Al - Mashrof: Islamic Banking and Finance
Volume 4, No 1 (2023)
ISSN : 2746 – 3877 (ONLINE) ISSN : 2774 – 7166 (PRINT)
http://ejournal.radenintan.ac.id/index.php/almashrof
Page : 23 - 46

Dynamics of Islamic Banks in the Digital Transformation Era

Yudhistira Ardana[1], Anggita Nur Khofifah[2], Dewi Puji Lestari[3]
yudhistiraardana@metrouniv.ac.id[1], anggitank123@gmail.com[2], dewipujilestari@gmail.com[3]
Institut Agama Islam Negeri Metro[123]

ABSTRACT

Islamic banking has developed significantly over the past four decades and today has a global reach. One of the factors hindering Islamic banking in the coming decades is in the realm of financial technology (known as Fintech). Traditional financial methods will be abandoned in the digital age. This study will discuss the topic of financial innovation and technology in Islamic finance, as well as its Islamic parameters. This study employs qualitative secondary techniques using inductive methods to investigate primary data and on the topic, as well as descriptive methods to characterize the growth of fintech in the operations and practices of the Islamic banking industry. Based on the results of the study in this study, all innovations in Islamic finance need to be appreciated and can be seen as benefits (maslahah) for users (customers) and the financial industry as a whole. The results of this study also emphasize the relationship between fintech and shariah compliance which then recommends putting in place a comprehensive shariah governance framework to ensure that fintech operations are fully shariah compliant. Furthermore, authorities and regulators should adopt shariah standards that specifically identify shariah identifications that are important to fintechs.

Keywords: *digital transformation, financial technology products, sharia fintech*

A. INTRODUCTION

The advancement of digital technology in the financial market is one of the key drivers of modern economic growth. Digitization is a distinct and complex sector that yields significant savings in human resources and all associated costs in an effort to enhance competition. The financial system in general, and the banking industry in particular, are currently evolving to meet the demands of the modern digital economy. Business models and banking sector development concepts are evolving due to digital transformation. The progress of digital technology in banking and finance is now a major strategic concern for the banking industry, both in terms of growth prospects and the risks posed to ongoing banking concerns (Dermine, 2016; Marin, 2013).

According to Reddy et al. (2017), the right digital transformation strategy will drive business processes that result in revolutionary changes in how companies operate, engage, and configure themselves. According to Omarini (2018), in the banking industry, the process of digital transformation not only allows for a complete overhaul of existing processes and systems to make them more efficient and effective but also enables customers to enhance their experience during the development process. Digital transformation enables banks to provide new service channels through new electronic platforms (e-banking, virtual banking) and service points (electronic branch stores, POS), while reducing operational costs by decreasing physical offices and staffing (Shin et al., 2019; Deng et al., 2019). Traditional corporate models and procedures are being transformed by digitization, innovation, and new technology. As a result, banks must adapt their business models to change how they connect with consumers, manage their middle and back-office activities, and become competitive and prepared for the future (Cziesla, 2014).

Islamic finance has experienced significant growth over the past four decades and now has a global presence. It is considered one of the fastest-growing segments of the financial business worldwide. Indeed, the rapid expansion of Islamic banking has reached the West and non-Muslim countries as well. It is currently undergoing global integration in preparation for its implementation as a financial system worldwide. Financial and technical innovations will be one of the most challenging issues for Islamic finance in the next decade. Traditional financial procedures will be left behind in the digital era.

The Islamic banking industry plays a strategic role in grassroots economic development, contributing to productive, equitable, and inclusive economic activities. However, during the Covid-19 pandemic, the Islamic banking industry had to act swiftly to ensure adaptation using new, innovative strategies and risk reduction measures to combat the economic downturn caused by the pandemic. Specifically, the need for digital connectivity to replace physical interactions between consumers and providers, and in the process of delivering financial services, will become even more important as the economy, financial service providers, businesses, and individuals navigate the pandemic and ultimately the post-Covid-19 era. For instance, the pandemic has accelerated the shift to digital payments (Auer et al., 2020). It has also boosted e-commerce (Alfonso et al., 2021), which can benefit major technology companies and their businesses in the financial sector.

Countries with stricter Covid-19 policies and lower community mobility have seen a greater increase in the download of financial applications after the outbreak (Didier et al., 2021).

Not all economic sectors experienced decline during the Covid-19 outbreak. Dcode Economic and Financial Consulting (DEFC, 2020) examined various businesses, including e-commerce and ICT, that had the potential to thrive during the pandemic. Many organizations or businesses allocated resources to leverage technology for competitive advantage and customer attraction (Nawaz et al., 2020). Technology has a significant impact on human behavior, especially during lockdowns and physical distancing (Wijayanti & Riza, 2017). According to the International Monetary Fund (IMF), digital financial services are faster, more efficient, and usually cheaper than traditional banking services (Sahay et al., 2020). As a result, the advancement of digital banking technology has greatly assisted the banking sector in providing better and faster services to clients (Nawaz et al., 2020; Riza, 2019).

Based on the background that has been explained, the author is interested in examining and exploring the phenomenon of financial innovation and technology in Islamic banking. To achieve this goal, there are four dimensions to consider: financial innovation in the digital world in Islamic banking, opportunities and challenges of digital product innovation in Islamic banking, as well as compliance and the implementation of fintech in Islamic finance in Islamic banking.

B. LITERARURE REVIEW AND HIPOTESIS

Islamic Banking

Islamic banking refers to institutions that operate in accordance with the principles of Islamic law, based on the teachings of the Quran and Sunnah. The development of the Islamic banking business in Indonesia serves as an indicator of the performance of the Islamic economy and has experienced varying growth in line with the national economic growth. In Indonesia, the growth of Islamic banking business depends on the laws set by the government and policies formulated by financial authorities. The Sharia Banking Law Number 21 of 2008, enacted on July 16, 2008, serves as one of the foundational bases for the growth of Islamic banking. The presence of Islamic banking is crucial for the growth of the Islamic economy, especially in offering empowerment solutions for small and medium-sized enterprises, which have been the backbone of the economy and a fundamental need. This supports the government's economic system. This demonstrates that Islamic banks play a significant role in society as they act as intermediaries that can address the fundamental challenges faced by small and medium-sized enterprises, particularly in terms of capital (Karyani, 2021). The Islamic banking industry must remain vigilant and consider the Covid-19 pandemic. The rapidly changing economic conditions and the health of the financial system shape new methods and innovations that may endure in facing uncertainty.

Digital Transformation

Communication and human interaction with the environment have changed as a result of digital transformation, often referred to as digitization. Companies' efforts to leverage new functionalities through the use of digital technology to change organizational strategies and operations are characterized as digital transformation. In academia, the phrase "digital transformation" refers to organizational changes influenced by digital technology. Digital transformation occurs as a result of the changes brought about by technological advancements in business and the environment. Change occurs as a result of modifying business processes, such as changes between companies and their employees, changes between companies and their customers, and changes in the current market conditions. Current digital changes are happening faster and affecting nearly every aspect of life. The disruption of the industrial era, also known as the 4.0 era, has led to changes in business models and the transition of the current business ecosystem into a new ecosystem that is more inventive, complex, and dynamic. Over the years, digital transformation in conventional banking has brought significant changes in procedures, work practices, organizational structures, and business models to be more flexible in adapting to change. This fundamental transformation is necessary to ensure the survival of businesses and is closely related to changes in consumer preferences and transaction methods, as well as the introduction of non-bank competitors.

To provide competitiveness and added value to corporate businesses, the changes that occur during this process must be supported by appropriate transformation plans. Digital transformation has two components. Changing the way customers do business will have a significant impact. Online banking, mobile banking, chatbots, artificial intelligence, and social media applications are increasingly being used as distribution channels. Customer loyalty is likely to increase if digital strategies are implemented correctly according to customer expectations and needs. On the other hand, digital technology will reduce and threaten the survival of conventional banks that prioritize manual transactions, which means work procedures will be reduced, but this will also affect a reduction in workforce. Transformation must be rapid because in the era of disruption, time is the most important component in determining the long-term survival of a company (Winasis & Riyanto, 2020). Four reasons drive digital change. These factors include (a) modifications of rules or clauses; (b) changing competitive environments; (c) shifts to the digital economy; and (d) changes in customer behavior and expectations (Hadiono & Noor Santi, 2020).

Financial Technology Products

Fintech is the application of technology to deliver new and improved financial services (Thakor, 2019). The Financial Stability Board (FSB) defines fintech as enabling financial innovation that could result in new business models, applications, processes, or products with material effects on financial markets and institutions, as well as the provision of financial services. According to Thakor (2019), fintech encompasses four main categories: (i) credit, deposits, and capital enhancement services; (ii) payment, clearing, and settlement services, including digital currencies; (iii) investment management services (including trading); and (iv) insurance.

Financial technology, or fintech, is a type of technology and innovation that aims to compete with established financial techniques for the provision of financial services. It is a new industry that uses technology to enhance activities in the financial sector. Innovations such as smartphone-based mobile banking, investment services, and cryptocurrencies aim to make financial services more accessible to the general public. Fintech businesses consist of startups and established financial institutions and technology companies that seek to replace or enhance the use of financial services offered by existing financial institutions. Fintech can also enhance financial processes by providing suitable technology solutions for various organizations and contribute to new business models or even new companies (Leon & Sung, 2018). Insurance, trading, banking services, and risk management have all been automated using financial technology (Aldridge, 2017).

C. RESEARCH METHOD

Research methodology is a set of activities, rules, and procedures used by researchers in the field of science. Methodology is also a theoretical examination of a method. Research is the systematic introduction of new information to increase the amount of knowledge. This study takes an exploratory approach, thoroughly evaluating current literature such as policy documents, research reports, and publications in relevant disciplines (VanderStoep & Johnston, 2009). To observe and analyze all information related to the research issue, this study employs the methodology of literature research. Literature research is a type of research that gathers detailed information and data from various papers, books, notes, journals, other references, and previous research results related to the research topic (Yaniawati, 2020).

This study examines the evolution of financial technology used to provide Islamic banking services. The research proposes a literature research model consisting of several steps, as follows: Firstly, the researcher reviews and studies phenomena related to the research topic. Secondly, the research focus is established based on the facts collected and obtained from the literature review. Thirdly, the knowledge or empirical data obtained from books, journals, research papers, and other publications that can provide a new scope of study are the collected data sources. As a result, the researcher will be able to help determine many variables related to the research problem. Fourthly, explore various library sources for the best results so that this research can discover new ideas about the problem to be investigated. Finally, conclusions are obtained from examining research notes from various materials, and the research report is written in a common writing system. Literature research methods may integrate the findings of preliminary studies with current research on the same topic. Thus, the verification of previous investigations can reveal new aspects in further investigation (Arianto, 2020).

D. RESULTS AND DISCUSSION

1. Financial Innovation in the Digital Era

As a result of human development and technological breakthroughs, financial practices have evolved from simple transactions to complex and sophisticated arrangements. Throughout history, financial innovation has aimed to help individuals manage their finances efficiently and productively. Financial innovation encompasses all aspects of designing, developing, and implementing financial instruments, as well as finding new solutions to challenges in the financial sector (World Economic Forum, 2012).

Some of the most popular new technologies in the digital environment today are payment solutions, personalized notifications, and rapid account opening. Consequently, various banks and financial institutions have committed to investing in digital initiatives such as channels, customer journeys, automation, and new technologies to avoid losing up to 50% of their retail banking revenues within a few years. The World Islamic Banking Competitiveness Report (WIBCR, 2016) estimated that between USD 15 million and USD 50 million would be spent on digital projects over the next three years, with larger banks providing greater funding for digital initiatives. Similarly, according to an Islamic fintech survey, global fintech investments in the first half of 2018 reached USD 57.9 billion.

Because blockchain technology has the potential to maintain information/data in a way that is not controlled or altered even by administrators and system developers, some companies have endeavored to build and use blockchain platforms. This trend is driven by the expanding use of blockchain to help enhance operational efficiency. However, most listed initiatives are not blockchain-based; rather, they are platform applications such as group lending or equity crowdfunding schemes, or Islamic finance-related projects such as blockchain-powered halal certification schemes or Zakat-powered blockchain systems (IFSB, 2019).

Furthermore, using blockchain technology to create Smart Contracts, which are programmable contracts executed automatically when specified conditions are met, can accelerate processes, increase transparency, and minimize ambiguity in dispute resolution processes through litigation. Smart Contracts can shorten the settlement cycle for syndicated loans, generating additional demand growth of 5% to 6% and increasing revenue by USD 2 billion to USD 7 billion annually in the future. Additionally, by reducing upfront processing costs in the US and European markets, banking consumers can save between USD 480 and USD 960 per loan, while banks can save between USD 3 billion and USD 11 billion annually. Similarly, using smart contracts in the private motor vehicle insurance market could save this sector around USD 21 billion per year, and customers can expect lower premiums as insurance companies channel part of their annual savings. This clearly demonstrates that all these enhancements are maslahah (benefits) for clients and the financial industry as a whole. It will reduce operational costs, enhance operational process resilience, expand client groups, and improve capital efficiency.

2. Opportunities and Challenges of Digital Product Innovation in Islamic Banking

The growth of the Islamic finance sector, with total assets of USD 2.417 trillion at the end of 2017, has been supported by the introduction of crowdfunding platforms, blockchain technology, and the push towards socially impactful investments. While there is currently a scarcity of information regarding the availability of Sharia-compliant financial products, the Wakaf (Endowment) and Crowdfunding industries offer great promise, with a sector predicted to reach USD 3.5 trillion by 2021. Combining Wakaf with online platforms, known as crowdfunding, has been suggested by

Laldin et al. (2018) as a viable instrument for raising Wakaf funds and providing sustainable sources of income. Crowdfunding is a new funding source for different Wakaf entities that diverges from existing techniques (Suhaili & Palil, 2017). It has the potential to boost Wakaf fundraising by bringing together a large group of people with a shared philanthropic goal. In general, this is a crucial tool for startups with the goal of generating funds and creating innovative job opportunities through new initiatives, ultimately contributing to better community development.

Furthermore, the crowdfunding system benefits entrepreneurs and investors alike. For instance, entrepreneurs can save a lot of time, effort, and money by utilizing crowdfunding platforms to create fundraising campaigns for their products. On the other hand, one advantage of crowdfunding for investors is the option to assess fundraising companies through offers. This reduces the risk of significant financial losses by allowing consumers to invest a small amount of money, diversify their investment portfolios, and earn higher returns and a fair share of the company's capital. However, the lack of adequate legislative regulations about Wakaf may limit its potential and spread. Lessons could be learned from the UK, where investors are eligible for tax benefits (Andaleeb, 2016).

Similarly, Shariah-compliant banks can leverage blockchain technology, particularly decentralized digital big data and Smart Contracts, to maintain and enforce agreements or contracts within the Islamic financial system. According to a Thomson Reuters report (2016), the potential for digital innovation in the Islamic finance industry has been driven by a

23% increase in Sukuk for infrastructure financing, a 16% increase in SME growth initiatives, a 12% increase in Shariah pension funds, and the growth of fintech applications and crowdfunding. As a result of these opportunities, companies in the Islamic finance industry will likely harness them and allocate greater resources to developing innovative digital financial services.

Another significant breakthrough is the ZakatTech blockchain platform, a collaboration between the Shariah Research Academy for Islamic Finance (ISRA) and SysCode. The goal of the ZakatTech Blockchain platform is to track the entire process of Zakat collection to distribution. Transactions are documented using an asset structure that allows for remarkable tracking and tracing of specific fund transfers. Providing high levels of transparency and accountability, this program aims to enhance public trust in donating Zakat through official channels. This will increase the amount of collected Zakat and its distribution to the needy, thus contributing to socioeconomic improvement. It's considered an innovative program that helps obligatory Zakat groups better manage Zakat funds and bridges the gap between Zakat-paying communities and recipients.

Challenges that Shariah banks and/or Shariah entrepreneurs face include the need to demonstrate that their economic activities are proportionate to the transactions conducted. This ensures that product quality is critical to prevent Muslim consumers from being deceived or disappointed. This is crucial because in this digital economic system, the physical form of goods is immediate and tangible, but buyers/consumers cannot see or recognize them (Maharani

& Ulum, 2020). Customers in general, and digital banking customers in particular, are in a difficult situation as their interests and protection as consumers face various cyber threats. Customers' funds in banks are misused, credit cards are stolen, personal data and confidential Personal Identification Numbers (PINs) are sold, and so on (Gaib, 2020).

More than just providing online and mobile banking services, the challenge of digitally transforming the banking sector is innovating in integrating digital technology with customer interactions. In this regard, new technological discoveries should increasingly make it easier for consumers to access banking services. One such example is digital banking, which refers to virtual procedures that support all services contributing to the overall success of an organization. Therefore, banks must continuously implement digitalization strategies. The transformation from traditional to digital banking can improve work process efficiency and customer service quality, making digitalization a refreshing boost to Shariah banking offerings. Banks have made long-term investments in the future through digitalization, and digital services are likely to be a major driver of the long-term growth of the banking industry (Tahliani, 2020).

The benefits and challenges of the digital era will touch all sectors, including finance and Islamic banking. To address these issues, Islamic banks can take at least a few steps towards digital banking development: First and foremost, digital companies must ensure that their customers have the best user experience when using their services. Customers can easily switch to other companies in the digital world. Second, cybersecurity, including banking with the government, requires cooperation to ensure transaction security. The final stage is to connect online and offline. Fourth, companies should conduct data-driven analysis to determine customer demand, behavior, and desires. Fifth, corporations and governments must start creating a digital DNA. As a result, governments and companies are forced to pass laws that promote digitization (Dz, 2018).

Coronavirus Disease 2019, commonly known as Covid-19, is a viral disease that can cause severe lung damage. The first Covid-19 cases were discovered in China in November of that year. Covid-19 is a rapidly spreading viral disease caused by a newly identified virus. The World Health Organization (WHO) reported 3,116,398 confirmed Covid-19 infections worldwide, with 217,153 deaths (April 29, 2020). Indonesia has the highest Covid-19 related death toll among ASEAN countries (Sumadi, 2020). The economic crisis caused by the Covid-19 epidemic has reduced payment activities and increased the use of digital banking technology. The implementation of Large-Scale Social Restrictions (PSBB) limiting community mobility and the demand for cash transactions have hindered cash growth. ATM, Debit Card, Credit Card, and Electronic Money (EU) transactions have decreased, while digital banking transactions and payment transaction volumes have slowed. The positive trend is the increased desire and acceptance of the public to use digital platforms and financial tools, such as e-commerce, to meet daily needs.

In line with increasing economic activity, cash and non-cash payment transactions in the second half of the year have improved. In December 2020, the Money Supply (M2) increased by 13.25 percent (YoY). After a decline in the previous month, the value of non-cash payment transactions conducted through ATM, Debit Card, and Credit Card increased by 1.36 percent year on year in December. The increased use of e-commerce platforms and digital instruments during the pandemic, as well as the public's desire and acceptance of digital, have led to significant growth in digital economic and financial activities. The value of Electronic Money (EU) transactions increased by 30.44 percent in December 2020, indicating this trend (YoY). Moreover, digital banking transactions are on the rise. In December 2020, the number of digital banking transactions reached 513.7 million, an increase of 41.53 percent (YoY), with the value of digital transactions reaching IDR 2,775.

3. Implementation and Compliance of Sharia Fintech

Fintech has been used as a new tool in the Islamic finance industry to provide fundamental Islamic financial solutions. Unless there are specific prohibitions, Islamic law states that basic economic norms (*mu'amalah*) are permissible (*ibahah*). The principle of permission fosters a flexible environment for corporate innovation as well as new financial transactions and practices. All innovations are allowed and often welcomed in mu'amalah. Only if there is clear evidence that a discovery violates established Sharia norms is it prohibited (*dawabit*). Over the past four decades, the Islamic finance industry has become increasingly reactive, following the expansion of traditional financial processes and merely adapting market practices. Although not incorrect, the replication approach has been widely used in creating Sharia-compliant products to mimic conventional products in terms of Sharia compliance. This pragmatic technique focuses on re-creating Sharia product structures by modifying traditional commodity structures to align with Sharia rules and principles.

Sharia contracts in Islamic banking should not be limited to an approach that imitates the characteristics of conventional financial instruments. The development of fintech can be researched to highlight Sharia financial value propositions, such as utilizing technology to ensure low risk in musyarakah and mudarabah financing models, or using fintech to manage and optimize istishna and salam. In other words, fintech should usher in a new era of Islamic financial products and services, with the industry witnessing the adoption of various Sharia contracts that employ fintech solutions to meet societal needs. While there is still uncertainty, efforts can be made to address potential conflicts (*hiyal*), unintended outcomes (*makharij*), and circumventions (*dhara'i*). When discussing fintech, it's important to remember that its existence should drive innovation within the Islamic financial industry, stimulating creativity by offering new perspectives and practices in financial transactions. In this context, Sharia scholars and industry practitioners should collaborate to develop new products that align with Sharia and cater to societal desires while contributing to Sharia objectives (*maqashid al-shariah*).

As stated earlier, the Sharia principles governing business transactions (*mu'amalah*) are based on the premise that every transaction is permissible unless there is clear reason to oppose it. In the realm of innovation and new practices, the principles of permissibility grant freedom in commercial and financial activities. As a result, all discoveries are considered valid and universally accepted in mu'amalat. Fintech innovations are only allowed if there is clear evidence from primary or secondary Sharia sources that they violate fundamental Sharia laws. Similar to traditional Islamic finance, the implementation and practice of fintech must adhere to Sharia principles by avoiding prohibited aspects in transactions such as interest (*Riba*), gambling (*Maysir*), uncertainty (*Gharar*), harm (*Darar*), deceit (*Tadlis*), and so on. Similarly, transaction processes in fintech applications must comply with contract norms (*aqd*), considering contract pillars (*Arkan*) and conditions (*Shururt*). Furthermore, fintech should be used to achieve Sharia objectives (*maqashid al-shariah*), namely providing benefits (*maslahah*) while avoiding harm and hardship (*mafsadah and mashaqqah*).

Furthermore, fintech applications should align with Islamic concepts such as transparency, fairness, and equality, while avoiding deception, fraud, and other behaviors that could lead to consumer dissatisfaction. These concepts will not only protect customers and society at large but also encourage fair resource allocation and just transactions, both of which are goals of Islamic law. An appropriate Sharia governance framework must be established to ensure that fintech operations are genuinely Sharia-compliant. In other words, regulators or authorities should assess Sharia compliance issues in fintech operations and practices to ensure that fintech functions in a secure environment. Currently, there are no formal regulations or laws governing Sharia-compliant fintech.

E. CONCLUSION

Fintech applications must align with Islamic concepts such as transparency, fairness, and equality, while avoiding deception, fraud, and other behaviors that could lead to consumer dissatisfaction. These concepts will not only protect customers and society at large, but also encourage fair resource allocation and just transactions, both of which are goals of Islamic law. An appropriate Sharia governance framework must be established to ensure that fintech operations are genuinely Sharia-compliant. In other words, regulators or authorities should assess Sharia compliance issues in fintech operations and practices to ensure that fintech functions in a secure environment. Currently, there are no formal regulations or laws governing Sharia-compliant fintech.

F. REFERENSI

Alfonso, V., Boar, C., Frost, J., Gambacorta, L., & Liu, J. 2021. *E-commerce in the pandemic and beyond*. BIS Bulletin: 36.

Andaleeb, U., Mishra, A. K. 2016. "Equity Crowdfunding in Shariah Compliant Nations: An Outlook in the Middle-East." *Global Journal of Finance and Management*. 8(1).

Arianto, B. 2020. Pengembangan UMKM Digital di Masa Pandemi Covid-19. *ATRABIS: Jurnal Administrasi Bisnis, 6*(2), pp 233–247.

Auer, R., Cornelli, G., & Frost, J. 2020. *Covid-19, cash and the future of payments*. BIS Bulletin: 3.

Cziesla, T. 2014. A Literature Review on Digital Transformation in the Financial Service Industry. *In Proceedings of the Bled eConference*. Bled, Slovenia.

Deng, X., Huang, Z., & Cheng, X. 2019. *FinTech and Sustainable Development: Evidence from China Based on P2P Data*. 11, 6434.

Dermine, J. 2016. *Digital Banking and Market Disruption: A Sense of Dejà Vu? Financial Stability Review*. Banque de France. pp 17-24.

Didier, T., Feyen, E., Llovet Montanes, R., & Ardic Alper, O. A. 2021 Global Patterns of Fintech Activity and Enabling Factors. *World Bank Group Fintech and the Future of Finance report*.

Dz., A. S. 2018. Inklusi Keuangan Perbankan Syariah Berbasis Digital-Banking: Optimalisasi dan Tantangan. Al-Amwal : Jurnal Ekonomi Dan Perbankan Syari'ah , 10 (1), 63. https://doi.org/10.24235/amwal.v10i1.2813

Gaib, D. N. 2020. Dinamika Hukum Perbankan Digital di Indonesia. In LEX ET SOCIETATIS 7(11). https://ejournal.unsrat.ac.id/index.php/lexetsocietatis/article/view/27366

Hadiono, K., & Noor Santi, R. C. 2020. Menyongsong Transformasi Digital. *Proceeding Sendiu,* pp 978–979.

Islamic Financial Services Industry Stability Report 2019.

K. S. Aldridge. 2017. *Real-Time Risk: What Investors Should Know About Fintech, High- Frequency Trading and Flash Crashes*. Hoboken: Wiley.

Laldin, M., Zubaidah. S, & Djafr. F. 2018. *Awqaf Properties and Their Development in Malaysia: Governance, Reformation and Transformation*. Global Conference on Waqf and Endowments, College of Islamic Studies, Hamid Bin Khalifa University

Leong, K. & Sung, A. 2018. FinTech (Financial Technology): What is It and How to Use Technologies to Create Business Value in Fintech Way?, *Int. J. Innov. Manag. Technol.* 9(2) pp 74–78.

Maharani, S., & Ulum, M. (2020). Ekonomi Digital : Peluang Dan Tantangan Masa Depan Terhadap Ekonomi Syariah Di Indonesia. In Conference on Islamic Studies (CoIS) https://doi.org/10.30659/COIS.V0I0.7981

Marinč, M. 2013 Electronic Commerce Research., Volume 13, Issue 1, pp 71–101 https://doi.org/10.1007/s10660-013-9107-2

Nawaz, S.S., Hilmy, H.M.A., & Gunapalan, S. 2020. Islamic banking customers' intention to use mobile banking services: A Sri Lankan study. *Journal of Advanced Research in Dynamical and Control Systems, 12*(2), pp 1610–1626.

Omarini, A. 2017. The digital transformation in banking and the role of Fintechs in the new financial intermediation scenario. *MPRA Paper 85228*, University Library of Munich, Germany.

Reddy, S. K., & Reinartz, W. 2017. Digital transformation and value creation: Sea change ahead. *GfK Marketing Intelligence Review.* 9(1). Pp 10-17.

Sahay, R., & Allmen, U.E.V., Lahreche, A., Khera, P., Ogawa, S., Bazarbash, M., & Beaton, K. 2020. *The Promise of Fintech : Financial Inclusion in the Post COVID-19 Era.* IMF Departmental Papers/Policy Papers 20/09, International Monetary Fund.

Shin, Y. J., & Choi, Y. 2019. *Feasibility of the Fintech Industry as an Innovation Platform for Sustainable Economic Growth in Korea*. 11, 5351.

Suhaili, N. A., & Palil, M. R. 2016. *Crowdfunding: A Collaborative Waqf Based Internet Platform, International Journal of Business, Economics and Law,* 11(5), pp 2289-1552.

Sumadi. 2020. Menakar Dampak Fenomena Pandemi Covid-19 Terhadap Perbankan Syariah. Jurnal Hukum Ekonomi Syariah , 3(2), pp 145–162.

Tahliani, H. 2020. Tantangan Perbankan Syariah dalam Menghadapi Pandemi Covid-19. Madani Syariah, 3(2), pp 92–113. https://doi.org/10.51476/MADANISYARI'AH.V3I2.205

Thomson Reuters. *State of the Global Islamic Economy Report 2016/17.* https://ceif.iba.edu.pk/pdf/ThomsonReutersstateoftheGlobalIslamicEconomyReport201617.pdf

VanderStoep, S. W., & Johnston, D. D. 2009. *Research methods for everyday life: blending qualitative and quantitative approaches* Vol. 24.

Wijayanti, D.M., & Riza, A.F. 2017. Sharia Fintech: Positive innovation in consumer perspective. *Proceeding of International Seminar Academic Network on Competition Policy* pp 101-119

Winasis, S., & Riyanto, S. 2020. Transformasi Digital di Industri Perbankan Indonesia: Impak pada Stres Kerja Karyawan. *IQTISHADIA: Jurnal Ekonomi Dan Perbankan Syariah*. 7(1). Pp 55–64.

World Economic Forum. 2012. *Rethinking Financial Innovation: Reducing Negative* Outcomes *while Retaining the Benefits. Geneva: World Economic Forum.*

Yaniawati, P. 2020. Penelitian Studi Kepustakaan. *Penelitian Kepustakaan (Library Research)*, 15.