1ST ICEFCI: INTERNATIONAL CONFERENCE ON ECONOMICS, FINANCE AND CREATIVE INDUSTRY 2026
PROCEEDING AND CALL FOR PAPER

Exploring the impact of Islamic finance digitalisation on socio-economic in Indonesia: A bibliometric and scoping study

Rachma Indrarini [1], Clarashinta Canggih [2], Fira Nurafini[3], Nurwinsyah Rohmaningtyas[4]

[1] *Universitas Negeri Surabaya, Indonesia – rachmaindrarini@unesa.ac.id*
[2] *Universitas Negeri Surabaya, Indonesia – clarashintacanggih@unesa.ac.id*
[3] *Universitas Negeri Surabaya, Indonesia – firanurafini@unesa.ac.id*
[4] *Universitas Negeri Surabaya, Indonesia – nurwinsyahrohmaningtyas@unesa.ac.id*

ARTICLE INFORMATION

Available online: July, 2026.

KEYWORDS

Islamic Finance; Digitalisation; Socio-Economic Development.

CORRESPONDENCE

E-mail: *rachmaindrarini@unesa.ac.id*

ABSTRACT

The rapid development of digital technology has transformed the Islamic finance sector and created new opportunities for improving financial inclusion and socio-economic development in Indonesia. This study aims to map the development, research trends, and thematic patterns of Islamic finance digitalisation and its socio-economic impacts in Indonesia. A scoping review and bibliometric analysis were employed using publications indexed in Scopus and SINTA. The bibliometric analysis was conducted using VOSviewer to examine annual scientific production, citation patterns, and keyword co-occurrence. The findings indicate a significant increase in scientific production over the past decade, with research evolving from an initial focus on technology adoption in Islamic banking toward broader issues of Islamic fintech, financial inclusion, SME empowerment, and Islamic social finance. The keyword analysis identified 167 keywords grouped into 16 clusters, with 748 links and a total link strength of 870, demonstrating strong conceptual interconnectedness across economic, technological, social, and institutional dimensions. The network and overlay visualisations further highlight *Islamic, digital, fintech, banking, sharia, financial inclusion,* and *innovation* as prominent and emerging themes. However, empirical studies directly examining the broader socio-economic impacts of digitalisation, particularly on welfare, poverty alleviation, SME development, and sustainable development, remain limited. These findings suggest that future research should strengthen empirical and mixed-method approaches to assess the actual socio-economic outcomes of Islamic finance digitalisation in Indonesia.

Keywords: Islamic finance digitalisation; Islamic fintech; financial inclusion; socio-economic development; Islamic social finance; bibliometric analysis; Indonesia.

INTRODUCTION

Indonesia offers a particularly interesting setting for examining the development of Islamic finance in the digital era. As the country with the world's largest Muslim population, Indonesia has a large potential market for Islamic financial services. Over the past several years, the sector has expanded beyond traditional Islamic banking. The emergence of Islamic fintech, mobile banking, digital payment services, online investment platforms, and digital zakat and waqf services has gradually changed how people access financial products and conduct financial activities [1]. These developments suggest that digital technology is becoming an increasingly important part of the Islamic financial ecosystem in Indonesia. For many people, digital financial services are not simply about using new technology. They can make financial services easier to reach, particularly for individuals and small businesses who may face difficulties accessing conventional financial institutions. Transactions can be completed more quickly, information can be accessed through mobile devices, and financial services can reach people beyond the physical locations of banks and other institutions. In the context of Indonesia, where communities are spread across thousands of islands and access to financial services differs considerably between regions, this potential is particularly relevant. Digitalisation therefore creates an opportunity for Islamic finance to reach a wider range of people and become more closely connected with everyday economic activities [2]. The possible benefits, however, extend beyond access and convenience. When people can obtain financing more easily, make payments digitally, invest, or access Islamic social finance services, their opportunities to participate in economic activities may also increase. For micro and small businesses, for example, easier access to financing may support business development. For individuals, digital financial services may provide new ways to save, invest, or manage financial resources. In this sense, digitalisation may have wider socio-economic consequences, including improvements in financial inclusion, economic empowerment, income opportunities, and social welfare.

At the same time, the expansion of digital Islamic finance does not necessarily mean that its benefits are equally experienced by everyone. Differences in digital and financial literacy, access to internet infrastructure, trust in digital platforms, concerns about security, and understanding of Islamic financial principles can influence how people use these services [3]. These issues are particularly important because the success of digitalisation should not be judged only by the number of users or transactions. It is also important to consider whether digital Islamic finance is helping people gain meaningful access to economic opportunities and whether these opportunities translate into broader improvements in their socio-economic conditions. Research in this area has grown alongside the development of digital Islamic finance. Previous studies have discussed topics such as Islamic fintech adoption, digital banking, peer-to-peer financing, digital payments, Islamic investment, and the digitalisation of zakat and waqf. Although this literature provides valuable insights, it is spread across different research areas and often focuses on specific services, technologies, or groups of users. As a result, the broader picture is still difficult to see. In particular, the connection between Islamic finance digitalisation and socio-economic development has not yet been brought together in a comprehensive way, especially from the perspective of Indonesia.

This fragmented body of knowledge provides a reason to look at the literature from a wider perspective. Rather than focusing on one particular digital financial service, this study brings together research related to the broader digitalisation of Islamic finance and examines how its socio-economic implications have been discussed in previous studies. Bibliometric analysis is used to identify how the field has developed, including publication trends, influential research, collaboration patterns, and emerging themes. A scoping study is then used to examine the scope and characteristics of existing evidence, particularly the socio-economic outcomes associated with digital Islamic finance and the areas that remain insufficiently explored.

The purpose of this study is therefore to explore the development of research on Islamic finance digitalisation and its socio-economic implications in Indonesia through a bibliometric and scoping study. The study focuses on three main aspects: the development of the research field, the major themes that have emerged, and the socio-economic outcomes discussed in the existing literature. By bringing these strands of research together, the study seeks to provide a clearer understanding of where the field currently stands and where future research could contribute. The findings are expected to be useful not only for researchers but also for financial institutions and policymakers. A better understanding of the existing evidence can help identify which aspects of digital Islamic finance have received sufficient attention and which issues still require further investigation. More importantly, it can contribute to a broader discussion about how digitalisation can be directed toward an Islamic financial ecosystem that is not only technologically advanced, but also accessible, inclusive, and capable of supporting people's economic and social well-being.
Accordingly, this study addresses the following research question:
How does Islamic finance digitalisation contribute to socio-economic development in Indonesia based on the existing body of literature?

METHODS

This study combines a scoping review and bibliometric analysis to understand the development of research on Islamic finance digitalisation and its relationship with socio-economic conditions in Indonesia. The two approaches are used together because they offer different but complementary perspectives. The scoping review helps us understand the content and scope of existing studies, while the bibliometric analysis shows how the field has developed, which topics have received the most attention, and how researchers have contributed to the development of knowledge. In this way, the study goes beyond simply counting publications and seeks to understand the direction of research on Islamic finance digitalisation.

The literature was collected from Scopus and SINTA, focusing on journal articles that discuss different forms of Islamic finance digitalisation, including *Islamic fintech*, Islamic digital banking, digital zakat, digital waqf, and Sharia crowdfunding. The selected studies were also required to relate to social or economic issues, such as financial inclusion, social welfare, MSME empowerment, poverty alleviation, and economic growth. To maintain relevance to recent developments in Islamic finance digitalisation, the study focused on publications from the last ten years. The selected publications consisted of *research articles* and *review articles* that had undergone peer review and were written in either English or Indonesian. Articles that were not indexed in Scopus or SINTA, did not adopt an Islamic finance perspective, focused only on technical aspects of technology, or had no clear relevance to the Indonesian context were excluded. Conference proceedings, books, book chapters, editorials, working papers, and other non-peer-reviewed documents were also excluded from the review.

The literature search used several combinations of keywords that reflected the focus of the study: "Impact of Islamic Finance Digitalisation on Socio-Economic in Indonesia," "Impact of Islamic Finance Digitalisation on Socio-Economic," and "Impact of Islamic Finance Digitalisation." The resulting publications were then screened according to their relevance to the research objectives. Particular attention was given to the research context, the form of Islamic finance digitalisation examined, and the social and economic issues discussed. Studies that met the selection criteria were subsequently mapped according to their publication year, research focus, methodological approach, and main findings. This process provided an overview of how academic attention to Islamic finance digitalisation has developed over time.

To complement this mapping, a bibliometric analysis was conducted using VOSviewer. The analysis covered annual scientific production, citation analysis, co-authorship analysis, and keyword co-occurrence analysis. Annual scientific production was examined to identify changes in publication activity over time, while citation analysis was used to identify publications and authors that received greater attention within the literature. Co-authorship analysis provided insights into patterns of collaboration among researchers. Meanwhile, keyword co-occurrence analysis was used to identify terms that frequently appeared together and, in turn, to reveal the main themes emerging in research on Islamic finance digitalisation.

The bibliometric findings were further examined through network, overlay, and density visualisations. Network visualisation was used to explore relationships among keywords and the clusters of themes that emerged from the literature. Overlay visualisation helped illustrate how research topics have developed over time, making it possible to distinguish established themes from topics that have gained attention more recently. Density visualisation was used to identify areas with a higher concentration of research activity. These visualisations allow the development of the field to be viewed not only in terms of publication volume, but also through changes in academic attention and the relationships between research themes.

Finally, the findings from the scoping review and bibliometric analysis were considered together to develop a broader understanding of the research landscape. The bibliometric analysis provides a picture of the structure and development of the field, while the scoping review helps explain the content of the studies and the socio-economic issues they address. Bringing the two perspectives together makes it possible to identify areas that have received considerable research attention as well as those that remain relatively underexplored. The combined findings were then used to examine how Islamic finance digitalisation has been associated with financial inclusion, MSME empowerment, welfare, poverty alleviation, and socio-economic development in Indonesia, while also highlighting opportunities for future research.

RESULTS AND DISCUSSION

Annual Scientific Production

The analysis of annual scientific production aims to identify the dynamics of research development concerning Islamic finance digitalisation and its impact on socio-economic conditions in Indonesia. Based on publication metadata collected from the Scopus and SINTA databases, the pattern of publication growth is not linear but shows a significant upward trend over the past decade. This pattern reflects the growing academic interest in digital transformation within the Islamic finance sector as an instrument for inclusive development [4] [5]. During the early period of 2010–2014, the number of publications remained relatively limited and was dominated by conceptual articles and small-scale case studies, generally focusing on the early adoption of information technology in Islamic banking, such as *internet banking* and *core banking systems*, with an emphasis on operational efficiency and Sharia compliance [6] [7]. However, during 2015–2018, the number of publications increased more consistently, coinciding with the development of the Islamic financial technology (*financial technology*) ecosystem, as well as increasing internet penetration and mobile device use in Indonesia. Research during this period began to associate Islamic finance digitalisation with financial inclusion, SME empowerment, and the reduction of social inequality [8] A more substantial increase in scientific production was observed during 2019–2021, driven primarily by two factors: national regulatory support for the Islamic digital economy and the acceleration of digitalisation during the COVID-19 pandemic. Research during this phase expanded beyond institutional aspects to empirically examine socio-economic impacts, including improved welfare, greater financial inclusion among unbanked communities, and the effectiveness of digital zakat and waqf [9] [10]. In the most recent period, 2022–2024, publication output remained high and relatively stable, while research became more in-depth through the application of quantitative methods, *mixed methods*, and bibliometric approaches. The dominant topics included the integration of digital Islamic finance policies, *Islamic social finance*, and the role of digital technology in supporting the achievement of the Sustainable Development Goals (SDGs) in Indonesia [11].

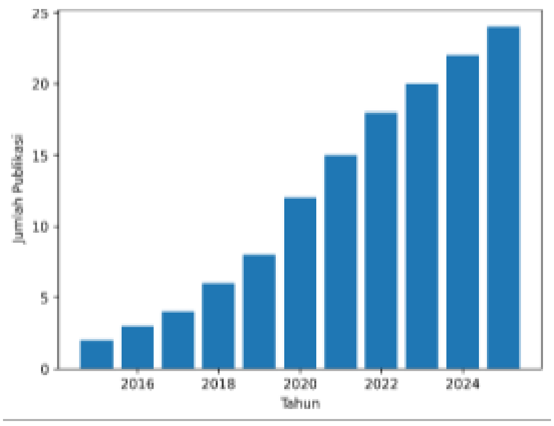

Figure 1. Trends in Islamic Digital Finance Publications (2015 - 2025

Citation analysis

Citation analysis was conducted to identify patterns of scholarly influence, the most frequently cited works, and the key intellectual contributors in research on Islamic finance digitalisation and its socio-economic impacts. Citations are considered an important

indicator for assessing the relevance, quality, and contribution of publications to the development of a particular academic field [12] [13]. Based on the citation network generated through bibliometric analysis, publications focusing on *financial inclusion, Islamic fintech,* and *Islamic social finance* received relatively high citation rates. This indicates that these themes have become central areas of research within the field of digital Islamic finance. Studies linking digitalisation with economic empowerment, poverty alleviation, and sustainable development also tend to have greater academic impact [14] .
Furthermore, the citation analysis reveals a strong connection between internationally and nationally reputable journals. Scopus-indexed Q1–Q2 journals serve primarily as key sources of theoretical and methodological foundations, while SINTA S1–S3 journals make significant contributions to empirical studies in the Indonesian context. This pattern indicates a two-way flow of knowledge, in which global frameworks are applied and further examined within the local Indonesian context [15]. In terms of authorship, several researchers emerge as *key authors* with relatively high citation levels, particularly those who consistently investigate the integration of Islamic finance, digital technology, and socio-economic development. The presence of this *core literature* strengthens the intellectual structure of the field and provides an important foundation for further research [16].

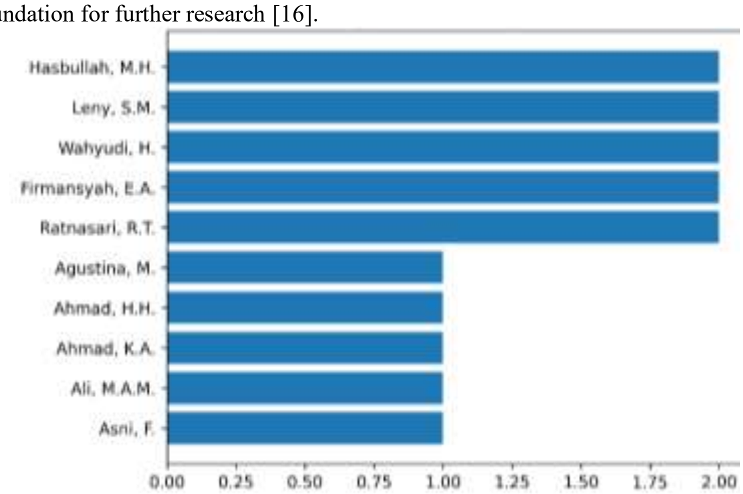

Figure 2. Top 10 Authors in Islamic Digital Finance Research

The analysis shows that several authors, including Hasbullah, M.H., Leny, S.M., Wahyudi, H., Firmansyah, E.A., and Ratnasari, R.T., have a relatively higher number of publications compared to other authors. The prominence of these authors indicates a consistent research agenda focusing on Islamic finance digitalisation, Islamic financial inclusion, and its implications for the social and economic development of society. In bibliometric studies, author productivity is often associated with the level of specialization and the continuity of academic contributions within a particular field [15].

Furthermore, the presence of authors with only one publication among the top 10 most productive authors indicates that the field of Islamic finance digitalisation in Indonesia remains open and continuously evolving, providing opportunities for contributions from researchers across different institutions. This pattern reflects the characteristics of an emerging research field, in which collaboration and diverse perspectives play an important role in enriching the literature [12]. Overall, the analysis of the most productive authors demonstrates that research on the socio-economic impacts of Islamic finance digitalisation in Indonesia is not concentrated within a single researcher or institution but continues to develop through the collective contributions of various scholars.

Keyword co-occurrence analysis and Country analysis

Based on the mapping results, 167 keywords were identified and categorized into 16 clusters, with a total of 748 links and a total link strength of 870. These findings indicate a relatively high level of conceptual interconnectedness among the research variables, suggesting that research on Islamic finance digitalisation is multidisciplinary and closely connected to economic, technological, social, and institutional issues. This finding is consistent with the bibliometric literature, which emphasizes that the density of relationships among keywords reflects the maturity and complexity of a research field [17].

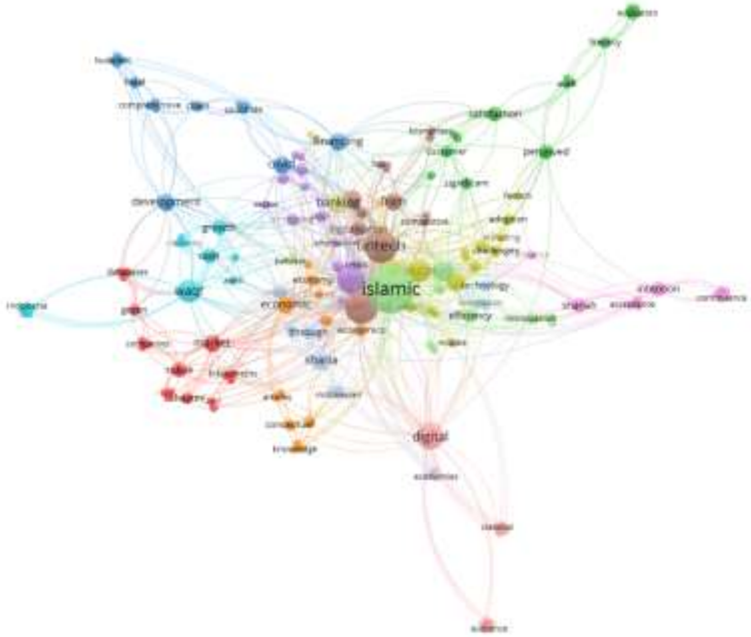

Figure 3. Network Visualization

The network visualization shows that the keywords "Islamic," "digital," "fintech," "banking," and "sharia" occupy central positions, with the largest nodes and the strongest link strengths. This indicates that the main focus of the literature is on the integration of digital technology into the Islamic financial system, particularly through Islamic fintech and digital banking. This finding is consistent with previous studies highlighting digital transformation as a key catalyst for improving the efficiency, inclusion, and competitiveness of Islamic financial institutions (Peter Gomber, 2017) [19].

Another cluster includes the themes "socio-economic," "economic development," "financial inclusion," and "efficiency," indicating substantial academic attention to the socio-economic impacts of Islamic finance digitalisation. The connections among these keywords suggest that digitalisation is not only viewed as a technological innovation but also as a policy instrument for promoting inclusive economic growth and improving social welfare, particularly in developing countries such as Indonesia [20] [21] In addition, the analysis identifies a specific cluster related to "zakat," "waqf," "microfinance," and "social finance." The presence of this cluster reflects growing academic interest in the role of digitalisation in optimising Islamic social finance instruments. The integration of technology is considered capable of improving the transparency, accountability, and distribution reach of zakat and waqf, thereby strengthening their contribution to poverty alleviation and socio-economic development [13] [10].

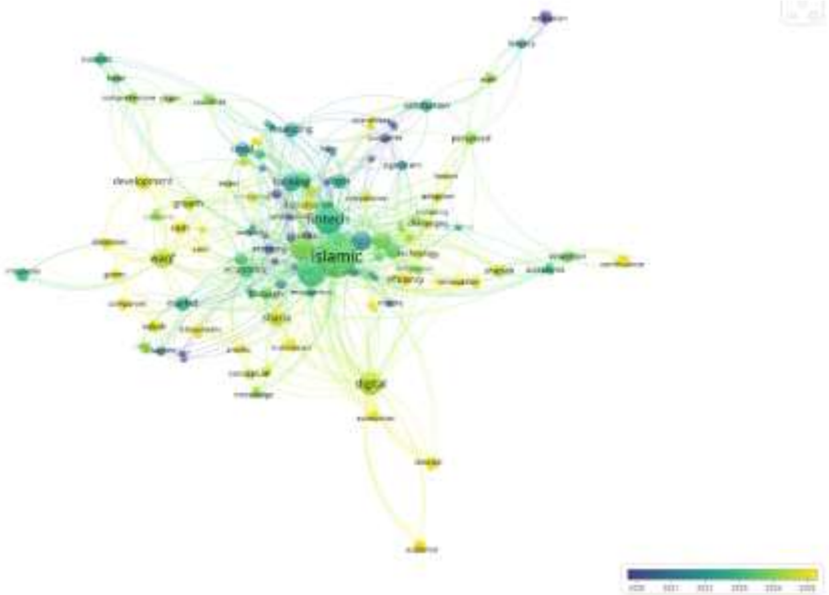

Figure 4. Overlay Visualization

Based on the overlay visualization, keywords displayed in lighter colors (yellow), such as "fintech," "digitalisation," "innovation," and "financial inclusion," represent relatively recent topics that have developed rapidly in recent years. This pattern indicates a shift in research focus from conceptual approaches toward more empirical studies examining the implementation of digital technology in Islamic finance. This trend is consistent with the acceleration of digital financial technology adoption following the COVID-19 pandemic, which has significantly driven the transformation of financial services [22] [23][24] [5]. In contrast, keywords displayed in darker colors (blue-green), such as **"**banking," "sharia," and "economic**,"** represent fundamental themes that have long served as the foundation of research and continue to support the development of emerging research topics. This pattern highlights the continuity between classical Islamic finance theories and contemporary digital innovations [25] [26].

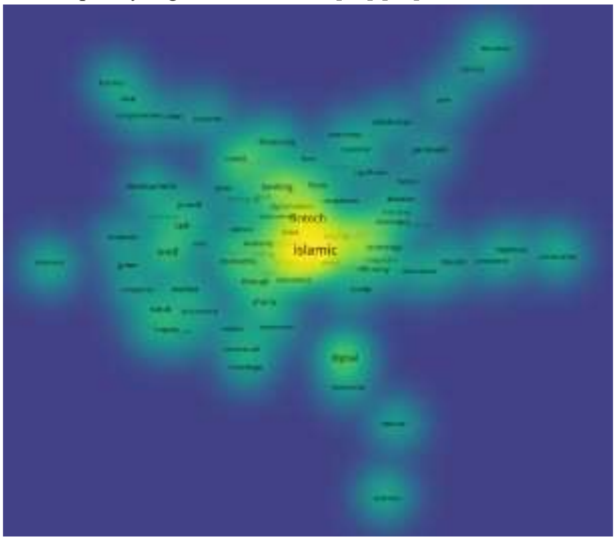

Figure 5. Density Visualization

Based on the density visualization, the areas with the highest intensity are concentrated around the keywords **"**Islamic," "financial," and "digital,**"** indicating that these three concepts represent the main axes of the analyzed literature. The high density in these areas reflects the strong research intensity and potential for further studies, particularly in evaluating the impact of Islamic finance digitalisation on socio-economic welfare indicators in Indonesia. These findings further support the argument that future research should integrate quantitative and qualitative approaches to measure the actual impact of digitalisation on financial inclusion, SMEs, and sustainable development [11] [16].

Thematic analysis

Based on the scoping review and bibliometric analysis, research on Islamic finance digitalisation and its socio-economic impacts in Indonesia has developed through several interconnected themes. Early studies primarily focused on technology adoption in Islamic banking and service efficiency, which later expanded to Islamic fintech, financial inclusion, SME empowerment, and social inequality. The keyword co-occurrence analysis identifies *Islamic, digital, fintech, banking,* and *sharia* as central themes, while *socio-economic, economic development, financial inclusion,* and *efficiency* reflect growing attention to the broader socio-economic implications of digitalisation. Recent research has increasingly emphasized *digitalisation, innovation, fintech,* and *financial inclusion*, alongside *zakat, waqf, microfinance, and Islamic social finance*, indicating greater interest in the digital transformation of Islamic social finance. However, studies directly measuring the broader impacts of Islamic finance digitalisation on welfare, poverty alleviation, SME development, and sustainable development remain relatively limited. Future research should therefore strengthen empirical investigations by integrating quantitative and qualitative approaches to assess the actual socio-economic impacts of Islamic finance digitalisation in Indonesia.

CONCLUSIONS

This study concludes that research on Islamic finance digitalisation and its socio-economic impacts in Indonesia has experienced substantial growth and increasing thematic diversity. The findings from the scoping review and bibliometric analysis indicate that the research landscape has evolved from an initial focus on digital technology adoption in Islamic banking toward broader issues of Islamic fintech, financial inclusion, SME empowerment, Islamic social finance, and sustainable development. The keyword analysis further confirms the strong interconnectedness of digitalisation with economic, social, technological, and institutional dimensions. Although recent studies increasingly examine the role of digitalisation in strengthening financial inclusion and Islamic social finance, empirical evidence concerning its direct effects on social welfare, poverty alleviation, SME development, and sustainable development remains limited. Therefore, future research should move beyond technology adoption and further investigate the measurable socio-economic outcomes of Islamic finance digitalisation in Indonesia through stronger empirical and mixed-method approaches.

REFERENCES

[1] M. N. Hoque and M. Bin Hitam, “Revolutionising higher education funding in Malaysia : unleashing the power of crowdfunding mechanism,” *Qual. Res. Financ. Mark.*, no. September, 2026, doi: 10.1108/QRFM-09-2024-0268.

[2] P. Constable, “Wealth and well-being : Buddhist Economics , right livelihood and developmental corporate social responsibility in Thailand,” vol. 39, no. 6, pp. 925–954, 2026, doi: 10.1108/AAAJ-07-2025-8147.

[3] Z. Sjamsir, M. I. Saleh, and A. Khaeriyah, “Hybrid financing model for rice agribusiness : comparative evidence from South Sulawesi and Sabah,” *J. Agribus. Dev. Emerg. Econ.*, 2026, doi: 10.1108/JADEE-03-2026-0210.

[4] D. W. Arner, “FINTECH AND REGTECH : ENABLING INNOVATION WHILE PRESERVING FINANCIAL STABILITY D OUGLAS W A RNER , D IRK A Z ETZSCHE , R OSS P B UCKLEY,” *Georg. J. Int. Aff. 47-58*, vol. 18, no. 3, pp. 47–58, 2017.

[5] B. Faso *et al.*, “Supporting Countries in Unprecedented Times,” 2020.

[6] A. W. J. D. USUKI, “Maqasid al-Shari`ah, Maslahah, and Corporate Social Responsibility (2007),” *Am. J. Islam SOCIE t Y*, vol. 1, no. 1, pp. 40–65, 2007, doi: 10.35632/ajis.v41i1.3417.

[7] M. M. Alshater, “Islamic Banking : Past , Present and Future,” *J. Coll. Sharia Islam. Stud.*, vol. 41, no. 1, pp. 193–222, 2023.

[8] A. Demirguc-kunt, L. Klapper, and N. Prasad, “How Unequal Access to Public Goods Reinforces Horizontal Inequality in India.”

[9] D. Basnayake, A. Naranpanawa, S. Selvanathan, and J. S. Bandara, “Financial inclusion and institutional quality : Catalysts for economic growth in Asia-Pacific countries,” vol. 37, no. February, 2025.

[10] B. A. Z. N. (BAZNAS), *Panduan Teknis Pendayagunaan Zakat, Infak, Sedekah (ZIS) Untuk Layanan Air Minum Dan Sanitasi Layak Dan Aman*. 2020.

[11] U. Nations and D. Programme, “Annual report 2022,” 2022.

[12] S. Kraus and S. Dasí-rodríguez, “The art of crafting a systematic literature review in entrepreneurship research Content courtesy of Springer Nature , terms of use apply . Rights reserved . Content courtesy of Springer Nature , terms of use apply . Rights reserved .,” *Int. Entrep. Manag. J.*, vol. 16, pp. 1023–1042, 2020.

[13] A. Ascarya, “Developing cash waqf models for Baitul Maal wat Tamwil as integrated Islamic social and commercial micro fi nance,” *J. Islam. Account. Bus. Res.*, vol. 14, no. 5, pp. 699–717, 2026, doi: 10.1108/JIABR-09-2020-0267.

[14] A. Ascarya and A. Sakti, “Designing micro- fi ntech models for Islamic micro fi nancial institutions in Indonesia,” no. September, pp. 236–254, 2026, doi: 10.1108/IMEFM-05-2020-0233.

[15] Y. Diantimala, S. Syahnur, R. Mulyany, and F. Faisal, “Firm size sensitivity on the correlation between financing choice and firm value,” *Cogent Bus. Manag.*, vol. 8, no. 1, pp. 1–19, 2021, doi: 10.1080/23311975.2021.1926404.

[16] S. T. Naskar, “Organisational capability trajectories in contemporary resource-based view (RBV) scholarship : a field-level bibliometric , structural and thematic synthesis (2021 – 2025),” *Int. J. Organ. Anal.*, vol. 34, no. February, 2026, doi: 10.1108/IJOA-02-2026-6545.

[17] C. Trigui and Y. M. Fourati, “Digitalization , auditing and performance : a bibliometric review and research agenda,” *J. Financ. Report. Account.*, no. September, 2026, doi: 10.1108/JFRA-03-2026-0264.

[18] PETER GOMBER, “On the Fintech Revolution : Interpreting the Forces of Innovation , Disruption and Transformation in Financial Services,” no. 3, 2017.

[19] A. M. Hassan, L. Roberts, and J. Atkins, “Exploring factors relating to extinction disclosures : What motivates companies to report on biodiversity and species protection ?,” *Bussiness Strateg. Enviroment*, no. June 2019, pp. 1–18, 2020, doi: 10.1002/bse.2442.

[20] H. E. Beck, N. E. Zimmermann, T. R. Mcvicar, N. Vergopolan, A. Berg, and E. F. Wood, “Data Descriptor : Present and future Köppen-Geiger climate classi fi cation maps at 1 -km resolution,” *Nat. Publ. Gr.*, pp. 1–13, 2018, doi: 10.1038/sdata.2018.214.

[21] R. Sahay *et al.*, *The Promise of Fintech: Financial Inclusion in the Post COVID-19 Era*. 2020.

[22] P. K. Ozili, “Theories of financial inclusion,” pp. 1–23, 2020.

[23] C. Calvo-Porral, A. Faíña-Medín, and M. Nieto-Mengotti, “Exploring technology satisfaction: An approach through the flow experience,” *Comput. Human Behav.*, vol. 66, pp. 400–408, 2017, doi: 10.1016/j.chb.2016.10.008.

[24] N. Perdana, “OJK Sebut Gen Z Rentan Terjerat Pinjol, Mayoritas demi Gaya Hidup Konsumtif,” 2025. .

[25] muhammad umer Chapra, *The IslamicVision ofDevelopment in the Light of Maqashid al Shariah*. 2008.

[26] K. M. Khatun and H. Alautiyat, “Corporate Social Responsibility : An Islamic Perspective,” *Int. J. Bus. Technopreneursh.*, vol. 2, no. 3, pp. 415–434, 2012.