



Article

Islamic Digital finance: Technology to Enhance Financial Systems to be more Inclusive and Equitable

¹ Siti Nur Aisyah, ² Mardhiyaturrositaningsih

^{1,2} Universitas Islam Negeri Walisongo Semarang, Indonesia

*Corresponding author: aisyah14200403@gmail.com

ABSTRACT

This study investigates the role of digital technology in efforts to increase the inclusiveness of the Islamic economy. This research uses a qualitative approach by analyzing case studies. The results of this study will provide insights into the transformative potential of digital finance within an Islamic framework for all levels of society, paving the way for a more inclusive and equitable financial ecosystem. The results of case studies on Islamic Banks show that banks utilize digital technology in products and services both commercial and non-commercial such as zakat infaq sadaqah.

Keywords: *Digital Technology, Inclusive Financial System, Islamic Bank*

JEL Classification: A15, B12, V6

How to cite: Aisyah S. N. & Mardhiyaturrositaningsih. (2024). Islamic Digital finance: Technology to Enhance Financial Systems to be more Inclusive and Equitable. *Proceeding International Conference on Islamic Economics and Business (ICIEB), 2024, 3(1)*, pp. 143-159. DOI: <https://doi.org/10.14421/icieb.2024.3.1.1494>

INTRODUCTION

Digitalization not only offers a positive impact on life. However, along with that, the digital era also brings many negative impacts that create new problems for life. This problem covers various fields, including defense, security, economics, socio-culture and information technology. The world has changed significantly with advances in digital technology today, with the emergence of various digital innovations. Currently, various levels of society can easily obtain information in various ways and freely utilize the benefits of digital technology.

Due to the impact of globalization, the era of digitalization has become an unavoidable necessity for current progress. One of the main approaches to changing the Indonesian economy is to develop a digital economy. The shift in people's behavior towards the use of digital platforms in various industries is also a driving factor in the growth of the digital economy (Alfiani et al., 2022). People in the modern era can transact, communicate and share data more efficiently and effectively. For example, digital technology enables the development of applications that increase efficiency, save time and improve the quality of life.

This technology allows the use of better information management systems, faster electronic payment systems, and more interactive education systems (ardiansyah, 2023).

There will always be challenges in any technological development, including regulatory challenges and the lack of financial literacy among users of these technological advancements. However, the integration of technology in Islamic finance promises to expand access to financial services, ultimately contributing to a more equitable financial landscape.

Technological developments are increasingly encouraging increased innovation in the financial sector in Indonesia, where this needs to be supported by good public literacy. The public must be able to understand the characteristics of digital financial products, which include benefits, risks, costs, consumer rights and obligations, and ensuring the legality of financial service providers is important before using digital financial services (OJK, 2023). Based on We Are Social 2023 data, Indonesian internet users reach 77 percent of the total population or 212.9 million people. This shows that many Indonesian people use the internet in their daily lives.

On the other hand, the results of the national survey on financial literacy and inclusion (SNLIK) in 2022 in 34 provinces covering 76 cities/districts show that the Indonesian people's financial literacy index is 49.68 percent, an increase compared to 2019 which was only 38.03 percent. Meanwhile, this year's financial inclusion index reached 85.10 percent, an increase compared to the previous SNLIK period in 2019, namely 76.19 percent. This shows that the gap between the literacy level and the inclusion level is decreasing, from 38.16 percent in 2019 to 35.42 percent in 2022. SNLIK 2022 also measures the level of sharia financial literacy and inclusion. The results obtained show

that the sharia financial literacy index of the Indonesian people increased from 8.93 percent in 2019 to 9.14 percent in 2022. Meanwhile, the level of sharia financial inclusion also showed an increase to 12.12 percent in 2022 from the previous 9, 10 percent in the 2019 survey period. These results indicate that sharia financial literacy and inclusion are still quite low when compared to national literacy and inclusion levels (OJK, 2022).

Digital Finance combines financial knowledge with modern technology. This will give you a competitive edge in the world of finance. Digital finance has changed the way businesses operate and interact with customers and business partners. By understanding and applying digital finance principles, businesses can optimize efficiency, increase financial accessibility, and gain competitive advantage in an increasingly digital business environment (Fuad, Muhammad, et al, 2023).

Research conducted by Muhammad (2022) shows that a good understanding of digital finance can reduce poverty levels and achieve financial inclusion, Nurrohmah (2023) shows that financial technology plays an important role in strengthening the financial sector and supporting wider financial inclusion. Ibrahim and Ahmet (2022) identify blockchain in increasing Islamic financial opportunities.

LITERATURE REVIEW

Sharia financial inclusion can be interpreted as ease of access, affordability, ease of service procedures and utilization or use of products and services by the community in the sharia financial sector which includes: sharia banking, sharia insurance, sharia pawnshops, sharia pension funds, sharia financing institutions and capital markets. Sharia (Miftakhul Khasanah, 2019). The growth of Islamic finance presents important opportunities to strengthen financial inclusion, deepen financial

markets, and mobilize funding for development by offering new financial modes and attracting populations who do not have bank accounts and do not yet participate in the financial system.

Inclusive finance is able to provide many benefits that can be enjoyed by society, regulators, government and the private sector, including increasing economic efficiency, supporting financial system stability, reducing shadow banking or irresponsible finance, supporting financial market deepening, providing new market potential for banking, supporting the increase in Indonesia's Human Development Index (HDI), contributing positively to sustainable local and national economic growth, reducing inequality and the rigidity of the low income trap, so as to improve community welfare which ultimately leads to a reduction in poverty levels (Bank Indonesia, 2021).

Islamic digital finance is an integration between Islamic financial principles and digital technology. This concept aims to create a more inclusive and fair financial system, which is in line with Islamic ethical values. This literacy will review various aspects of Islamic digital finance, including the challenges and opportunities that exist, as well as how technology can support financial inclusion and justice.

Islamic digital finance has great potential to create a more inclusive and fair financial system. By utilizing technology such as fintech, blockchain, and smart contracts, Islamic financial principles can be applied more effectively and efficiently. However, challenges related to regulation, compliance and financial literacy must be overcome to achieve this goal. Collaboration between various parties and good education are the keys to realizing the full potential of Islamic digital finance.

Hidayat, M. S., Sujianto, A. E., & Asiyah, B. N. (2023). Explaining that blockchain-based

technology can support sharia principles so that they remain implemented by regulating transactions in accordance with applicable sharia principles and increasing transparency in the financial system. Not only that, blockchain-based technology can also increase financial security by using encryption and very strict access controls. Implementing this technology also has the potential to increase financial inclusion by providing access to safe and efficient financial services and creating innovative solutions that are useful for strengthening a fair, transparent and inclusive sharia financial sector in the digital era.

Kurniawan, Muhammad Rizky Dwi, and Fauzatul Laily Nisa (2024) explaining that the many updates in technology such as sharia fintech, blockchain, sharia crowdfunding have had a good influence on the financial sector. By collaborating with the E-Commerce marketplace, these technologies increase access to financial services, transparency and efficiency in financial transactions, especially digital financial transactions. The sharia economy which utilizes innovation in the field of technology is very influential and contributes to creating an economic system that is inclusive and sustainable, and benefits all levels of society.

METHODOLOGY

This research method uses qualitative research. This research was conducted by identifying the implementation of digital financial products and services at 9 Islamic Commercial Banks in Indonesia. The research data source was collected from the annual reports of Islamic banks for the 2021-2023.

RESULT AND DISCUSSION

Bank Aceh Syariah

Bank Aceh continues to diversify its products and services to meet the needs of various customers. 2023 will be an important year for Bank Aceh in its business and service development

efforts. By combining digital innovation and support for Micro, Small and Medium Enterprises (MSMEs), it has had a positive impact on the economy and society in Bank Aceh's work area. Bank Aceh's efforts to provide a digital platform for various financial products and services specifically designed to support the growth of MSMEs have provided wider access for MSME players to develop and compete effectively in the market. By combining the concepts of digitalization, MSME empowerment and service development, Bank Aceh is committed to continuing to play an active role in supporting local economic growth and making positive contributions to the people of Aceh.

Bank Aceh's strategy in encouraging digitalization includes launching a number of products such as debit cards, QRCode Indonesian Standard (QRIS), Cash Recycle Machines (CRM) in every district/city, and various new features in the Action application (Mobile Banking Bank Aceh). Through digital innovation that has been implemented by Bank Aceh, it is hoped that it can provide convenience for customer service and encourage the creation of a healthy and good business climate so that it can encourage growth in the performance of Bank Aceh and the regional economy in Nangroe Aceh Darussalam Province.

Bank Victoria Syariah

The rapid development of Information Technology has changed business processes and service models provided by Banks to consumers. Changes in the banking landscape are driven by changes in people's economic behavior which is increasingly moving towards digital, so digital transformation is one of the steps taken by the Bank to be able to provide products and services in accordance with consumer needs. Consumer demands for complete and safe digital-based

services have resulted in the Bank's high dependence on the use of Information Technology in all its operational activities. The Information Technology Development Plan implemented by Bank Victoria Syariah, was prepared in order to face the challenges of developing banking industry technology in accordance with the needs and standards provided by the regulator, but still paying attention to potential risks that will occur. Current banking service operations are greatly influenced by the development of digital technology which provides banking services in real time, on-demand, on-line, utilizing social media and digital banking services carried out by customers themselves. Bank Victoria Syariah continues to strive to develop sharia-based products to provide solutions, both for trustworthy banking and investment services as well as strengthening the capacity and capability of the Information Technology infrastructure.

Therefore, Bank Victoria Syariah is fully improving the quality of the Information Systems applied to support the strategies needed by the Bank in building a business foundation. Information systems are also needed to integrate business processes, which will provide benefits not only for customers but also for future business development. external knowledge, maintenance support Information Technology Development in 2023 is aimed at supporting corporate business plans with a focus on all aspects, both in terms of infrastructure, organization, competence and work ethic, increasing productivity and mitigating risks as well as improving data management capabilities and information security in order to improve quality and the reliability of Information Technology services can be implemented consistently. As well as participating in Synergy innovation involving several company groups.

Bank Mega Syariah

The challenges and dynamics of economic conditions encourage Bank Mega to closely monitor its performance. Bank Mega has decided to prepare to refocus its business strategy. In this way, Bank Mega will be able to grow sustainably in the future by aligning its business strategy focus to empower all its strengths and resources. The Bank is committed to continuing to develop digital services continuously, so that it can become a one stop financial service by utilizing the CT Corp ecosystem.

Bank Mega's continuous digital innovation has succeeded in increasing the number of M-Smile users. The number of M-smile users in 2023 will reach more than 54% of total retail customers or an increase of 18% from 2022. Bank Mega has launched a mobile banking application entitled M-Smile on April 15 2020. This application makes it easy for customers to access Bank information and services in one hand. M-Smile provides various features including digital account onboarding, mutation information, billing, cardless cash withdrawals, transfers, payments, purchases, electronic money top ups, use of QRIS with MPM, CPM and TTM methods. M-Smile has provided real-time interbank transfer services without fees through the BI-Fast feature. Apart from these features, the flexibility of credit card services at M-Smile is further enhanced by the digital credit card application feature. Thus, customers no longer need to wait for a physical card to make transactions. Apart from that, there is also a feature to cash out your credit card limit into cash. Until 2023, the M-Smile feature will have 103 features to carry out 733 types of transactions. With the addition of these features, banking transactions carried out by customers via the M-Smile application have reached 81% in terms of transaction frequency. The number of M-smile users in 2023 will reach more than 54% of total retail customers or an increase of 18% from 2022. In 2023 the volume of customer transactions via M-

Smile shows a good increase to IDR 36.34 trillion from IDR 20.97 trillion in 2022. Meanwhile, the total frequency of transactions in 2023 will increase to 9.0 million compared to 2022 which was 5.7 million transactions.

Bank Mega is also participating in the digital payment transformation in line with Bank Indonesia's steps. Bank Mega was even one of the first banks to implement payments via QRIS MPM and CPM, QRIS transfer, withdrawal, deposit, QRIS cross border, and BI-Fast.

Bank Syariah Indonesia

The Bank continues to innovate digital-based products and services that prioritize convenience, speed, security, human resources, security improvement, and end-to-end standardization. To realize all commitments in the IT sector, throughout 2023 the Bank has realized an investment of IDR 967 billion. BSI continues to innovate digital-based products and services to meet the needs of today's society which prioritizes speed, convenience and security in transactions which are strengthened by IT system capabilities, end to end standardization, security improvement and human resources.

IT planning and development within BSI, one of which is through modernizing core banking as well as strengthening business and digital banking, is an effort to support the achievement of the Bank's strategy. The Bank's IT development is carried out with the concept of "7+ IT Stars" (Strategic Action and Programs), which includes: Security, Risk, and Fraud Establishing and improving security perimeters, risk management, fraud, and anti-money laundering (AML) to protect customers and banking. Corporate Governance Corporate Social Responsibility, Core System Modernization Financial Reports Implementation of the core banking modernization initiative is to simplify the system, improve core functions, and enable the next generation of core banking to support banking products and services,

Infrastructure & Connectivity Establishment and improvement of infrastructure and connectivity tools, applications, and hardware that combines various technologies to support the Bank's business. Integrated Data Management Monitoring and Reporting Establishment and improvement of enterprise data warehouse and big data analysis to enable data-as-a-service as well as information management tools used by employees to monitor and report independently. Organization, Corporate Support & Internal Improvements Establishment and improvement of core company functions to support Bank operations and internal processes as well as organizational improvements. Unified Platform & Customer 360 One main platform to accommodate all workflow capabilities assisted by increased data centers and integrated customer services (customer relationships) in the areas of sales, marketing and campaign management to increase customer engagement. Digital Expansion & Open Banking Improvement and expansion of digital distribution networks, sales, omni-channel services including increasing integration capabilities with various methods and strategies to enable open banking with seamless and secure connectivity internally and externally.

Muamalat Bank

The Bank continues to carry out digital development through the Muamalat Digital Islamic Network (MDIN) in response to the development of customer needs for digital banking and the rapid growth of digital transactions. Thus, this initiative can increase the Bank's competitiveness in the industry. Furthermore, the Bank has improved digital services by collaborating in selling Umrah packages via a microsite which can be accessed via Muamalat DIN. The Bank has optimized digital banking features and services through MDIN and MADINA CMS in order to increase feebased income growth. Launched the newest mobile banking application, namely Muamalat Digital Islamic Network (DIN), which is equipped with various new features designed to carry out financial

and non-financial transactions in real time with safer features. The Bank prepares human resources who have reliable competence, high integrity and are productive. These reliable human resources manage the running of a digital technology-based organization so that it can achieve the goals that have been set and be ready to face the era of digital revolution 4.0.

The Shar-e Gold Debit Visa product, which was launched in 2011, succeeded in receiving an award from the Indonesian Record Museum (MURI) as the first sharia debit card with chip technology in Indonesia as well as e-channel services such as internet banking, mobile banking, ATM and cash management.

BCA Syariah

BCA Syariah digital transactions in the development of the online account opening feature reached 268,062. mobile banking transactions 9.9 million transactions, Facing future challenges, BCAS will continue to maintain its growth rate. Our strategic focus in 2024 is directed at increasing the number of customers and CASA composition, expansive but prudent financing distribution, supported by the capacity and capability of human resources and strong IT infrastructure as well as corporate governance practices with global standards. We are also committed to expanding access and affordability of services through various digital solutions, both fund and financing products. BCAS continues to develop e-channels to support ease of customer transactions. Responding to customer needs, BCA Syariah Mobile has implemented an online account opening feature as we have previously stated. This feature has been proven to be able to encourage growth in the number of new customers and new users of BCA Syariah Mobile. The number of BCA Syariah Mobile users in 2023 will reach 373.7 thousand users, an

increase of 267.6% compared to 2022 which was 101.7 thousand users.

Maybank Syariah

The performance of digital economic and financial transactions remains strong, supported by a safe, smooth and reliable payment system. In 2023, the digital banking transaction value was recorded at IDR 58,478.24 trillion or grew by 13.48% (yoy) and is projected to increase 9.11% (yoy) to reach IDR 63,803.77 trillion in 2024. Meanwhile, the transaction value Electronic Money (EU) increased 43.45% (yoy) to reach IDR 835.84 trillion and is projected to increase 25.77% (yoy) to reach IDR 1,051.24 trillion in 2024.

These figures underscore the rapid expansion of digital financial services in Indonesia, reflecting both the country's growing reliance on digital transactions and the government's efforts to enhance financial inclusion through innovative payment systems like the Quick Response Code Indonesian Standard (QRIS), which has seen a remarkable 130% yoy increase in usage. The strong performance of digital transactions is also supported by Indonesia's demographic structure, characterized by a predominantly young population that is technologically savvy and accustomed to conducting transactions through digital means. As a result, Indonesia is poised to continue its rapid digital economic growth, with e-commerce transactions reaching Rp 453.75 trillion (\$29 billion) in 2023 and projected to maintain robust growth in the coming years.

BJB Syariah

PT Bank Jabar Banten Syariah, or bank bjb syariah, continues to strive to maintain sustainable performance growth through digital innovation and service improvements. The bank's commitment to digital transformation is evident in its development of digital products and the digitization of business

processes, support, and operations. One of the key initiatives is the enhancement of digital onboarding, allowing customers to open accounts quickly and easily through mobile applications.

Additionally, the bank is transforming its transaction processes, aiming to move towards a digital hybrid banking model that seamlessly integrates traditional banking services with cutting-edge digital technologies. This strategic move aligns with the bank's corporate plans, ensuring that it remains competitive and responsive to the evolving needs of its customers in the rapidly digitizing financial landscape. By leveraging innovative technologies such as QR Code GPN, chatbots, and face recognition, bank bjb syariah is poised to provide a new experience for its customers, enhancing financial inclusion and efficiency while maintaining Shariah compliance. The bank's efforts are also supported by the Indonesian government's initiatives to accelerate digitalization in the financial sector, further solidifying its position as a leader in Islamic digital finance

Bank Bukopin Syariah

The Company is actively developing a consumer system, particularly to accelerate the business process of applying for Home Ownership Financing (Loan Origination System). This initiative is part of a broader strategy to enhance the Bank's existing services related to e-Banking, laying the groundwork for further digital banking development in the future. The integration of innovative technologies such as QR Code GPN, chatbots, account opening, face recognition, and other advanced features aims to provide a seamless and modern experience for the Company's customers. To cater to diverse customer needs, the Bank is also developing funding products that leverage technology, including Cash Management, Virtual Accounts, Online Savings Plans (SPP), SMS Banking, and Mobile Banking. These digital

solutions are designed to increase financial inclusion, streamline transactions, and enhance overall customer satisfaction. By combining cutting-edge technology with Shariah-compliant financial practices, the Bank aims to create a robust and user-friendly platform that supports the growing demand for digital financial services, ultimately contributing to a more inclusive and equitable financial ecosystem.

CONCLUSION AND RECOMMENDATION

The conclusion from the results of this research shows that financial inclusion can be created through the use of digital technology. Islamic Commercial Banks implement digital finance in products and services. Banks use digital technology not only to achieve commercial profits but also non-commercial ones such as providing

zakat, infaq and shadaqah via digital. Technology e-channel services such as internet banking, mobile banking, ATM and cash management. Digital technology means more people can use and benefit from available products and services. At Islamic Bank digitalization is developed in infrastructure and human resources. Digital financial products and services in sharia banking are aimed at customers.

This research is limited to the implementation of digital technology in the Islamic banking sector. It is expected that in the future this research can be continued to further refine previous research. in accordance with the number of Islamic general banks in Indonesia. Further research can be carried out on other sharia financial institutions such as sharia capital markets, sharia insurance, and others.

REFERENCES

- Alam, N., & Nazim, S. (2021). *Fintech, digital currency and the future of Islamic finance*. Cham: Springer International Publishing.
- Ardiansyah, W. M. (2023). Peran Teknologi dalam Transformasi Ekonomi dan Bisnis di Era Digital. *JMEB Jurnal Manajemen Ekonomi & Bisnis*, 1(1).11–22.
- Ashraf, D. (2023). Digital Finance and Artificial Intelligence: Islamic Finance Challenges and Prospects. *Islamic Finance, FinTech, and the Road to Sustainability: Reframing the Approach in the Post-Pandemic Era*, 241-258.
- Aysan, A. F., & Unal, I. M. (2021). Is Islamic finance evolving Into FinTech and blockchain: A bibliometric analysis. *Efil Journal of Economic Research*.
- Busari, S. A., & Aminu, S. O. (2021). Application of blockchain information technology in Şukūk trade. *Journal of Islamic Accounting and Business Research*, 13(1), 1-15.
- Bank Indonesia, Keuangan Inklusif diakses melalui <https://www.bi.go.id/id/fungsi-utama/stabilitas-sistem-keuangan/keuangan-inklusif/default.aspx> pada 22 Januari 2021
- Banna, H., Hassan, M. K., Ahmad, R., & Alam, M. R. (2022). Islamic banking stability amidst the COVID-19 pandemic: the role of digital financial inclusion. *International Journal of Islamic and Middle Eastern Finance and Management*, 15(2), 310-330.
- Chong, F. H. L. (2021). Enhancing trust through digital Islamic finance and blockchain technology. *Qualitative Research in Financial Markets*, 13(3), 328-341.
- Febriyansyah, H. A. (2022). Analisis penggunaan Fintech aplikasi Flip untuk menghindari biaya administrasi transfer antar bank dalam tinjauan keuangan syariah: Studi pada Koperasi Mahasiswa Padang Bulan Universitas Islam Negeri Maulana Malik Ibrahim Malang (Doctoral dissertation, Universitas Islam Negeri Maulana Malik Ibrahim).

- Hasan, R., Hassan, M. K., & Aliyu, S. (2020). Fintech and Islamic finance: Literature review and research agenda. *International Journal of Islamic Economics and Finance (IJIEF)*, 3(1), 75-94.
- Hidayat, M. S., Sujianto, A. E., & Asiyah, B. N. (2023). Mengkaji Sistem Keuangan Berbasis Teknologi Blockchain dalam Ekonomi Moneter Islam. *MUQADDIMAH: Jurnal Ekonomi, Manajemen, Akuntansi Dan Bisnis*, 1(3), 244-262.
- Hidayat, S. E., Izharivan, Y., & Sari, C. A. (2021). Islamic finance and sustainable economy: A new model of islamic financial ecosystem. *Islamic Finance and Sustainable Development: A Sustainable Economic Framework for Muslim and Non-Muslim Countries*, 265-284.
- KK, A. S. R., & Maharani, H. N. (2023). Inovasi Dan Pengembangan Produk Keuangan Syariah: Tantangan Dan Prospek Di Era Revolusi Industri 4.0. *Jurnal Ilmiah Edunomika*, 8(1).
- Kurniawan, M. R. D., & Nisa, F. L. (2024). Analisis Inovasi Dan Implementasi Peran Ekonomi Syariah Dalam Menghadapi Era Digital. *JURNAL EKONOMI BISNIS DAN MANAJEMEN*, 2(3), 127-133.
- Katterbauer, K., Syed, H., & de Kiev, L. C. (2022). An innovative AI Blockchain framework for Islamic microfinancing. *Journal of Islamic Finance*, 11(1), 67-80.
- Kamdzhlov, M. (2020). Islamic finance and the new technology challenges. *European Journal of Islamic Finance*.
- Laldin, M. A., & Djafri, F. (2019). Islamic finance in the digital world: Opportunities and challenges (Kewangan Islam dalam Dunia Digital: Peluang dan Cabaran). *Journal of Islam in Asia (E-ISSN 2289-8077)*, 16(3), 283-299.
- Miftakhul Khasanah, Equivalence of Islamic Financial Literation Index with Islamic Financial Inclusion Index in The Islamic Banking Sector: A Case Study of DIY Society, *Economica: Jurnal Ekonomi Islam*, Vol.10, No.2, 2019
- Munawarah, A., Janah, A. M., Oktarini, E. A., & Khatimah, H. (2022). Peran Ekonomi Digital bagi Perkembangan Pasar Modern Indonesia. *Al-Aflah*, 1(2), 124-133.
- Mohaiyadin, N. M. H., Aman, A., Palil, M. R., & Said, S. M. (2022). Addressing accountability and transparency challenges in waqf management using blockchain technology. *Journal of Islamic Monetary Economics and Finance*, 8, 53-80.
- Norrahman, R. A. (2023). Peran Fintech Dalam Transformasi Sektor Keuangan Syariah. *JIBEMA: Jurnal Ilmu Bisnis, Ekonomi, Manajemen, dan Akuntansi*, 1(2), 101-126.
- Prasetyo, R. B. (2023). Pengaruh E-Commerce dalam Dunia Bisnis. *JMEB Jurnal Manajemen Ekonomi & Bisnis*, 1(01), 1-11.
- Rahmaddina, R., Artanti, N. P., & Yudha, A. T. R. C. (2023). Analisis Peluang dan Hambatan Literasi Keuangan Fintech Syariah di Era Revolusi Industri 4.0. *Jurnal Masharif Al-Syariah: Jurnal Ekonomi dan Perbankan Syariah*, 8(2).
- Rusydiana, A. S. (2018). Developing Islamic financial technology in Indonesia. *Hasanuddin Economics and Business Review*, 2(2), 143-152.
- Siddique, M. S., & Shah, H. S. (2023). Blockchain and Cryptocurrency for Islamic Finance: A Perspective of Scholars. *Integrated Business and Financial Studies*, 1(02), 1-16.
- Sihabudin, F., Achmad, L. I., Hamdan'Ainulyaqin, M., Midisen, K., & Edy, S. (2022). Analysis of Blockchain Technology and Security Principles in Cryptocurrency Transactions according to the perspective of

- Islamic Economics: Case study: Smart Contract on the Ethereum Blockchain Network. *Ta'amul: Journal of Islamic Economics*, 1(1), 11-20.
- Swain, S., & Gochhait, S. (2022, October). ABCD technology-AI, Blockchain, Cloud computing and Data security in Islamic banking sector. In *2022 International Conference on Sustainable Islamic Business and Finance (SIBF)* (pp. 58-62). IEEE.
- Suhasti, W., Muhamad, M., Penggalih, R., Handayani, L. F., & Nugroho, A. P. (2022). The Influence of Islamic Financial Literacy on The Use of Digital Financial Services in Yogyakarta. *KnE Social Sciences*, 50-55.
- Thaker, M. A. B. M. T., Khaliq, A. B., Thaker, H. B. M. T., Amin, M. F. B., & Pitchay, A. B. A. (2022). The potential role of fintech and digital currency for islamic green financing: toward an integrated model. In *Green digital finance and sustainable development goals* (pp. 287-308). Singapore: Springer Nature Singapore.