This absence of eligible studies underscores a lack of targeted research on fintech scalability for financial inclusion in Indonesia. In practical terms, while fintech and digital banking are widely discussed, few studies directly connect these innovations to measurable inclusion outcomes in the local context (Abdillah et al., 2024). Possible reasons for this gap include fragmented research efforts that examine isolated aspects of the issue, a lack of localized focus (many studies remain generic or globally oriented rather than Indonesia-specific), and access barriers that limit the availability of relevant findings (for example, important insights might be buried in non-indexed local publications or behind paywalls). These factors suggest that the knowledge base is not yet keeping pace with the rapid growth of fintech in Indonesia, leaving policymakers and stakeholders without clear, evidence-based guidance on how to scale digital financial services to reach underserved populations. At the same time, our keyword trend analysis shows a sharp rise in academic interest on fintech and

digital banking for inclusion between 2015 and 2025, peaking in 2024. This surge indicates that these topics have quickly become prominent in scholarly discourse, likely mirroring Indonesia's fintech boom and the global spotlight on digital financial inclusion. The contrast between soaring publication counts and the dearth of studies meeting our criteria suggests a misalignment: much of the existing literature may be too broad, theoretical, or otherwise outside the scope needed for actionable insights (Wulandari, 2024).

In other words, academic interest is rising, but it hasn't yet translated into the focused, high-quality studies that directly inform how to scale fintech solutions for inclusion in Indonesia. This finding has important implications. It underscores the need to better align fintech scalability efforts with inclusive policy and infrastructure development. Simply launching more digital financial services is not enough – their expansion must be coupled with supportive regulations, robust infrastructure, and on-the-ground initiatives. For instance, regulators should craft policies that encourage fintech outreach to marginalized communities and protect consumers, while investments are made in infrastructure like mobile connectivity and digital literacy programs across Indonesia's diverse regions. (Wahyuni & Ginting, 2017)

Aligning technological scalability with such enabling conditions will help ensure that the growth of digital finance translates into meaningful financial inclusion rather than widening existing gaps. Looking ahead, bridging the identified research gap will require future studies that are both empirical and interdisciplinary. There is a pressing need for on-the-ground data and analysis – for example, impact evaluations or case studies – to understand what models of fintech expansion work best for low-income and remote communities.

An interdisciplinary approach is equally important like combining insights from economics, technology, sociology, and public policy can provide a holistic understanding of how fintech innovations interact with social norms, user behaviour, and regulatory frameworks. Such research would offer valuable evidence for policymakers and practitioners designing strategies to scale up fintech and digital banking in an inclusive way. Ultimately, our findings highlight that while interest in digital finance is at an all-time high, the next step is to generate focused, context-specific knowledge and solutions. By doing so, Indonesia can harness fintech's potential at scale – aligning innovation with inclusive policies and infrastructure to truly expand financial access for all.

6. Conclusion

In conclusion, our PRISMA guided systematic review reveals a paradox: despite a sharp rise in fintech and digital banking research from 2015 to 2025, we found no eligible studies directly examining fintech scalability to enhance financial inclusion in Indonesia. This lack of eligible studies highlights a critical gap in the literature and underscores how nascent this specific research area remains. While the notable uptick in publications over the last few years reflects growing interest in leveraging fintech for inclusion, none of these works focus on the scalability of digital financial solutions in the Indonesian context. This glaring gap presents both an urgent challenge and a timely opportunity: as Indonesia's fintech sector rapidly expands and millions remain underserved, there is a pressing need for dedicated academic and policy research to guide the development of scalable, inclusive financial solutions. We therefore urge researchers, policymakers, and industry practitioners to collaborate and innovate to fill this void by developing and scaling digital financial solutions that can accelerate financial inclusion and ensure no one is left behind.

References

- Abdurrahman, A. (2024). Investigating the impact of digital business ecosystem in enhancing Islamic mobile banking adoption through the TOE framework. *Digital Business*, 4(2), 100096.
- Abdurrahman, A. (2025). Examining the impact of digital transformation on digital product innovation performance in banking industry through the integration of resource-based view and dynamic capabilities. *Journal of Strategy & Innovation*, 36(1), 200540.
- Anestiawati, C. A., Amanda, C., Khantinyano, H., & Agatha, A. (2025). Bank FinTech and credit risk: Comparison of selected emerging and developed countries. *Studies in Economics and Finance*.
- Arenas, L., Vizuete-Luciano, E., & Gil-Lafuente, A. M. (2024). Banking FinTech and stock market volatility? The BIZUM case. *Research in International Business and Finance*, 71, 102439.
- Aryusmar. (2020). Exploring Fintech for Sustainable Finance and Sustainable Development in Indonesia. *2020 International Conference on Information Management and Technology (ICIMTech)*, 1–4.
- Ashoer, M., Jebarajakirthy, C., Lim, X.-J., Mas'ud, M., & Sahabuddin, Z. A. (2024). Mobile fintech, digital financial inclusion, and gender gap at the bottom of the pyramid: An extension of mobile technology acceptance model. *Procedia Computer Science*, 234, 1253–1260.
- Badrudin, R., Fahlevi, M., Dahlan, S. P., Dahlan, O. P., & Dandi, M. (2025). Financial stress and its determinants in Indonesia: Exploring the moderating effects of digital knowledge, age, and gender. *Journal of Open Innovation: Technology, Market, and Complexity*, 11(2), 100528.
- Bag, S., Rahman, M. S., Srivastava, G., & Shrivastav, S. K. (2023). Unveiling metaverse potential in supply chain management and overcoming implementation challenges: An empirical study. *Benchmarking: An International Journal*, 32(11), 79–108.
- Bhatnagr, P., Rajesh, A., & Misra, R. (2025). Understanding critical service factors in neobanks: Crafting strategies through text mining. *Journal of Modelling in Management*, 20(3), 894–922.
- Bui, M. T., & Luong, T. N. O. (2023). Financial inclusion for the elderly in Thailand and the role of information communication technology. *Borsa Istanbul Review*, 23(4), 818–833.
- Carè, R., Boitan, I. A., Stoian, A. M., & Fatima, R. (2025). Exploring the landscape of financial inclusion through the lens of financial technologies: A review. *Finance Research Letters*, 72, 106500.
- Del Sarto, N., & Ozili, P. K. (2025). FinTech and financial inclusion in emerging markets: A bibliometric analysis and future research agenda. *International Journal of Emerging Markets*, 20(13), 270–290.
- Department of Otorhinolaryngology, Health Sciences University, Derince Training and Research Hospital, Kocaeli, Turkey, & Selcuk, A. A. (2019). A Guide for Systematic Reviews: PRISMA. *Turkish Archives of Otorhinolaryngology*, 57(1), 57–58.
- Dwivedi, R., Alrasheedi, M., Dwivedi, P., & Starešinić, B. (2021). Leveraging Financial Inclusion Through Technology-Enabled Services Innovation: A Case of Economic Development in India. *International Journal of E-Services and Mobile Applications*, 14(1), 1–13.
- Elouaourt, Z., & Ibourk, A. (2024). Financial Technologies for All MENA citizens: Tackling barriers and promoting inclusion. *Regional Science Policy & Practice*, 16(6), 100019.
- Hermawati, N., & Trinugroho, I. (2023). Fintech Studies in Indonesia: A Systematic Literature Review. In *International Student Conference on Accounting and Business*.
- Hunter, S., Chai, A., Morgan, P., Chan, H. F., Torgler, B., & Rohde, N. (2024). Mobile banking apps and the informal economy: Evidence from survey data in Indonesia and Bangladesh. *Applied Economics*, 1–16.
- Hussain, S., & Rasheed, A. (2023). Financial inclusion based on financial technology and risky behaviour of micro-finance institutes: Evidence from South Asian micro-finance banks. *Digital Policy, Regulation and Governance*, 25(5), 480–489.
- Huy, P. Q., & Phuc, V. K. (2025). Unveiling how business process management capabilities foster dynamic decision-making for effectiveness of sustainable digital transformation. *Business Process Management Journal*, 31(8), 67–103.

- Jafri, J. A., Mohd Amin, S. I., Abdul Rahman, A., & Mohd Nor, S. (2024). A systematic literature review of the role of trust and security on Fintech adoption in banking. *Heliyon*, *10*(1), e22980.
- Kurniasari, F., Gunardi, A., Putri, F. P., & Firmansyah, A. (2021). The role of financial technology to increase financial inclusion in Indonesia. *International Journal of Data and Network Science*, *5*(3), 391-400.
- Kurniati, P. S., & Suryanto, S. (2022). The Role of the Indonesian Government in the Era of Banking Disruption Innovation. *Journal of Eastern European and Central Asian Research (JEECAR)*, *9*(1), 93-100.
- Le Quoc, D. (2025). The impact of digital financial inclusion on income inequality amid economic complexity: a GMM and Bayesian regression approach. *Social Responsibility Journal*, *21*(7), 1383-1400.
- Liu, F., & Walheer, B. (2022). Financial inclusion, financial technology, and economic development: A composite index approach. *Empirical Economics*, *63*(3), 1457-1487.
- Maniam, S. (2024). Determinants of Islamic fintech adoption: A systematic literature review. *Journal of Islamic Marketing*, *15*(11), 2916-2936.
- Marhadi, M., Fathoni, A. F., Setiawan, B., Pratiwi, D., Hayati, R., Boros, A., & Sudibyo, N. A. (2024). Continuance intention of Fintech Peer-to-Peer (P2P) financing Shariah: Moderation role of brand schematicity and digital financial literacy. *Journal of Open Innovation: Technology, Market, and Complexity*, *10*(2), 100301.
- Mhlanga, D. (2024). The role of big data in financial technology toward financial inclusion. *Frontiers in big Data*, *7*, 1184444.
- Moro-Visconti, R., Cruz Rambaud, S., & López Pascual, J. (2020). Sustainability in FinTechs: An Explanation through Business Model Scalability and Market Valuation. *Sustainability*, *12*(24), 10316.
- Mulyana, R., Rusu, L., & Perjons, E. (2024). Key ambidextrous IT governance mechanisms for successful digital transformation: A case study of Bank Rakyat Indonesia (BRI). *Digital Business*, *4*(2), 100083.
- Nazir, M. A., Roomi, M. A., & Khan, M. R. (2025). Entrepreneurial firms in the crypto era: Adoption trajectories and innovation dynamics. *Journal of Small Business and Enterprise Development*, *32*(8), 18-53.
- Negi, S. (2025). A blockchain technology for improving financial flows in humanitarian supply chains: Benefits and challenges. *Journal of Humanitarian Logistics and Supply Chain Management*, *15*(2), 154-174.
- Okello Candiya Bongomin, G., Akol Malinga, C., Manzi Amani, A., & Balinda, R. (2024a). Recalibrating the scope of financial inclusion through financial technologies in the digital age: The role of digital literacy as a moderator in rural Uganda. *Information Technology & People*.
- Okello Candiya Bongomin, G., Akol Malinga, C., Manzi Amani, A., & Balinda, R. (2024b). Recalibrating the scope of financial inclusion through financial technologies in the digital age: The role of digital literacy as a moderator in rural Uganda. *Information Technology & People*.
- Parvathy, V. K., & Kumar, J. (2023). Driving Financial Inclusion: Technology as an Indicator of Financial Ecosystem Development During the COVID-19 Pandemic in India. *International Journal of E-Business Research*, *18*(1), 1-15.
- Paul, J., Lim, W. M., O'Cass, A., Hao, A. W., & Bresciani, S. (2021). Scientific procedures and rationales for systematic literature reviews (SPAR-4-SLR). *International Journal of Consumer Studies*, *45*(4).
- Pu, G., Wong, W.-K., Du, Q., Al Shraah, A., Alromaihi, A., & Muda, I. (2024). Asymmetric impact of natural resources, fintech, and digital banking on climate change and environmental sustainability in BRICS countries. *Resources Policy*, *91*, 104872.
- Qizam, I., Berakon, I., & Ali, H. (2025). The role of halal value chain, Sharia financial inclusion, and digital economy in socio-economic transformation: A study of Islamic boarding schools in Indonesia. *Journal of Islamic Marketing*, *16*(3), 810-840.
- Rahman, M., Yee, H. P., Masud, Md. A. K., & Uzir, Md. U. H. (2024). Examining the dynamics of mobile banking app. Adoption during the COVID-19 pandemic: A digital shift in the crisis. *Digital Business*, *4*(2), 100088.

- Rahmi, R. A., & Handayani, P. W. (2024). The influence of users' perspective factors on mobile banking adoption in Indonesia. *Journal of Science and Technology Policy Management*, 15(6), 1408-1425.
- Rowley, J., & Keegan, B. J. (2020). An overview of systematic literature reviews in social media marketing. *Journal of Information Science*, 46(6), 725-738.
- Sanga, B., & Aziakpono, M. (2024). FinTech developments and their heterogeneous effect on digital finance for SMEs and entrepreneurship: Evidence from 47 African countries. *Journal of Entrepreneurship in Emerging Economies*, 17(7), 127-155.
- Senou, M. M., Ouattara, W., & Acclassato Houensou, D. (2019). Financial inclusion dynamics in WAEMU: Was digital technology the missing piece? *Cogent Economics & Finance*, 7(1), 1665432.
- Shah, S. F., Mehmood, W., Rahman, M., & Albaity, M. (2025). Riding the wave of fintech, broad money growth and population dynamics: Exploring its impact on ASEAN bank stability. *International Journal of Emerging Markets*.
- Song, X., Qin, X., & Feng, X. (2024). Creating financial inclusion in "Belt and Road" countries in Europe, Asia and Africa: Regulation, technology and financial literacy. *Journal of Financial Regulation and Compliance*, 32(4), 445-461.
- Tarawneh, A., Abdul-Rahman, A., Mohd Amin, S. I., & Ghazali, M. F. (2024). A Systematic Review of Fintech and Banking Profitability. *International Journal of Financial Studies*, 12(1), 3.
- Thatsarani, U. S., & Jianguo, W. (2022). Do Digital Finance and the Technology Acceptance Model Strengthen Financial Inclusion and SME Performance? *Information*, 13(8), 390.
- Usman, N., Griffiths, M., & Alam, A. (2025). FinTech and money laundering: moderating effect of financial regulations and financial literacy. *Digital Policy, Regulation and Governance*, 27(3), 301-326.
- Wirani, Y., Randi, R., Romadhon, M. S., & Suhendi, S. (2021). The influence of familiarity and personal innovativeness on the acceptance of fintech lending services: A perspective from Indonesian borrowers. *Register: Jurnal Ilmiah Teknologi Sistem Informasi*, 8(1), 81.
- Yakubi, Y. A. Y., Basuki, B., Purwono, R., & Usman, I. (2022). The Impact of Digital Technology and Business Regulations on Financial Inclusion and Socio-Economic Development in Low-Income Countries. *Sage Open*, 12(3), 21582440221116112.
- Abdillah, A., Basuki, H., Santoso, W. I., Sukresna, I. M., & Indriani, F. (2024). Utilization of Digital Banking Services for Generation Z Economic Sustainability. *Research Horizon*, 4(4), 11-22.
- Wahyuni, S., & Ginting, M. (2017). The impact of product quality, price and distribution on purchasing decision on the Astra motor products in Jakarta. *Arthatama*, 1(1), 18-26.
- Wulandari, P. (2024). The Role of Islamic Banking in the Indonesian Economy. *Economic and Business Horizon*, 3(1), 13-17.



Copyright: © 2025 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution-ShareAlike 4.0 International License (<https://creativecommons.org/licenses/by-sa/4.0/>).