Opportunities for Islamic Microfinance Institutions based on FinTech Startup in Indonesia after the Covid-19 Pandemic

Wanti Ernawati¹, Wahyu Murti², Joko Riyanto² wantiernawati5@gmail.com¹, wahyu murti@borobudur.ac.id², joko riyanto@gmail.com³

Universitas Borobudur^{1,2,3}

Abstract: The use of FinTech Startup has been widely used by large and small companies, both those engaged in the financial industry and non-financial industry. For the non-banking Islamic finance industry, such as Cooperatives and BMTs, it certainly provides a double advantage, namely being able to improve both social and commercial microfinance performance at the same time. Internet users in Indonesia will reach 210.03 million in 2022, and only 15% will utilize Islamic microfinance institution product services, of course, this is a potential opportunity to take advantage of such a large market share, especially in the digital era after the Covid-19 pandemic. It's just that in order to seize this opportunity, Islamic microfinance institutions need to take advantage of the solidity of their FinTech Startup ecosystems, such as users, governments, technology companies, mastery of technology use, and traditional financial institutions.

Keywords: Sharia Cooperative, BMT, FinTech Startup, Government, Customers

1. Introduction

The presence of the Industrial Revolution 4.0 in the 21st century has entered the VUCA era which characterizes, among other things, the maturity of FinTech in global financial institutions [1] [2] including Microfinance Institutions, such as cooperatives, BMTs, and the like [3] [4] so as to provide convenience in the financing, storing, depositing and withdrawing cash at the same time [5], just like banking financial institutions. FinTech has become a trend in the digital era as well as a challenge in the development of sustainable economic development.[6] This is evident from the Indonesian FinTech Association Report that the FinTech Startup market niche in Indonesia is very large, especially in peer-to-peer financing which reaches 36%.[7] [8] However, FinTech startup financing turned out to have an unfavorable impact on business development and the financial performance of multi-finance financial institutions declined [9], including cases of problem financing in FinTech P2P which are currently common.[10]

Apart from the challenges and obstacles above, the support of FinTech Startups that are ready to assist MSME financing in Indonesia besides banking institutions is cooperatives and BMTs.[11] Microfinance institutions need to improve immediately, especially in improving their financial inclusion performance through credible debtor protection coupled with product innovation based on optimizing the use of financial technology.[12] [13] For sharia cooperatives and/or BMTs, the presence of FinTech can make it possible to combine social and business

microfinance (Sakti, 2019).[14] Furthermore, the presence of FinTech in Islamic microfinance shapes an Islamic Fintech environment going from monetary clients, fintech new businesses, legislatures, innovation engineers, and customary monetary foundations.[15] [16]

The number of FinTech users in Indonesia reached 143.26 million in 2020, and the increase in FinTech companies has become an opportunity for Islamic microfinance institutions to take advantage of marketing their products through innovative features based on fintech startups [17], starting from the payment system, financing to asset management.[18] However, of the many FinTech users mentioned above, only 15% of users take advantage of Islamic microfinance institutions.[19] The reason for this paper is to analyze open doors for using FinTech New companies in Islamic microfinance organizations in Indonesia after the Coronavirus pandemic and the issues they face.

2. Discussion

2.1 FinTech users in Indonesia

Arner (2015) in an article entitled "The Evolution of Fintech ..." mentions that the Industry 4.0 revolution which gave birth to various technological innovations including FinTech has facilitated business activities and can improve company performance, including Islamic microfinance institutions through the application of technology.[20] Stefanny & Tiara (2021) state that financial technology is developing information technology in providing financial products to make services easier.[21] According to Kagan (2020) that the use of FinTech can make it easier for companies, business owners, and users to be more effective in the process of planning for financial management through a set of software programs that have designed algorithmic programs via computers and smartphones (see Figure 1 Cellular and Cable Phone Users).[22]



Figure 1. Cellular and Cable Phone Users

Lee and Shin (2018) in writing in the journal "Business Horizons" explain that the presence of FinTech can be utilized for at least 6 (six) uses, namely payments, abundance the board, crowdfunding, distributed (P2) loaning, capital business sectors, and monetary administrations. protection.[23] Of the six benefits of using fintech, it is not surprising that business people, technology companies, and of course end users use this technology for various activities.[21] On the other hand, said the OJK (2016) the weaknesses of using FinTech are 1) there are as yet numerous clients who don't have a permit to move reserves and are less deeply grounded in completing their exercises with huge capital when contrasted with banks, 2) there are still FinTech companies without offices physically, as a matter of fact, many need insight in completing strategies connected with security frameworks and item respectability.

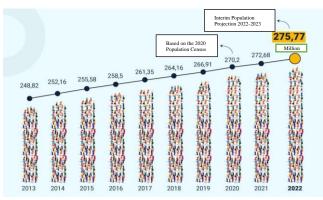


Figure 2. Total Population of Indonesia in 2013 – 2022

From the advantages and disadvantages of using FinTech above, for the people of Indonesia, which in 2022 has reached 275.77 million people (see Figure 2), this is certainly a big opportunity as a market share niche in the use of technology. Such a huge market potential said Dimas Bayu (2022) has made web clients in Indonesia keep on expanding consistently. The Relationship of Indonesian Web access Suppliers (APJII) in its report made sense of that in the 2021-2022 period, internet users had reached 210.03 million, this number continued to increase compared to the previous year which was only 196.7 million people (up 6.78%).

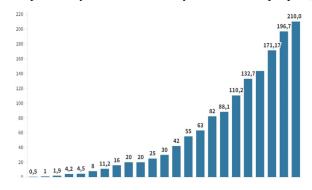


Figure 3. Number of Internet Users in Indonesia 1998 -2022

Internet users seen from the 13-18 year age group alone have reached 99.16% penetration, followed by the 19-34 year age group at 96.64%, and the third place is occupied by 35-54 year

ı

ago at 87.30%. The remaining penetration of 62.43% and 51.73% is controlled by the age group 5-12 and 55 years and over. Judging from the level of income, in general users with incomes above IDR 5,000,000 to 15,000,000 access the internet, with penetration reaching 86.83% (see Figure 3). The group with an income of more than Rp. 15 million of 88.53%, followed by groups with income of more than Rp. 1,000,000 to Rp. 5,000,000 of 88.07%. Meanwhile, the group with an income of less than IDR 1 million used the internet less (67.46%). According to the 2021 Startup Ecosystem Ranking Index submitted by StartupBlink, Indonesia's startup ecosystem ranks 45th with a score of 3,657 in the global startup ecosystem order. The top ranking is still dominated by the United States with a score of 124,420, second place is occupied by the UK with a score of 28,719, and in third place is Israel with a score of 27,741 followed by Canada and Germany. This ranking, said Kharisma (2021) can be measured from three aspects, namely 1) quantity (number of startups), 2) quality (startup quality), and 3) business environment (business environments, such as infrastructure, policies, and laws).[25]

2.2 Regulation of the Use of FinTech in Indonesia

The massive use of FinTech Startups in Indonesia lately cannot be separated from the persistence of technology companies in marketing their products supported by the millennial generation's addiction to this one software, even though crime in cybercrime is also increasing.[24] According to the Financial Services Authority (OJK), the growth of startup-based FinTech companies in Indonesia has now reached 99 companies. This development certainly needs legal protection for both FinTech companies as well as users and law enforcement. Njatrijani (2019) sees that for this opportunity there must be a clear regulation of technological innovation in the financial sector, of course, it is necessary to balance competing goals, especially for innovation, financial stability, and customer protection.[25] As per him, this is quite difficult for controllers a decade after the worldwide monetary emergency incited a huge spotlight on monetary strength and expanded buyer insurance.

In the peer-to-peer (P2P) funding sector, for example, the notes of Disemadi & Regent (2021) state that many people are borrowing funds through the massive use of FinTech services.[26] According to BI, the massive use of FinTech in society is because it is more effective and efficient in producing new products, services, technology, and or business models for business people and users. Fachrurrazy & Siliwadi (2020) admit that thanks to FinTech innovation, the development of the national economy is growing, but the obstacles encountered are related to regulatory oversight which has not been fully protected from illegal FinTech violations.[27] Therefore, the government must provide legal protection against violations of FinTech and sharia conflicts in particular. Monetary Administrations Authority Guidelines (POJK) and Bank Indonesia Guidelines (PBI) as the fundamental government controllers, DSN-MUI Fatwa and Board of Governors Regulations (PADG BI) as other regulators need to optimize supervision of the use of FinTech from pre-operational to excess implementation.

The regulations related to FinTech can be classified as follows: [28]

 Financial Administrations Authority Guideline (POJK) No. 77/POJK.01/2016 in regards to Data Innovation based Cash Loaning Administrations (LPMUBTI). In this standard, OJK makes rules to control different issues connected with overseeing the loaning business from one client to another (Shared Loaning). This guideline was made to safeguard purchaser and information security, forestall illegal tax avoidance and psychological warfare funding, monetary framework dependability, for fintech organization administrators.

- 2. Bank Indonesia Guideline (PBI) No. 18/40/PBI/2016 in regards to the Execution of Installment Exchange Handling (PTP). This guideline is expected to address the issues of the local area, for example, in the field of installment framework administrations, both regarding instruments, licenses, overseers, components, and foundation for installment exchange handling suppliers, reports, checking and preclusion frameworks, and authorizations.
- 3. BI Guideline No. 19/12/PBI/2017 concerning the execution of FinTech and its advancement in Indonesia. This guideline goes about as a lawful umbrella for keeping up with the strength of the monetary framework in Indonesia. The development of this PBI is expected to help the formation of a proficient, smooth, safe, and dependable installment framework on the side of maintainable public financial development, comprehensive in applying the standards of buyer security as well as hazard and prudential administration. In the execution of FinTech, BI gave a Guideline of Individuals from the Leading body of Lead representatives, known as PADG Number 1914/PADG/2017 in regards to FinTech and PADG administrative sandbox Number 19/15/PADG/2017 with respect to methodology for enlistment, data conveyance, and observing Fintech coordinator.

The presence of this administration guideline because of the command of Regulation no. 11 of 2008 concerning data and electronic exchanges (RI LN of 2008 No. 58, Supplement to the State Paper of the Republic of Indonesia No. 4843) jo. UU no. 19 of 2016 concerning Corrections to Regulation no. 11 of 2008 concerning ITE (RI LN of 2016 No. 251, Supplement to the State Paper of the Republic of Indonesia. No. 5952) and other related regulation. In addition to government regulations, the Fatwa on Sharia Electronic Money (Fatwa Number 116/DSN-MUI/IX/2017), and the Fatwa on Sharia-based Information Technology Financing Services (No. 117/DSN-MUI/IX/2018) make these two fatwas guidelines for activities or products of Islamic financial institutions and Islamic business institutions. According to Sitompul (2018) that these regulations cannot be separated from one of the FinTech services such as P2P lending services which effectively and efficiently through digital bring together borrowers who need business capital with lenders who expect competitive returns so that one party is often disadvantaged.[29] Records of the Indonesian Ministry of Communications and Informatics state that there have been 803 FinTechs that have been frozen because they do not have permits or are illegal.

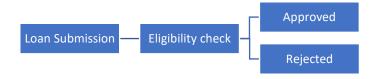


Figure 4. How P2P Lending Works

The ease of P2P Lending makes the community a solution besides using bank services because they can get loans without collateral/collateral through a more effective, simple feasibility checking process. Moreover, P2P lending services can be accessed easily online (see Figure 4). According to OJK, the utilization of FinTech in Indonesia can be arranged into two sorts. FinTech 2.0 is planned for advanced monetary administrations worked by bank monetary establishments, while FinTech 3.0 is expected for FinTech New businesses that have monetary development items and administrations.

The Financial Stability Board (FSB), an international monitoring and recommending body for global financial system policies, classifies the use of FinTech into four categories, namely:

- Payment, Settlement, and Getting are classes free from Fintech that give installment framework administrations by banks and BI.
- 2. Market Aggregator is a FinTech that presents monetary information so clients can involve it for correlation in picking the right monetary item.
- 3. Risk and venture the executives is an element of fintech in deciding if a monetary organizer is proper or not really for clients.
- 4. Peer-to-Companion Loaning (P2P Loaning) is a Fintech that offers credits straightforwardly to clients with a foreordained financing cost.

2.3 FinTech Startup Opportunities for Islamic Microfinance Institutions

Indonesia is the largest market share in Southeast Asia Pacific because it has a population of more than 275.77 million people. According to Lubis et al. (2020) that 60% of the entire population is on average still of productive age, namely 35 years old, and is also the millennial generation of digital users.[30] Of course, this basic capital can be a treasure trove of opportunities for the use of FinTech in Indonesia. In fact, Indonesia initiated the development of the FinTech ecosystem before Malaysia and Brunei Darussalam. The development of the FinTech market continues to grow to reach 16.3% [31], economic growth every year. For example, in 2015, 50 FinTech companies have now recorded more than 165 FinTech companies with the digital payment segment reaching 38% topping the FinTech lending segment by 31% plus personal finance by 8%.[32]

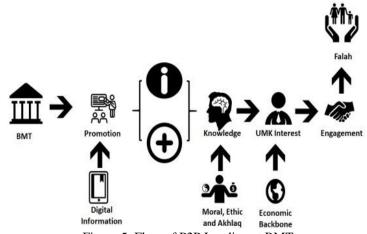


Figure 5. Flow of P2P Lending at BMT

The use of FinTech in P2P lending services makes it easy – even though it is not yet ranked top but still ranks second (31%) it really helps the community in providing collateral-free funding services. This is certainly a big opportunity for non-bank Islamic financial institutions such as Islamic cooperatives or BMTs to seize great opportunities to use FinTech Startups (see Figure 5), moreover, digital service product innovations such as mobile applications can be implemented.[30] So, FinTech Startup-based digital services for Islamic microfinance institutions, both cooperatives, and BMTs, need to actively promote technology-based financial inclusion to reach a wider population. Moreover, said Nugroho et al. (2019) that the advantages

of using FinTech Startups in Islamic microfinance institutions apart from business elements, their operational practices are based on ethical, moral and ethical values which can indirectly provide comfort to users and customers.[33]

Based on OJK reports up to March 9 2023, the total number of legal FinTech P2P Lending managers has shrunk to 102 companies. FinTech Lending or P2P Lending is an online loan that provides financial services by bringing together lenders/lenders with borrowers/borrowers who are bound according to agreements in the rupiah cash straightforwardly through an electronic framework. According to Baihaqi (2023), in his notes, it is stated that in 2021 there will be more than 30 million P2P Lending borrower accounts.[36] While the wealthiest segment has more than 9 million retail investors in 2022, even 6 million MSMEs use the SaaS (Software as a Service) platform in their FinTech use. More than 60 million FinTech users in 2020 are predicted to continue to increase by 26% (Compounded Annual Growth Rate, CAGR) until 2025.

This increased growth cannot be separated from BI's role in socializing the importance of digital literacy. According to Desty (BI Senior Bank Debut) in a press release stated that BI together with the Government and business actors support efforts to digitize MSMEs on an end-to-end basis in various aspects, such as production must be developed, expanding marketing access through onboarding and utilizing digital payment transactions so that they are efficient. competitive and classy. Even BI has prepared a policy framework for the development of BI's MSEs to encourage Indonesian MSMEs to have competitiveness through MSMEs going digital. This is in accordance with the wishes of sharia microfinance institutions that become funding service partners and must be able to increase the use of IT to serve these MSMEs.

According to Gatot (2023), who serves as the main director of JamSyar, a non-banking financial institution, emphasized that the use of FinTech is very useful in crowdfunding zakat in the amount of IDR 6 billion that will be issued. It can even help finance KUR products, the National Economic Recovery Working Capital Credit (KMK PEN) and contribute to the development of the National Capital Infrastructure (IKN) as a form of social and commercial role. Lenny Septiani (2023) in his writing reports that FinTek Startup (FinTech Lending) commonly known as online loans have disbursed financing of US\$17 billion or the equivalent of IDR 255.7 trillion during the 2017-2022 period. FinTech lending (online loans) based on CAGR increases by an average of 140% per year. Even today, more than 30 million P2P lending accounts are active. This means that opportunities for Islamic microfinance institutions, including BMT, are open.

Aufi Ramandhania Pasha (2021) reported that during the Covid-19 pandemic, not a few companies were able to survive the global recession, as a result of which many employees were laid off.[38] The people's economy is so difficult to meet the needs of daily life so not a few people take loans. However, from these online loans came further problems, namely suffocating interest and terror over stressful installment delays. From that, Islamic FinTech needs to take a role, any Islamic FinTech from anywhere, and anyone can apply for a loan to meet these needs with a sense of security without having to worry about usury and the like. Sharia Fintech in non-banking Islamic financial institutions must be able to implement a profit-sharing system with an agreed tenor. In addition, the borrower's billing system needs assistance. For example, if you pay a bill that is past due, the loan is not subject to penalty fees because Sharia FinTech promotes the principles of transparency and fairness.

DSN-MUI Fatwa No. 117/DSN-MUI/II/2018 confirms that Sharia FinTech must be able to avoid elements of *ribawi* (interest), *gharar* (unclarity), *maysir* (gambling), *tadlis* (fraud), *dharar* (danger), *zulm* (injustice), and *haram* can provide a sense of comfort, security and mutual benefit. Therefore, the advantages of Sharia FinTech that must be carried out by Islamic

financial institutions, both banking and non-banking, such as LKMS, need to carry out the mandate of the regulation. That way, said Ronald Yusuf Wijaya (2023), Sharia FinTech Startups can compete with similar companies in a healthy manner and it is certain that the opportunity for the Sharia FinTech industry to grow exponentially is very open instead of the existence of the Islamic FinTech Startup industry which can be aligned with the global financial industry. Sharia FinTech Startups during the Covid-19 pandemic were able to grow faster for 7 years, even until the regulators were overwhelmed with dealing with such large transactions (see Table 1).

Table 1. Funding for Startups by Sector, Quarter III 2021

No	Name	Value / US\$ Million
1	Fintech	425
2	Logistics	136
3	Online wholesale	84
4	Social trading	48
5	online media	40
6	E-commerce enablers	36
7	Crypto	35
8	Wealth management	35
9	Agritech	35
10	Other	100

From Table 1 above, it can be seen that FinTech Startups have great potential for development with a funding investment value of US\$425 million, legitimizing the use of Sharia FinTech to play a role. Ronald Wijaya as general chairman of the Indonesian Sharia FinTech Association emphasized that such a large opportunity for the growth of Sharia FinTech faces many complaints, especially large financing for companies that are required to have a DPS (Sharia Supervisory Board). On the other hand, the obstacles faced by Sharia FinTech Startups are that most users are from an urban, upper middle class, relatively young, and technologically literate. According to Iman (2016) out of a total of 60 million MSME actors in Indonesia, 11 million MSMEs can only enjoy banking financing services, the rest are the target market for FinTech lending, where total financing needs are IDR 1,600 trillion in a year, the financing capacity of financial institutions only reaches IDR 600 Q., then this is a very open target market for FinTech lending (see Figure 6).[34]

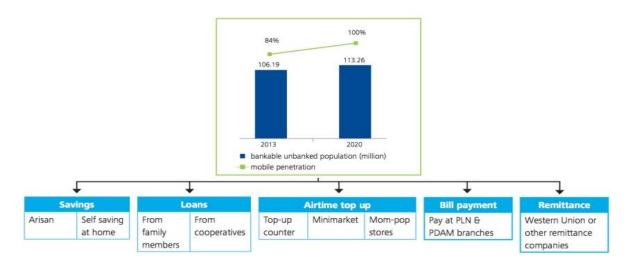


Figure 6. LKMS FinTech Startup Opportunities

From Figure 6 above, the opportunities for FinTech Startup for Islamic microfinance institutions apart from functioning as bankable can also function digitally as 1) competitiveness, 2) financing, 3) airtime top-up, 4) bill payments, and 5) remittances. Business elements through the FinTech Startup LKS get great opportunities, especially in financing assistance from family members and companies, as well as other services based on digital usage fees. In addition to utilizing social crowdfunding from zakat, infaq, alms, and endowments, LKMS may do so to play their duties and functions as sharia instrument tools.

3. Conclusion

The use of financial technology (FinTech) in startups of Islamic microfinance institutions in exploiting a broad market niche in Indonesia is very potential, it is demanded that LKMS such as BMTs must be able to use digital platforms in marketing innovative products and their development. Despite the fact that there are for the most part restricted HR, LKMS need to synergize with FinTech New businesses in working on the nature of their innovation.[35] BMTs as LKMS are required to be able to adapt to the times, so BMTs need to collaborate, and even have to side by side as well as users of sustainable technology (Ascarya, 2022). In the Industry 4.0 era marked by the progress of FinTech Startups, BMT must play an active role in engineering various business strategies to achieve double goals, namely social and commercial.[36] The monopoly of Islamic banking financial institutions on financial services is out of date in this [37], so the seriousness of BMT in implementing startup financial technology must be accompanied by improving the quality of human resources and the performance of asset management.[38]

References

- [1] A. Aziz, Fintech dan Keuangan Syariah: Menetapkan Parameter Syariah, 2022.
- [2] A. Aziz, "Promising business opportunities in the industrial age 4.0 and the society era 5.0 in the new-normal period of the covid-19 pandemic," *Scholarly Journal of Psychology and Behavioral Sciences*, 2021.
- [3] A. Aziz, Kinerja Koperasi Syariah, 2021.
- [4] A Ascarya, & A Sakti, Designing micro-fintech models for Islamic micro-financial institutions in Indonesia. International Journal of Islamic and Middle Eastern Finance and Management.
- [5] P Mu& C Leong, "Novel mechanisms of scalability of financial services in an emerging market context: Insights from Indonesian Fintech Ecosystem," *International Journal of Information Management*, vol. 61, p. 202403, 2021.
- [6] S Batunanggar, Fintech development and regulatory frameworks in Indonesia (No. 1014), Abdi Working Paper Series, 2019.
- [7] C Hendriyani, & S U J Raharja, "Business agility strategy: Peer-to-peer lending of Fintech startup in the era of digital finance in Indonesia," *Review of Integrative Business and Economics Research*, vol. 8, pp. 239-246, 2019.
- [8] R I Tripalupi, L Yulianti, & D D Naafisah, "Optimization of Financial Technology as an Opportunity for Development of Islamic Microfinance Institutions," *International Journal of Artificial Intelligence Research*, vol. 6, no. 1, 2023.
- [9] A. Singapurwoko, "Do Financial Technology Startups Disrupt Business and Performance of Financial Institutions in Indonesia?," *International Journal of Business & Management Science*, vol. 9, no. 1, 2019.
- [10] R R Suryono, I Budi, & B Purwandari, "Detection of fintech P2P lending issues in Indonesia. Heliyon," *Heliyon*, vol. 7, no. 4, p. e06782, 2021.
- [11] D C Darma, M A Kadafi, D Lestari, & U Mulawarman, , "). FinTech and MSMEs Continuity: Applied in Indonesia," *International Journal of Advanced Science and Technologi*, vol. 29, no. 4, pp. 4676-4685, 2020.
- [12] D Agustia, & N Anridho, "Financial Inclusion: Does Fintech Help in Indonesia?," in *In Financial Technology and Disruptive Innovation in ASEAN*, IGI Global, 2020, pp. 149-165.
- [13] M. Rahmi, "Fintech for Financial Inclusion: Indonesia Case," in 1st International Conference on Economics, Business, Entrepreneurship, and Finance (ICEBEF 2018), Atlantis Press, 2019, pp. 805-807.
- [14] A. Sakti, Designing Micro-Fintech Models for Islamic Micro Financial Institution In Indonesia (No. WP/09/2019)., 2019.
- [15] F A Hudaefi, M K Hassan, & M Abduh, Exploring the development of Islamic fintech ecosystem in Indonesia: a text analytics. Qualitative Research in Financial Markets, (ahead-of-print)., 2023.
- [16] B. T. F. T. C. &. C. L. P Muthukannan, The concentric development of the financial technology (Fintech) ecosystem in Indonesia., 2017.
- [17] I. Atikah, "Consumer protection and fintech companies in indonesia: innovations and challenges of the financial services authority," *Jurnal Hukum dan Peradilan*, vol. 9, no. 1, pp. 132-153, 2020.
- [18] A. Suleiman, Chinese Investments in Indonesia's Fintech Sector: Their Interaction with Indonesia's Evolving Regulatory Governance (No. 23). Policy Paper., 2019.
- [19] M K Hassan, M R Rabbani, M Rashid, & I Trinugroho, "Islamic Fintech, Blockchain, and Crowdfunding: Current Landscape and Path Forward. In FinTech in Islamic Financial Institutions: Scope, Challenges, and Implications in Islamic Finance," in *Islamic Fintech, Blockchain, and*

- Crowdfunding: Current Landscape and Path Forward, Cham, Springer International Publishing, 2022, pp. 307-340.
- [20] "The Evolution of Fintech: A New Post-Crisis Paradigm?," *Journal The HKU Scholars Hub The University of Hongkong*, 2015.
- [21] V Stefanny & B Tiara, "Overview Perbandingan Jumlah User Fintech (Peer-To-Pee Lending) Dengan Jumlah Pengguna Internet Di Indonesia Pada Masa Pandemi Covid-19," *Insan Pembangunan Sistem Informasi dan Komputer (IPSIKOM)*, vol. 9, no. 1, 2021.
- [22] Kagan, Julia. Financial Technology. Fintech Defintion, Investopedia., 2020.
- [23] Lee, I., & Shin, Y. J. Fintech: Ecosystem, business models, investment decisions, and challenges. Business horizons, vol. 61, no. 1, p. 35-46., 2018.
- [24] Palinggi, S., & Allolinggi, L. R. Analisa Deskriptif Industri Fintech di Indonesia: Regulasi dan Keamanan Jaringan dalam Perspektif Teknologi Digital. Ekonomi Dan Bisnis UPNVJ, 6(2), p. 177-192., 2019.
- [25] Njatrijani, R.. Perkembangan Regulasi Dan Pengawasan Financial Technologydi Indonesia. Diponegoro Private Law Review, vol. 4, no. 1, 2019.
- [26] Disemadi, H. S., & Regent, R. Urgensi Suatu Regulasi yang Komprehensif Tentang Fintech Berbasis Pinjaman Online Sebagai Upaya Perlindungan Konsumen di Indonesia. Jurnal Komunikasi Hukum (JKH), vol. 7, no. 2, p. 605-618, 2021.
- [27] Fachrurrazy, M., & Siliwadi, D. N. Regulasi Dan Pengawasan Fintech Di Indonesia: Persfektif Hukum Ekonomi Syariah. AL-SYAKHSHIYYAH Jurnal Hukum Keluarga Islam dan Kemanusiaan, vol. 2, no. 2, p. 154-171, 2020.
- [28] Parsaulian, B. Regulasi Teknologi Finansial (Fintech) Di Indonesia. Fundamental: Jurnal Ilmiah Hukum, vol. 10, no. 2, p. 167-178, 2021.
- [29] Sitompul, M. G. Urgensi Legalitas Financial Technology (Fintech): Peer To Peer (P2P) Lending Di Indonesia. Jurnal Yuridis Unaja, vol. 1, no. 2, p. 68-79.
- [30] Lubis, C., Nugroho, L., Fitrijanti, T., & Sukmadilaga, C. Peluang Pengusaha Mikro dan Kecil (UMK) Menggunakan Layanan Digital Lembaga Keuangan Mikro Syariah. Jurnal Al-Qardh, vol. 5, no. 1, p. 56-68, 2020.
- [31] Mohamed, Hazik, and Ali, Hassnian. Blockchain, Fintech, and Islamic Finance. Blockchain, Fintech, and Islamic Finance: Building the Future in the New Islamic Digital Economy. Walter de Gruyter GmbH & Co KG, 2018.
- [32] Alexander Fong, Alexander. (2018). Blocking the Chain: Regulating the Initial Coin Offering. De Lege Ferenda (1). 62.
- [33] Nugroho, Lucky et al. (2019). Socialization of Mobile Banking and Internet Banking for Mikro and Small Entrepreneur (Gender and Business Sector Perspective Kemayoran Night Market Community)," ICCD 2, no. 1: 419–26.
- [34] Iman, N. Financial technology dan lembaga keuangan. Gathering Mitra Linkage Bank Syariah Mandiri, Yogyakarta,p. 6, 2016.
- [35] Trimulato, T. Fintech for Sharia Micro Finance Institution: Qualitative Analysis toward Utilization of Financial Technology in BPRS and BMT. AL-FALAH: Journal of Islamic Economics, vol.4, no. 2, p. 123-144, 2019.
- [36] Hardi, E. A. Daya tahan Baitul Mal Wat Tamwil dalam arus revolusi industri 4.0. Jurnal Ekono Insentif, vol. 14, no. 2, p. 77-90, 2020.
- [37] Abdul Aziz, A.Z., Abas Hidayat, A. H., Ellin Herlina, E. H., & Wanti Ernawati, W. E. Oligopoly Market and Monopolistic Competition in the Digital Era: Shariah Economic Perspective. Quality Access to Success, vol. 24, no. 193, p. 61-67, 2023.

[38] Latifah, E. The Role of Fintech (Financial Technology) in the Mobile Banking-Based Non-Cash Payment System (Actionspay) in Islamic Microfinance Institutions. Indonesian Journal of Banking and Financial Technology, vol. 1, no. 1), p. 1-12, 2023.