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Strategies For The Development Of Sharia Fintech In Indonesia

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Abstract. *Financial Technology (fintech) becomes one proof of the development of digital technology which provides innovation and impact on all economic activities. This fact confirms the theory of disruption, which claims innovation successfully transforms a system by introducing practicality, faster, cheaper, and better. Indonesia as a country with largest Muslim population in the world is home to the emergence of sharia fintech. By using the method of Analytic Network Process (ANP) this research aims to describe the problems, solutions and strategies as acceleration factors of sharia fintech development in Indonesia. Analysis results of data processing of this study show the main problems lies in the regulation, institutions, consumers, and infrastructure. The solution to answer the problems of regulation, institutions, consumers, and infrastructure. Priority issues show regulation as the main problem and the consumer as the main solution. the strategy is sorted from the results of data processing based on priority scale consists of special policies by the government for Shariah fintech in Indonesia, socialization and education to the public about Shariah fintech reaching to the countryside, improving the quality of human resources regarding technology and Sharia principles, synergy of Shariah fintech practitioners with Shariah financial stakeholders and competitive research and development in supporting the development of Shariah fintech.*

Keywords: *Financial technology, crowd funding, peer to peer lending, sharia fintech, ANP*

Abstrak. *Teknologi Keuangan (fintech) menjadi salah satu bukti perkembangan teknologi digital yang memberikan inovasi dan dampak pada semua aktivitas ekonomi. Fakta ini mengonfirmasi teori disrupsi, yang menyatakan bahwa inovasi berhasil mengubah sistem dengan memperkenalkan kepraktisan, kecepatan, biaya yang lebih rendah, dan kualitas yang lebih baik. Indonesia sebagai negara dengan populasi Muslim terbesar di dunia menjadi tempat munculnya fintech syariah. Dengan menggunakan metode Analytic Network Process (ANP), penelitian ini bertujuan untuk menggambarkan masalah, solusi, dan strategi sebagai faktor pendorong perkembangan fintech syariah di Indonesia. Hasil analisis pemrosesan data penelitian ini menunjukkan bahwa masalah utama terletak pada regulasi, institusi, konsumen, dan infrastruktur. Solusi untuk menjawab masalah regulasi, institusi, konsumen, dan infrastruktur. Masalah prioritas menunjukkan regulasi sebagai masalah utama dan konsumen sebagai solusi utama. Strategi disusun berdasarkan hasil pengolahan data berdasarkan skala prioritas, meliputi kebijakan khusus pemerintah untuk fintech syariah di Indonesia, sosialisasi dan pendidikan kepada masyarakat tentang fintech syariah hingga ke daerah pedesaan, peningkatan kualitas sumber daya manusia terkait teknologi dan prinsip syariah, sinergi antara praktisi fintech syariah dengan pemangku kepentingan keuangan syariah, serta penelitian dan pengembangan yang kompetitif dalam mendukung perkembangan fintech syariah.*

Kata Kunci : *Teknologi keuangan, pendanaan massal, pinjaman peer-to-peer, fintech syariah, ANP*

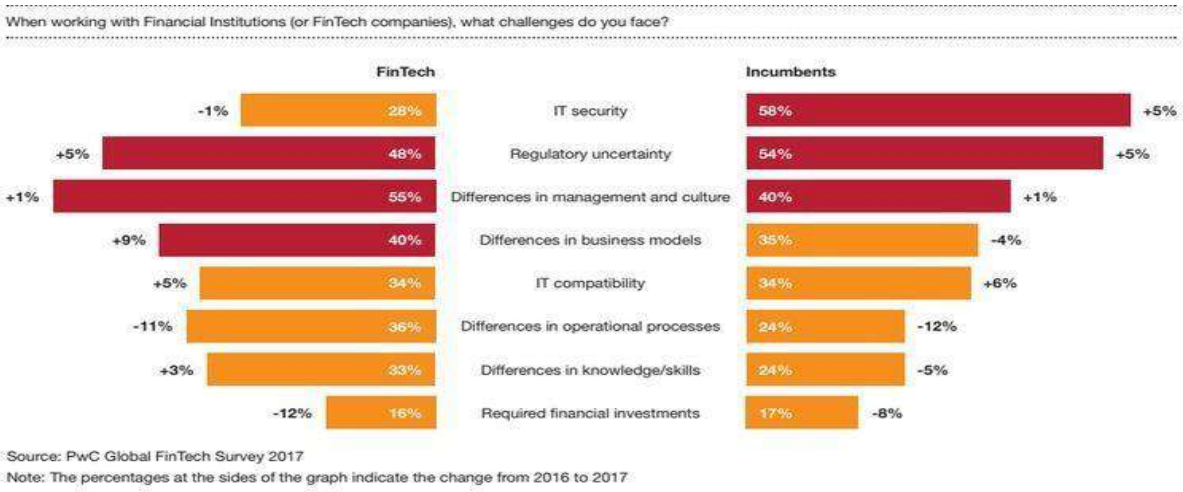
Introduction

Digital technology has brought innovation to all economic activities. It has had an impact on the trade, agriculture, transportation, and finance sectors. One of the sectors that has been developed is *financial technology*, better known as *fintech*, as one of the innovations in today's digital technology. Financial technology is a business that focuses on providing financial services using software and modern technology (IOSCO, 2017). According to Wonglimpiyarat (2017), *fintech* has gained global attention as a challenging technology that will empower companies to compete effectively in the twenty-first century. Governments around the world have taken note of this challenge and are designing policies and regulations to support the development *of fintech*.

The Financial Stability Board (FSB) has mapped the *fintech* landscape into four categories, namely: first, *payment, clearing,* and *settlement;* second, *deposits, lending,* and *capital raising;* third, *market support*; and fourth, *investment* and *risk management*. The most rapid development in the *fintech* landscape itself is in *the payment* system landscape, as people are becoming accustomed to cashless transactions and *crowd funding* or *peer-to-peer lending*, which are like the functions of banks. Furthermore, traditional financial institutions are known to be reluctant to extend credit lines and loans to certain population groups based on the lack of certain parameters used in algorithm-based creditworthiness assessments, in addition to macroeconomic conditions. One way in which technology and the rapid expansion of social media have contributed to overcoming this form of financial exclusion is through *peer-to-peer (P2P)* lending platforms, where individuals can obtain funded loan applications within two weeks (Loureiro and Gonzalez, 2015).

As *for the crowd funding model*, it requires participants to not only contribute knowledge and effort but also play a promotional and investment role to support initiatives funded by the crowd. This broader type of participation is likely driven by other types of motivation (Ordanini et. al, 2011). As a result, bankers realized in 2020 that 23% of their business could be at risk due to further *fintech* development (PwC, 2017). This is because individuals in the digital era prefer online-based products and services. This trend will influence the development *of fintech* in changing the way

customers access financial products and services.



On the other hand, despite the high potential of fintech at present, the graph above shows that there are several challenges that fintech (financial technology) and incumbents (existing players) must face. According to Ng and Kwok (2017), fintech regulations still lack standards and are considered challenging due to the complexity of data and new knowledge involved.

In Indonesia, there are two financial institutions that play a role in handling regulations in the financial sector. Bank Indonesia (BI) and the Financial Services Authority (OJK) have important roles in regulating the financial sector in Indonesia. In its activities, *fintech* conducts payment and lending processes. Therefore, the

Figure 1.1 Challenges for Fintech-Based Companies

(Source: PwC, 2017)

lending system *(funding and lending)* is handled by the OJK, and *the payment system* is handled by BI. Several regulations have been issued by the competent authorities, such as Financial Services Authority Regulation (POJK) Number 77/POJK.01/2016 concerning Information Technology-Based Money Lending Services (LPMUBTI).

Indonesian *Fintech* (Financial Technology) transactions in 2017 are estimated to reach US$ 18.65 billion. This figure will jump to US$ 37.15 billion in 2022, with *a Compound Annual Growth Rate* (CAGR) of 18.8 percent from 2017 to 2021. The large population and the fact that many Indonesians still do not have access to financial institutions pose challenges for *fintech* startups in the country (Databoks, 2017). With

these figures, fintech companies in Indonesia must have clear and appropriate regulations. Particularly in the development *of fintech lending*, the aggregate number of lenders as of February 2018 was 128,119 people, an increase of 26.93% *ytd*. Meanwhile, the aggregate number *of borrowers* as of January 2018 was 546,694 people, an increase of 110.56% *ytd*. Thus, the aggregate number of loans disbursed as of February 2018 was Rp 3. 54 trillion, an increase of 38.23% *ytd*. The lowest average loan value was Rp 243,000, the lowest average loan value was Rp 34.69 million, and the average loan value disbursed was Rp 56.48 million (OJK, 2018).

It should be noted that the global development of *fintech* is inseparable from the development of Sharia-based *fintech*. All OIC members contributed 15.67% of the world's GDP or around US$7.4 trillion. Adaptation to technology is also quite strong. In the 2016-2017 Global Islamic Economy Infographic. There are 1.2 billion Muslims who use mobile phones and are connected to the internet and social media (Reuters, 2017). This data shows that the digital era is also being embraced by Muslims globally using technology in their daily lives.

For this reason, the development of Sharia *fintech* is currently also growing, as is *fintech* in general. Of course, there will be differences in the development strategies of conventional *fintech* and Sharia *fintech*. There are many challenges faced by Sharia *fintech* itself, as evidenced by the fact that of *the* 46 *fintech startups* in Indonesia, only one Sharia *fintech* is registered with the Financial Services Authority (OJK). Meanwhile, there are 52 *fintech* companies currently in the registration process and 31 *fintech* companies interested in registering, bringing the total to 129 companies in the registration process and interested in registering (OJK, 2018). The DSN-MUI has issued Fatwa No. 117/DSN-MUI/II/2018 concerning information technology-based financing services based on Sharia principles.

The basic concept of Sharia Economics is financial activities based on technology without the elements of usury, gambling, and uncertainty (Ali et al, 2020; Ali & Hassan, 2019). In addition, Sharia principles must be upheld even though these activities are technology-based. Therefore, research on the development strategy of Islamic *fintech* in Indonesia needs to be conducted so that Muslims can keep up with technological developments and use them with the availability of *fintech-based*

financial institutions whose transactions are in accordance with Islamic principles.

Based on the above background, the objectives of this study are:

1. What are the issues that hinder the development of Sharia *fintech* in Indonesia?
2. What are the solutions to optimize the development of Sharia *fintech* in Indonesia?
3. What are the priority problems and solutions in the development of Sharia *fintech* in Indonesia?
4. What strategies can be implemented to support the development of Sharia *fintech?*

Research Methodology

Sources and Methods of Data Collection

The data used in this study are primary and secondary data. The researcher obtained secondary data from literature, while primary data were obtained through: (1) In-depth interviews, which are in-depth interviews to gather detailed information about the subject matter discussed in this study. Stage (2) through Expert and Practitioner Surveys, which is data collection focused on academics, regulators, and Sharia fintech practitioners. Data and information regarding the opinions represented by experts and practitioners are compiled in the form of a framework model. The next step is to analyze the results obtained using the "Super Decision" software.

The following is a list of experts and practitioners who participated as respondents in this study:

Table 2. 1 Experts and Practitioners Responding to the Study

No.	Name	Description
1.	Dr. Murniati Mukhlisin, M.Acc	Academic and Advisor to the *of Fintech* Syariah Indonesia
2.	Yaser Taufik Syamlan, CIFP	Academic

3.	Alvin Taulu	Head of Licensing and Supervision *Fintech* Directorate of IKNB Financial Services Authority (OJK)
4.	Ir. H Agus Haryadi, A.A.A.I.J., F.I.I.S., A.S.A. I	Head of Sharia IKNB DSN MUI
5.	Ronald Yusuf Wijaya	CEO of Ethis Crowd and Chairman of AFSI
6.	Lutfi Adhiansyah	CEO of Ammana and Vice Chairman of of AFSI
7.	Harry Haryono	CEO of Danakoo

Overview of the Analytic Network Process (ANP) Method

Analytic Network Process or ANP, according to Ascarya (2005), is a new qualitative method approach, non-parametric and non-Bayesian, for a decision-making process that provides a general framework for treating decisions without making assumptions about the independence of elements at a higher level from elements at a lower level and about the independence of elements within a level. ANP is one of the *multiple criteria decisions making* (MCDM) methods that has been developed and is a new approach to qualitative methods, which is a further development of the previous method, namely the Analytic Hierarchy Process (AHP).

Research Stages

The stages in the ANP method include:

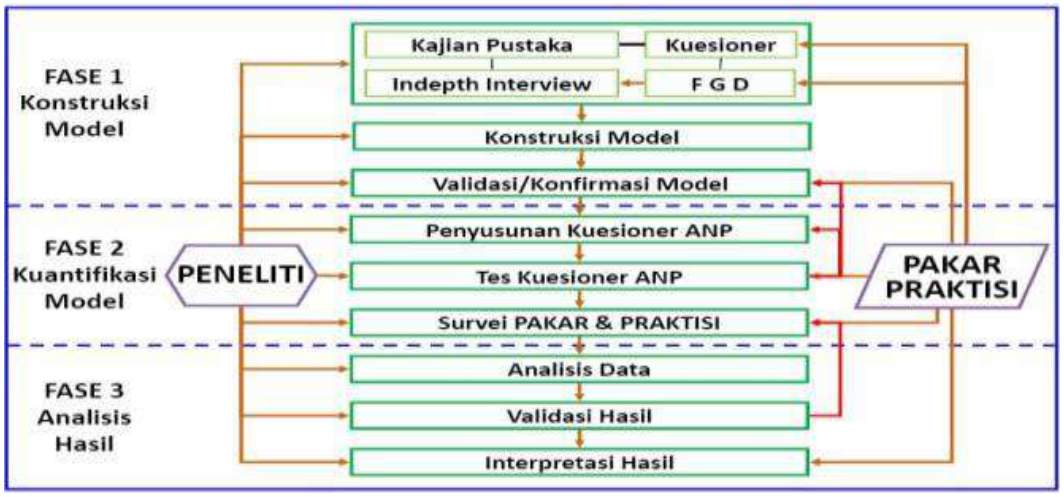


Figure 2.1 Stages

As shown in the figure above, there are three stages in the ANP method, namely:

1. ANP Model Construction

   In this stage, the problem to be studied is constructed. Theoretically, ANP model construction can be done in three ways, namely through literature review, literature review and expert interviews, and through Forum Group Discussion (FGD).

2. Model Quantification

   After the ANP model is approved, an ANP questionnaire is developed. The questionnaire is designed according to the ANP framework with a numerical scale. The questionnaire is then distributed to respondents.

3. Analysis of Results

   After the questionnaire is filled out by experts and practitioners, the data received is processed using Super Decision software to find the *rater agreement* and *geometric mean* values. *Rater agreement* is the level of agreement among respondents on an issue, while geometric mean is used to determine the priorities of the respondent group regarding the issues studied in a piece of research.

Data Processing

Data and information regarding the opinions represented by regulators, academics, and practitioners were compiled in a framework model. Once the questionnaire results regarding opinions had been collected, the next step was to

process the data obtained using Microsoft Excel and Super Decision software. The questionnaires are processed into a pairwise comparison, both between elements within clusters and between clusters, to determine which has a greater influence from one perspective. Respondents are asked to perform pairwise comparisons on the prepared questionnaires by selecting a numerical rating scale, ranging from 1 to 9. The following explains the numerical scale:

Table 12.2 Definition of Rating Scale and Numerical Scale

1	2	3	4	5	6	7	8	9
Equally Significant Impact	Slightly Greater Impact		Greater Influence		Much Greater Influence		A Much Greater Impact	

Analysis of Results

The ANP network results from several respondents will be combined. The data will then be processed using Microsoft Excel, and to obtain quantified results, the next step is to calculate the Rater Agreement and Geometric Mean.

Results and Discussion

Problem Decomposition

From the results of literature reviews and interviews, the decomposition of the main problems can be categorized into two aspects, namely problems into four main clusters, solutions into four main clusters, and strategies. The following is an explanation of the problems, solutions, and strategies for the development of Sharia *fintech* in Indonesia, namely:

Problems

In *the* problem *cluster,* there are four main clusters, namely *the* regulatory *cluster*, *the* institutional *cluster*, *the* consumer *cluster*, and *the* infrastructure *cluster*, containing a formulation of problems in the development of Sharia *fintech* in Indonesia.

1. **Regulatory Issues**
    a. Differences of opinion regarding permissible contracts

Sharia *fintech* that is not registered with the Financial Services Authority (OJK) is constrained in terms of contracts. Differences of opinion on which contracts are permissible and which are not. Thus, contracts that are considered permissible by fintech *companies* may not necessarily be in accordance with Sharia principles and therefore do not pass the selection process by the Financial Services Authority (OJK) (Adhiansyah, 2018) (Haryono, 2018).

b. Relatively high minimum capital requirements

The minimum capital required to register with the OJK is IDR 1 billion, and once registered, the minimum capital requirement is IDR 2.5 billion (Paren, 2018).

c. Data centers must be in Indonesia.

Technology-based companies need data centers to store their data. *Fintech* companies are required to store this data with data center companies in Indonesia. However, there are still few data center companies in Indonesia and the costs are high. Meanwhile, there are many data center companies abroad that have excellent systems and much lower costs (Adhiansyah, 2018).

2. Institutional Issues

a. Cyber risks

Because they are technology-based, security and privacy risks are much higher. All operations conducted using the internet are vulnerable to external and internal threats (Shahrokhi, 2008).

b. Limited Reach

Public awareness of *fintech is* low, resulting in limited reach for *fintech* (Adhiansyah, 2018) (Permana, 2018).

c. Weak Human Resources

Human resources that still lack understanding of Sharia principles. Thus, there is a lack of professionals in the management of Sharia *fintech* (Mukhlisin, 2018).

3. Microbusiness Issues

a. Low technological understanding

Indonesian society has a low understanding of technology. As a result,

consumers feel unfamiliar with and unable to use existing *fintech* services (Permana, 2018).

b. Lack of understanding of Sharia principles

Consumer understanding of Sharia principles is still lacking, leading them to believe that Sharia and conventional *fintech* have the same functions and that there is no difference between them (Wijaya, 2018).

c. Preference for traditional finance

The public's high level of trust in traditional financial services, which have been around longer than *fintech*, makes people more comfortable using traditional financial services (Permana, 2018).

4. Infrastructure issues

a. Weak internet network infrastructure

The internet network in Indonesia is not yet good enough to reach remote areas, meaning that not all Indonesians can access *fintech,* even though *fintech* aims to help the *unbankable. Broadband* internet penetration can still be improved, especially in border and rural areas (Adhiansyah, 2018) (Permana, 2018).

b. Weak population system infrastructure

A non-integrated population system allows people to easily duplicate their personal data. This makes it difficult to obtain credit bureau information on prospective borrowers (Adhiansyah, 2018).

c. Weak *cyber security* enforcement infrastructure

Cyber attacks can occur in all types *of fintech*, and this risk is escalating due to the increasing connectivity between one service and another (Gomber, 2017)

Solutions

This *cluster* contains solutions to address existing problems. These solutions include regulations, institutions, consumers, and infrastructure. The following is an explanation of the solution cluster:

1. Regulatory Solutions

a. Harmonization of contracts

Harmonization of contracts established by the Indonesian Ulema Council

(MUI) in accordance with Sharia principles so that Sharia fintech can comply with existing regulations (Haryono, 2018).

b. Regulatory Sandbox for *fintech startups*

Providing space for innovation and assistance so that new *startups* that have not yet obtained a license due to minimum capital constraints can continue to operate under OJK supervision (Permana, 2018).

c. Strengthening data *centers* in Indonesia

Strengthen the data center system in Indonesia so that *fintech* can obtain *low costs* and a good data center system (Adhiansyah, 2018).

2. Institutional Solutions

a. Risk mitigation

Enhanced risk mitigation for customer data confidentiality and security (Shahrokhi, 2008) (Taulu, 2018).

b. Enhancing the role of *data scientists*

With *big data* technology, the role *of data scientists* is very important in identifying consumer segments that need *fintech*. This ensures that efforts are on target (Ummah, 2017).

c. Education on Sharia principles

In-depth education for human resources working in Sharia fintech companies (Adhiansyah, 2018).

3. Consumer Solutions

a. Technology education

Technology education for the people of Indonesia so that they can become accustomed to using technology and keep up with current developments and lifestyles (Permana, 2017).

b. Education on the principles of Sharia *fintech*

Socialization of Sharia *fintech* so that the public understands the differences between Sharia and conventional fintech (Taulu, 2018).

c. Increasing the socialization of Sharia *fintech*

Increasing the socialization of Sharia *fintech* to the community. So that the community can understand that Sharia *fintech* can meet the needs of the

community in the era of current technological developments (Mukhlisin, 2018) (Wijaya, 2018).

4. Infrastructure Solutions

a. Improving Internet Networks

Improving the internet network in Indonesia so that all people can access the internet and use *fintech* services (Permana, 2018).

b. Accelerating towards population system integration

Accelerating the integration of population systems can help *fintech* companies access credit bureau information (Adhiansyah, 2018).

c. Improvements to *cyber security* systems

In response to the potential for fraud in *fintech*, a series of *cyber security* initiatives are considered important to prevent and mitigate these emerging risks in IT-driven operations and environments. The reliability of IT systems will prevent *cyber attacks* (Ng & Kwok, 2017) (Mukhlisin, 2018).

Strategy

This *cluster* contains various strategies that can be implemented by stakeholders such as regulators, practitioners, and academics. These strategies can be implemented to resolve issues related to the development of Sharia *fintech* in Indonesia. These strategies include special policies, synergy among Sharia *fintech* players, human resource development, socialization and education, and finally, *competitive research and development*. The following is an explanation of these strategies:

1.* Special policies by the government that support Sharia *fintech.

Conventional *fintech* and Sharia *fintech* have different regulations. Therefore, the regulations that are made and enacted must also be different. Sharia *fintech* regulations must emphasize Sharia principles (Mukhlisin, 2018).

2. Synergy between Sharia *fintech* players and Sharia financial *stakeholders*

Synergy between Sharia *fintech* players and Sharia financial *stakeholders* can help the development of Sharia *fintech* (Wijaya, 2018) (Syamlan, 2018).

3. Improving the quality of human resources in terms of technology and Sharia

principles.

Improving the quality of human resources is essential to provide the best services and innovations in Sharia *fintech* (Taulu, 2018).

4. **Socialization and education to the public about Sharia *fintech* into the far corners of the country.**

   Socialization to the public about Sharia *fintech* so that it can be understood by the public throughout the country. This is because, in essence, *fintech* is here to help people who cannot apply for financing from banks because *they are unbankable* (Adhiansyah, 2018) (Wijaya, 2018).

5. ***Competitive research and development* in supporting the development of *fintech Sharia.***

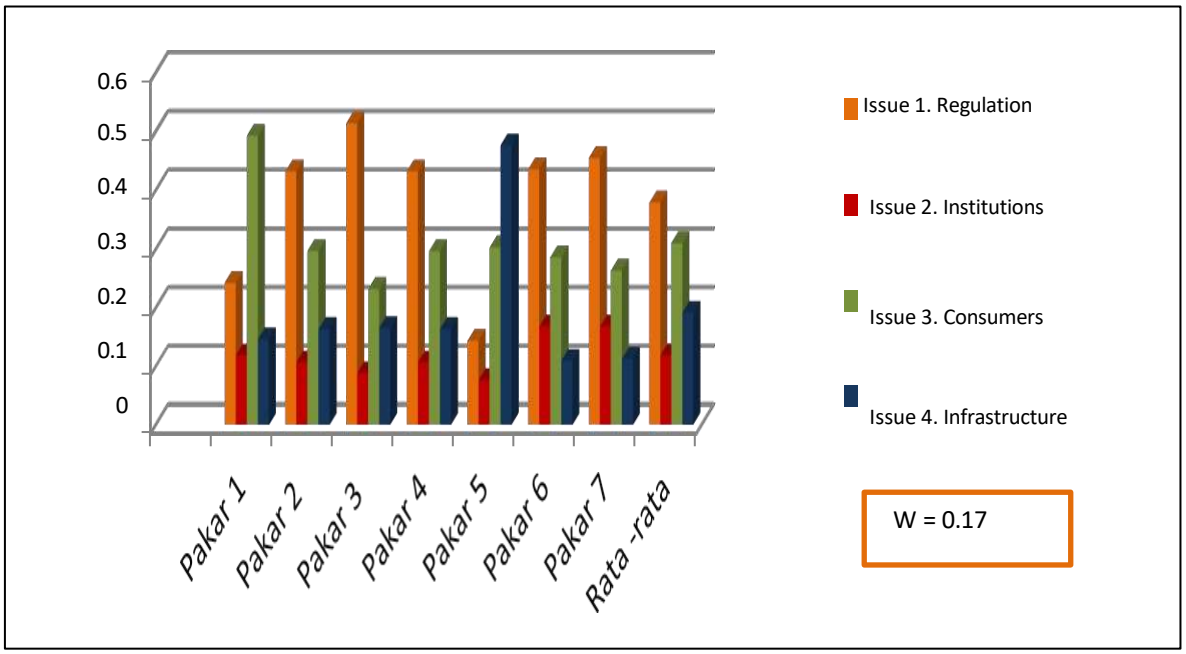
   Research can investigate the potential for *fintech* and reveal how it can compete and how *fintech companies* can collaborate with each other. In addition, it can identify the issues that need to be addressed so that the development *of fintech* is tailored to the needs of the community (Gomber et al., 2017) (Ummah, 2018).

Synthesis and Analysis

This subchapter will explain the overall results of respondents' tendencies regarding issues and strategies for the development of Sharia *fintech* in Indonesia, as indicated by the geometric mean. The level of agreement or *Rater Agreement* among respondents is indicated by Kendall's *coefficient of concordance* (W).

***Rater Agreement* Results for Problem Clusters**

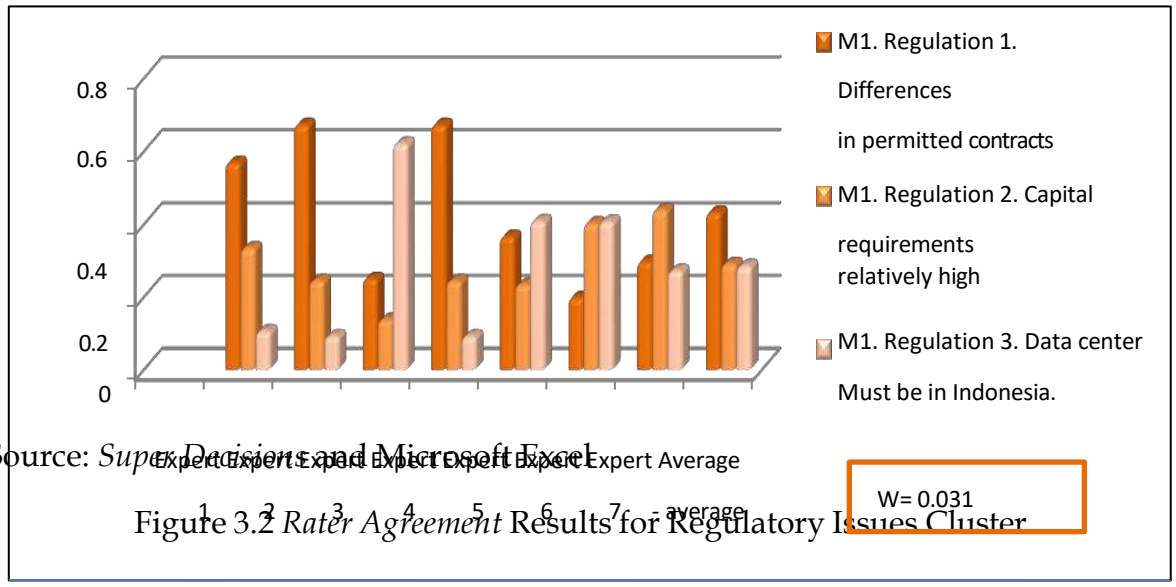
Based on the results of data processing on the issues, the respondents had the same opinion in assessing the problem clusters. The *Rater Agreement* results with a value of W= 0.17 indicate that the level of agreement among respondents in assessing the problems in the cluster is quite high. This can be seen in Figure 3.1, where the average respondent agrees that regulatory issues are the main problem, followed by consumer, infrastructure, and institutional issues. This is confirmed by Adhiansyah (2018) and Wijaya (2018), who are Sharia *fintech* practitioners in Indonesia. Both confirm that slow regulation will affect the development *of fintech,* especially Sharia *fintech,* which has different regulations from conventional *fintech* because it must be based on Sharia principles.



Source: *Super Decisions* and Microsoft Excel

Figure 3.1 Results of *Rater Agreement* Problem Cluster

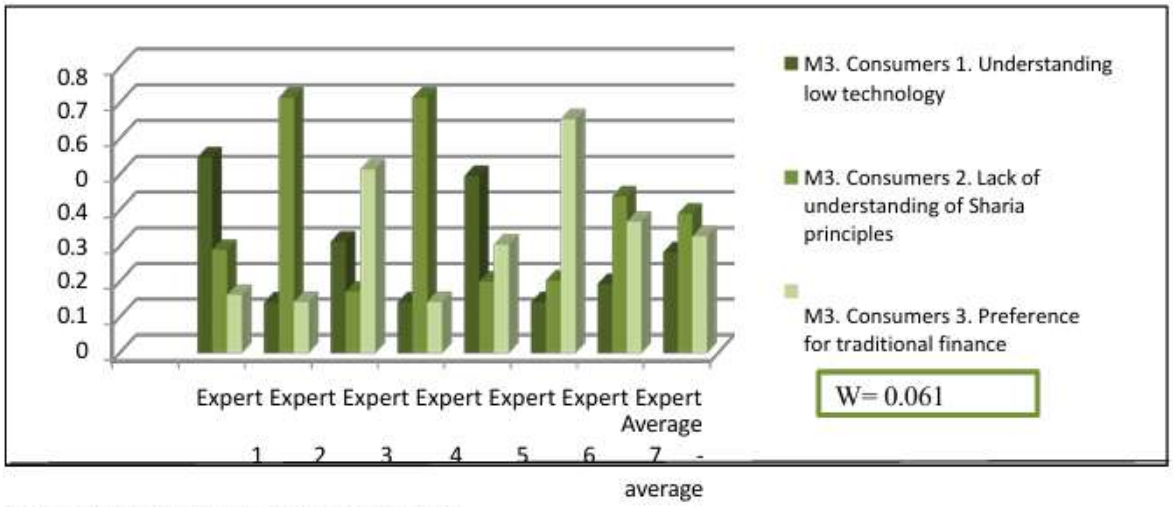
As seen in Figure 3.1, five respondents agreed that the main problem hindering the development of Sharia *fintech* in Indonesia is regulation. Furthermore, Figure 3.2 shows the *cluster* results for regulatory issues. The *rater agreement* is quite low at W = 0.031. Differences of opinion regarding permissible contracts are the main issue in *the* regulatory *cluster*. This poses a challenge for *fintech companies* that want to use Sharia principles. This is because contracts that are considered to comply with Sharia rules often fail to pass the qualification test.



Source: *Super Decisions* and Microsoft Excel

Figure 3.2 *Rater Agreement* Results for Regulatory Issues Cluster

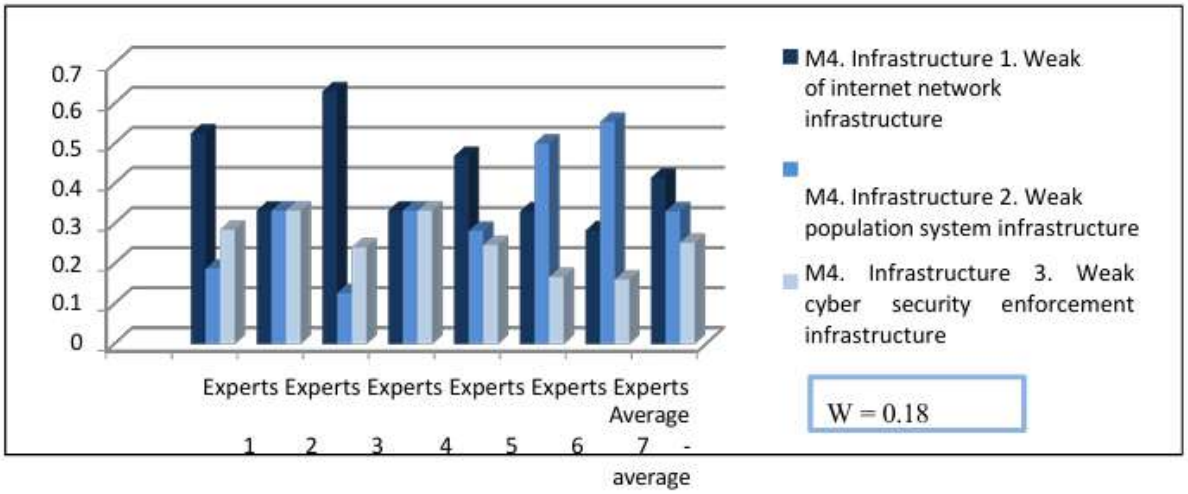
Furthermore, all six respondents agreed that the next issue after regulation is consumers. However, as shown in Figure 3.3, *the rater agreement* on *the* consumer *cluster* is low, only W = 0.061. The main problem lies in *the* second *node*, namely the lack of understanding of Sharia principles.



Source: *Super Decisions* and Microsoft Excel

Figure 3.3 *Rater Agreement on* Consumer Issues *Cluster*

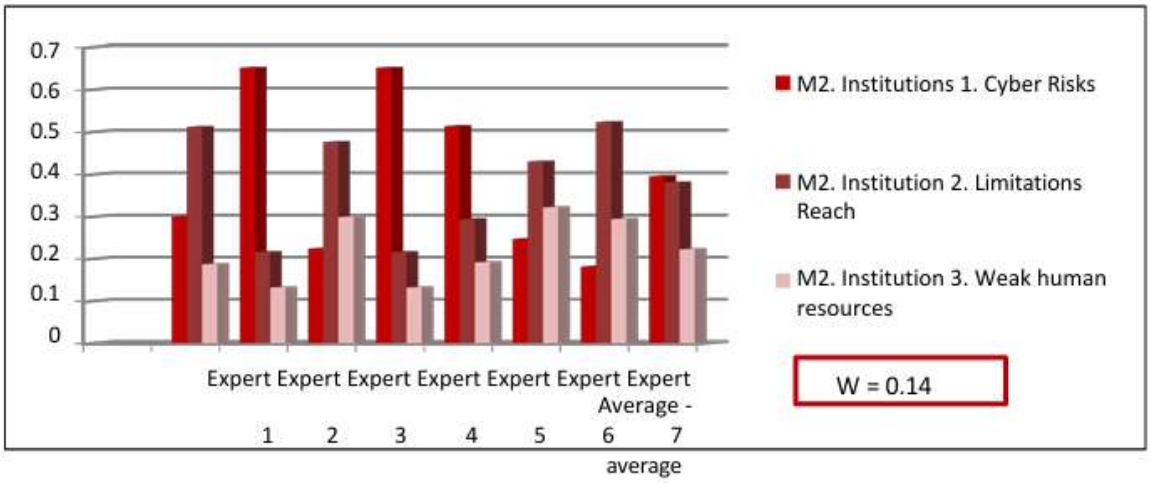
Next is the infrastructure *cluster* issue. With a high *rater agreement* level of W= 0.18, the average respondent stated that the main problem lies in the weak internet network infrastructure. The internet network is the focus because *fintech* is part of technological advancement, so it can only be accessed via the internet network. When the internet network is not good, it will be difficult for the public to access *fintech*, especially for people in remote areas. As stated by Permana (2017), *broadband* internet penetration can still be improved, especially in border and *rural* areas. The next problem in *the* infrastructure *cluster* is the weak population system, which makes it difficult for *fintech* companies to *screen* prospective borrowers because it allows for duplicate information. Additionally, there is weak enforcement *of cybersecurity*. *Cyberattacks* can occur across all types of fintech, especially as risks escalate due to the increasing interconnectedness between services (Gomber et al., 2017).



Source: *Super Decisions* and Microsoft Excel

Figure 3. 4 *Rater Agreement on* Infrastructure Problem *Cluster*

The institutional *cluster* is the last *cluster* in the development of Sharia *fintech* in Indonesia. With *a rater agreement* of 0.14 on average, respondents stated that *cyber risk* is the main problem in *the* institutional *cluster*.



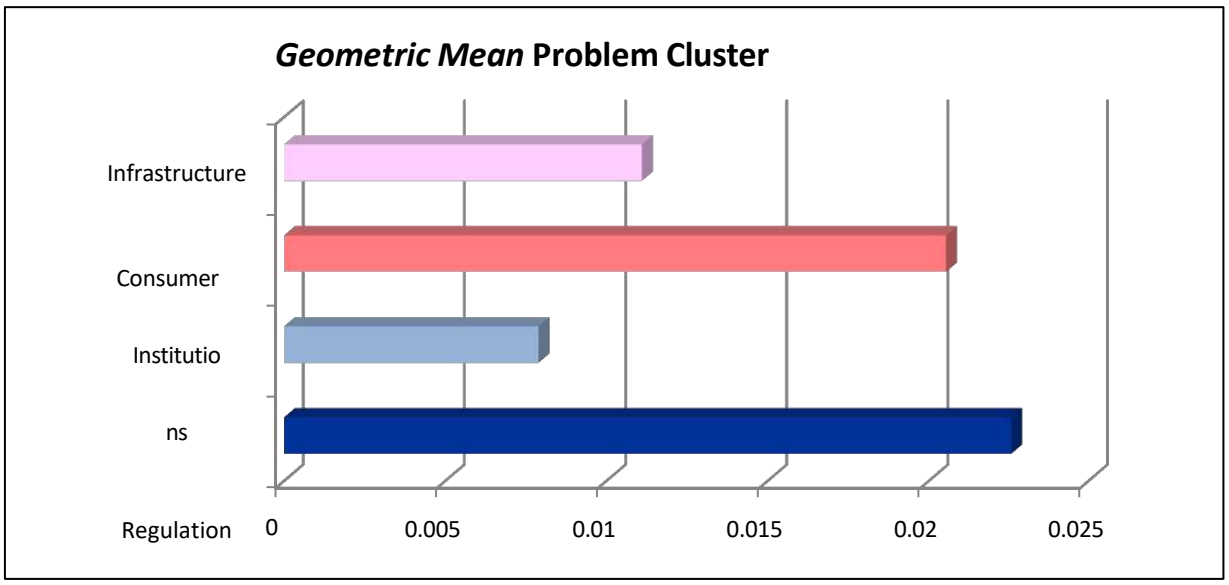
Source: *Super Decisions* and Microsoft Excel

Figure 3.5 *Rater Agreement on* Institutional Problem *Clusters*

This is in line with Shahrokhi's (2008) opinion that technology-based companies have much higher security and privacy risks. All operations involving the internet are vulnerable to external and internal threats. Furthermore, limited reach and weak human resources are problems faced by the institutional *cluster*.

***Geometric Mean* Results of Problem Clusters**

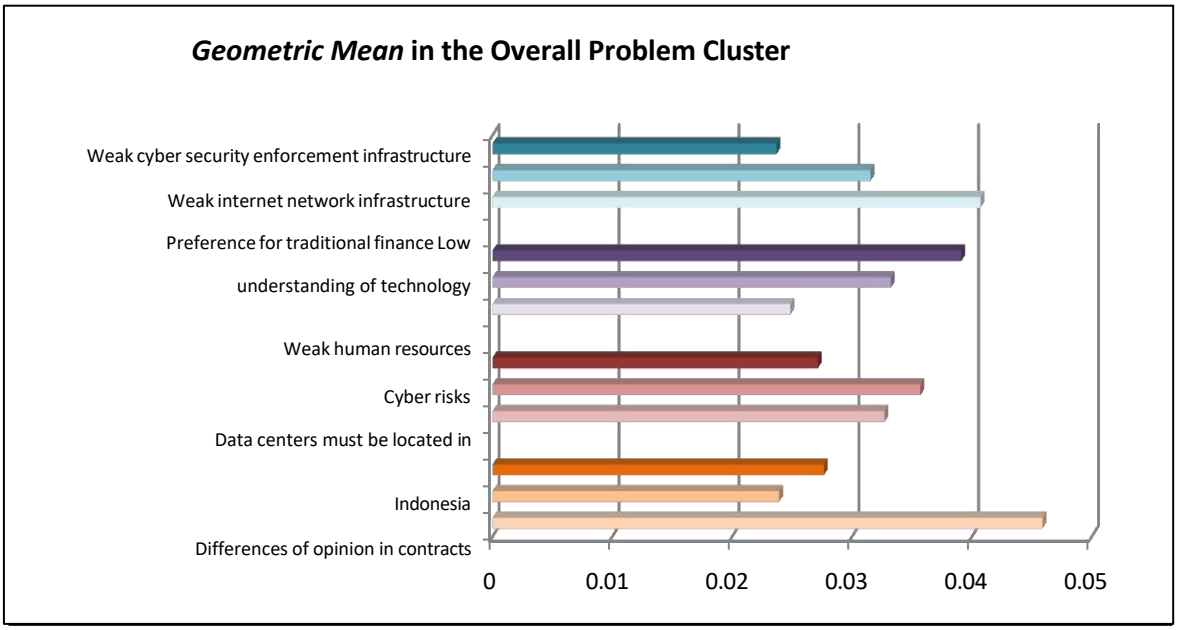
The overall results from all respondents, as seen from the *geometric mean* value, show that the priority in the problem *cluster* is regulation as the top priority, followed by *the* consumer *cluster* in second place, *the* infrastructure *cluster* in third place, and finally *the* institutional *cluster* (Figure 3.6).



Source: *Super Decisions* and Microsoft Excel

Figure 3.6 *Geometric Mean* Problem Cluster

Overall, there are four main problem *clusters*, with regulation ranking first with a score of 0.023. Second is consumers with a score of 0.021, third is infrastructure with a score of 0.011, and last is institutions with a score of 0.0078. Respondents consider regulation to be the main problem in the development of Sharia fintech in Indonesia. The regulatory policies that are being made will significantly affect the movement of Sharia *fintech*. The Financial Services Authority (OJK) and the DSN MUI play a role in determining appropriate and timely regulations (Figure 3.6).



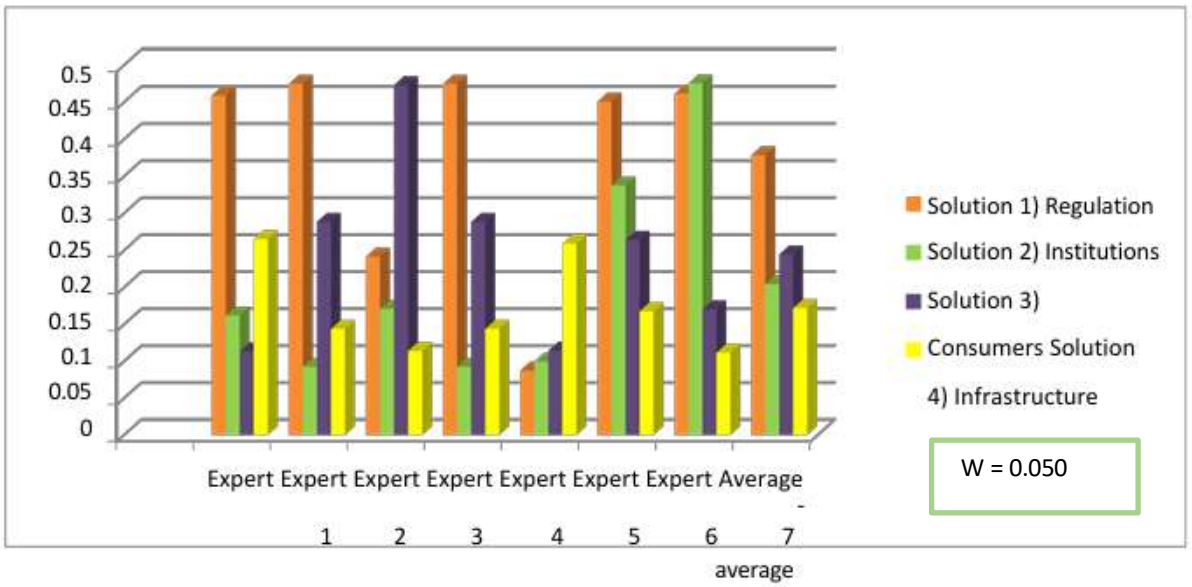
Source: *Super Decisions* and Microsoft Excel

Figure 3.7 *Geometric Mean* of the Overall Problem *Cluster*

Figure 3.7 shows the results of the geometric mean of the priority of problems originating from the entire problem cluster. Differences of opinion in permissible contracts originating from the regulatory problem cluster have the highest priority level among problems from other clusters, with a value of 0.045. Meanwhile, the lowest priority of the entire problem cluster, namely weak cyber security enforcement, originates from the infrastructure problem cluster with a value of 0.023. Differences of opinion in permissible contracts are the highest priority because contracts in Sharia fintech must be emphasized as a distinguishing feature of Sharia fintech from conventional fintech.

Rater Agreement Results for Solution Clusters

The *rater agreement* results for the solution cluster, with a relatively low agreement value among respondents, indicate a low level of agreement in assessing the priority of the solution cluster for the issues arising from the regulations, as shown by *the rater agreement value* of (W = 0.050).



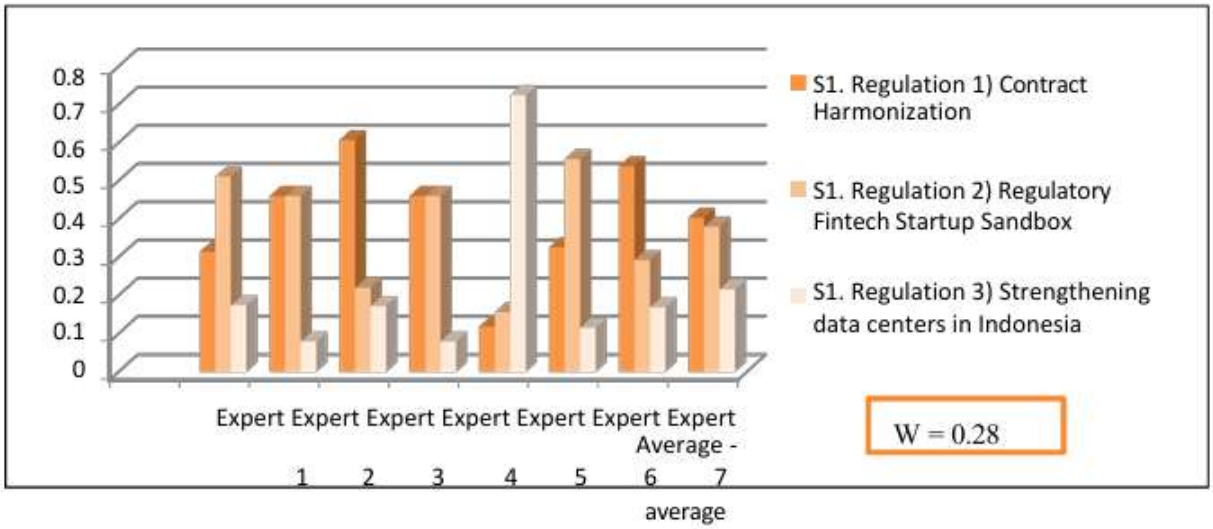
Source: *Super Decisions* and Microsoft Excel

Figure 3.8 Rater Agreement Results for Solution Clusters

The low agreement score is because all four respondents agreed that regulatory solutions are the top priority for optimizing the development *of* Sharia *fintech* in Indonesia. However, the other three respondents chose different priorities, namely consumers, infrastructure, and institutions (Figure 3.8). Furthermore, Figure 3.9 explains the *rater agreement* cluster of regulatory solutions with *nodes* that are solutions to the regulatory problems themselves. *The* regulatory solution *cluster* is a priority solution in resolving issues that hinder the development of Sharia *fintech* in Indonesia.

If *the* regulatory *cluster* can be resolved, it will facilitate Sharia-based *fintech* transactions. *The* regulatory *cluster* has a high *agreement rating* of 0.28. Respondents have a high level of agreement that the priority solution is contract harmonization. Taulu (2018), Head of *Fintech* Licensing and Supervision at the Directorate of IKNB of the Financial Services Authority (OJK), explained that providers of information technology-based money lending services (LPMUBTI) must also pay attention to the conformity of Sharia contract principles. In addition, the Head of the Sharia IKNB Division of the Indonesian Ulema Council (MUI), Haryadi (2018), explained that the Indonesian Ulema Council's National Sharia Council has issued Fatwa No. 117/DSN-MUI/II/2018 on information technology-based financing services based

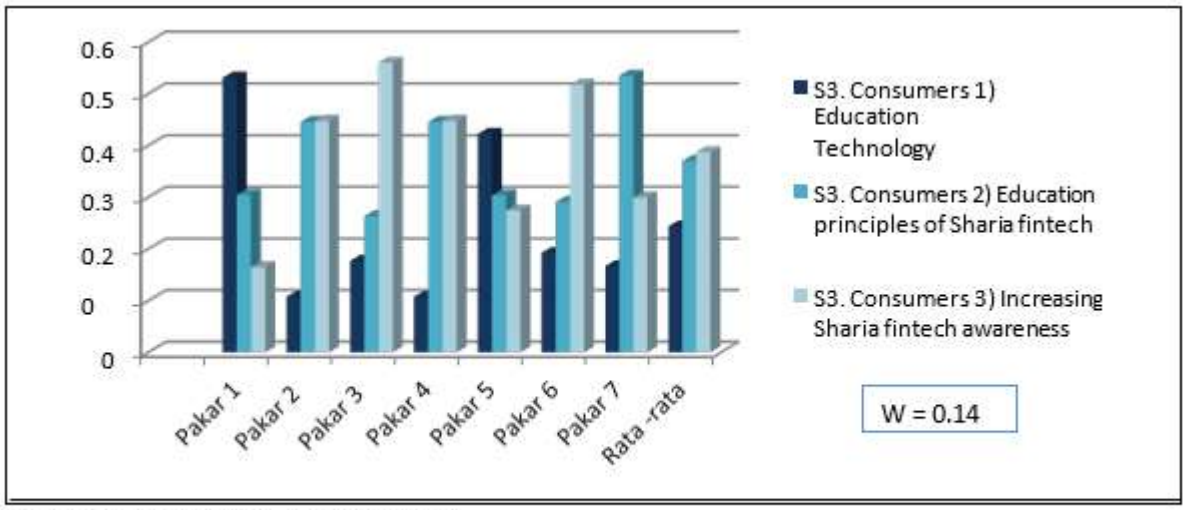
on Sharia principles. Meanwhile, there are still several transactions that are under further review regarding *Sharia compliance*.



Source: *Super Decisions* and Microsoft Excel

Figure 3.9 Results of *Rater Agreement on* Regulatory Solution Clusters

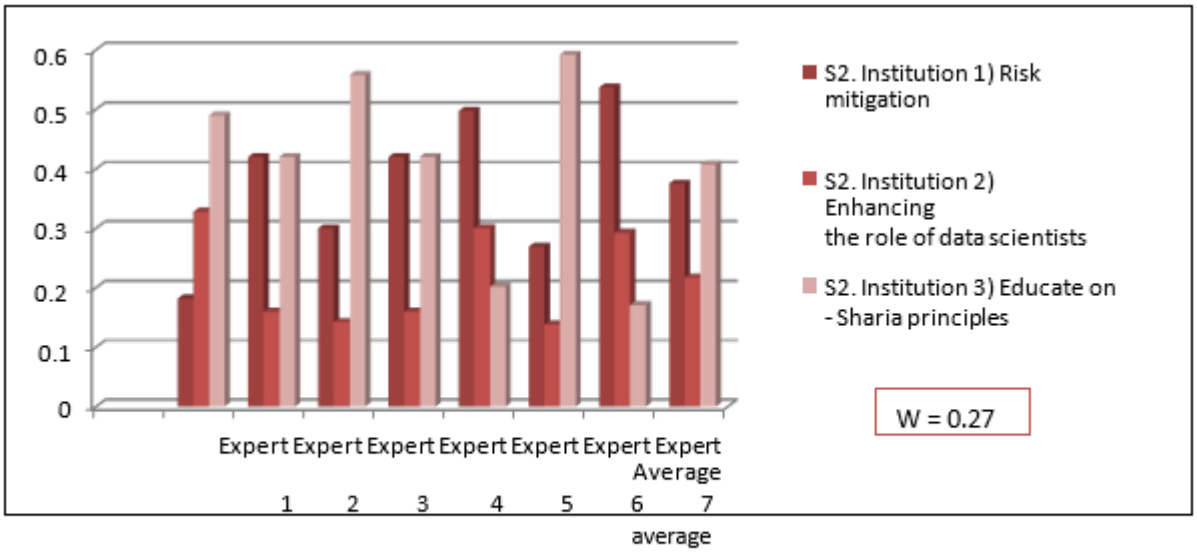
Furthermore, the second priority with high *rater agreement* results is the consumer solution, where respondents have a high agreement value of 0.14. This solution involves increasing the socialization *of* Sharia *fintech*. According to Wijaya (2018), increasing the socialization of Sharia *fintech* to the public will enable the public to understand that Sharia *fintech* can be used and meet the needs of the community in the current era of technological development.



Source: *Super Decisions* and Microsoft Excel

Figure 3.10 Results of *Rater Agreement on* Consumer Solution *Clusters*

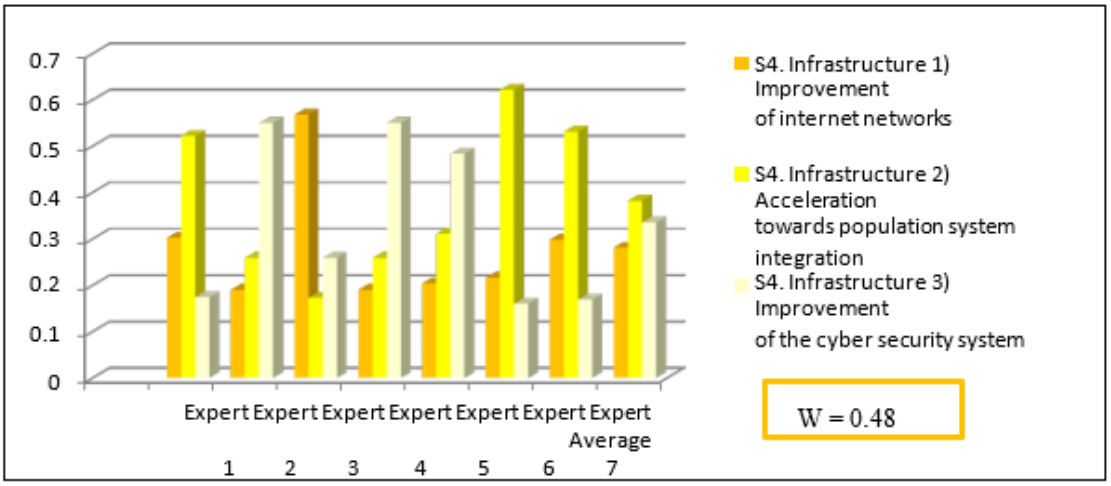
The results of data processing on *the* institutional solution *cluster* show *a rater agreement* that is close to the regulatory cluster, namely w = 0.27, indicating that the seven respondents also have a high level of agreement in assessing the priority of issues in the solution cluster (Figure 3.11). Five of the seven respondents agreed that the main solution to optimize the role of institutions is through education on Sharia principles. This is in line with Taulu's (2018) opinion, which states that education for users must be implemented and known by all users so that both *lenders* and *borrowers'* benefit. The second priority is risk mitigation, which must be improved.



Source: *Super Decisions* and Microsoft Excel

Figure 3.11 *Rater Agreement* Results for Institutional Solution Clusters

In the Infrastructure cluster, the level of agreement among respondents was 0.048, indicating a low *rater agreement* result. Based on the average, respondents chose accelerating the integration of the population system as the priority solution in *the* consumer *cluster*. Of course, this solution can help Sharia *fintech* practitioners in the process of screening data on borrowers who often face obstacles due to having multiple identities.

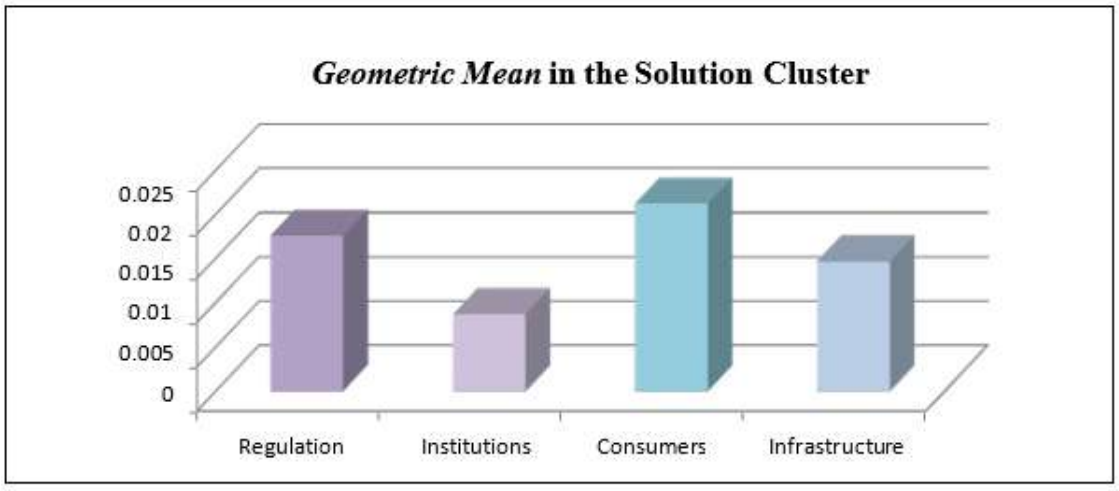


Source: *Super Decisions* and Microsoft Excel

Figure 3.12 *Rater Agreement* Results for Infrastructure Solution Clusters

***Geometric* Mean Cluster Solution Results**

The overall results from all respondents as seen from the Geometric Mean Values figure 3.13 shows four main solutions to optimize the development of Sharia fintech in Indonesia, with a value of 0.017, and the third cluster of infrastructure with a value of 0.014, and institutions with a value of 0.08.

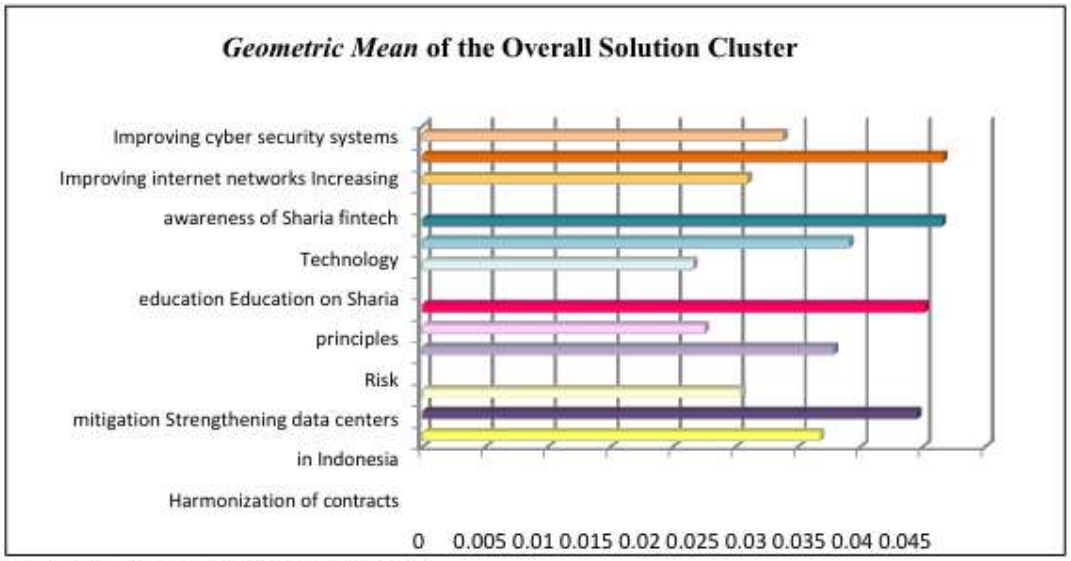


Source: *Super Decisions* and Microsoft Excel

Figure 3.13 *Geometric Mean* Cluster Solution Results

Consumer solution *clusters* with solution *nodes*, namely technology education, education on Sharia *fintech* principles, and increasing awareness of Sharia *fintech*. Consumers must be aware of the importance of literacy and understanding of Sharia *fintech* so that the public can make good use of Sharia *fintech*. In addition,

increasing the socialization *of* Sharia *fintech* is the responsibility *of* Sharia *fintech* so that the wider community knows that this technology-based financial institution has advantages in terms of practicality, systems, and costs. *The* consumer solution *cluster* is a priority solution cluster compared *to* other *clusters*.



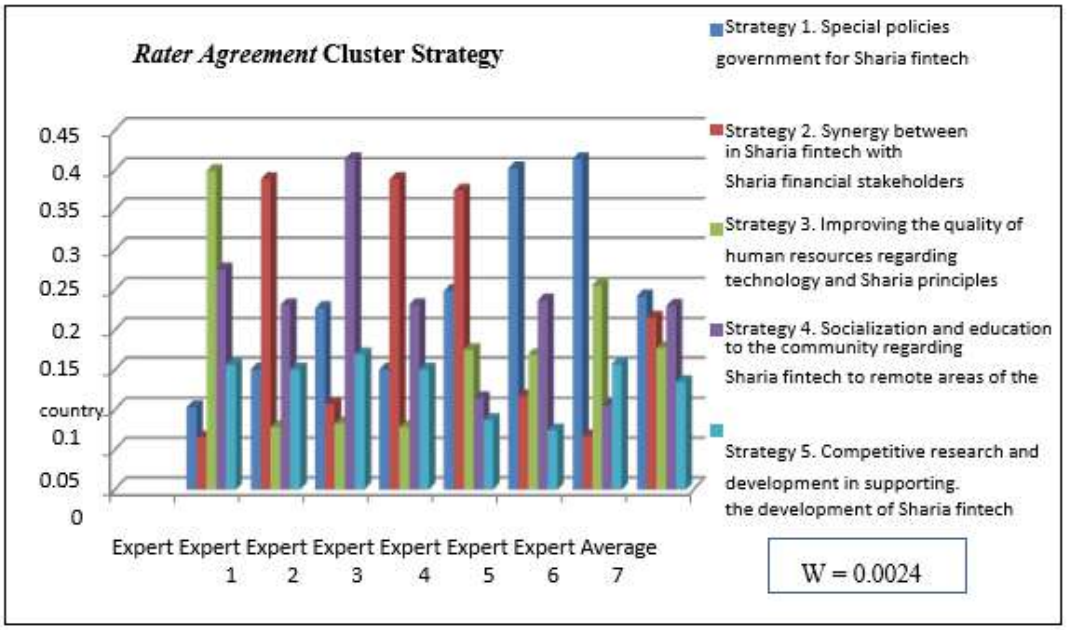
Source: *Super Decisions* and Microsoft Excel

Figure 3.14 *Geometric Mean* Cluster of Overall Solutions

Figure 3.14 shows *the nodes* of *the* overall problem *cluster*. Acceleration towards the integration of the population system from *the* infrastructure solution *cluster* has the highest priority level with a value of 0.042. According to Adhiansyah (2018), the dual population system makes it difficult for Sharia *fintech* companies to *screen* prospective borrowers' data. Therefore, the integration of the population system is very necessary so that individuals do not have dual identities, which can facilitate the process *of screening* the personal information of prospective borrowers.

Rater Agreement Results for the Strategy Cluster

Most respondents agreed on the low strategy cluster. The *rater agreement* score was 0.0024, indicating low agreement among respondents. This was due to the different backgrounds of the respondents. Thus, each respondent has their own perspective on the priority strategy. With low agreement, the main strategy of concern is the government's special policy for Sharia *fintech*.



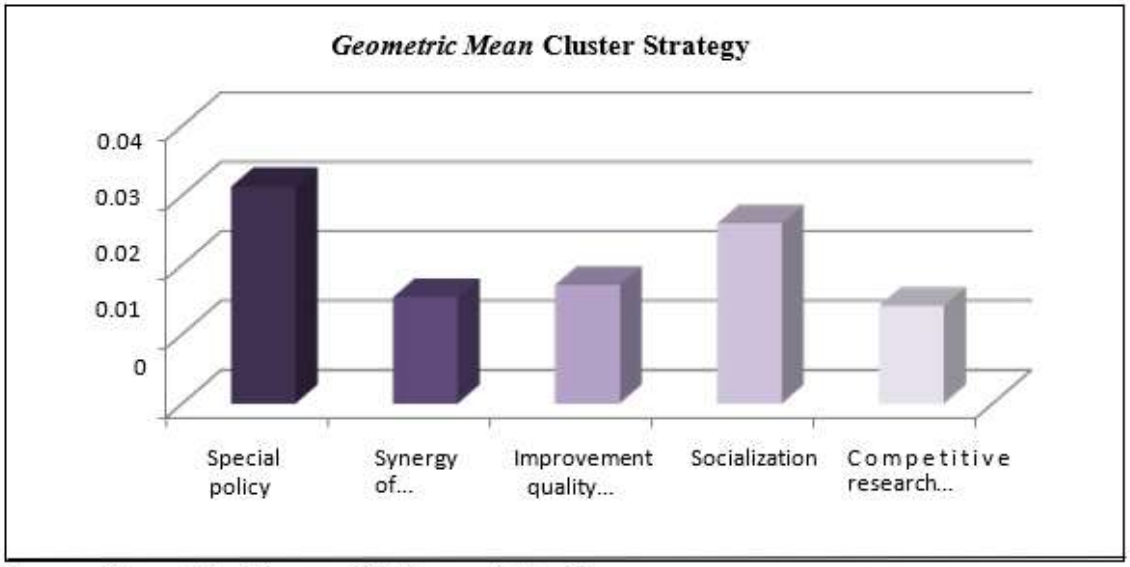
Source: *Super Decisions* and Microsoft Excel

Figure 3.15 *Rater Agreement* Results for Strategy Clusters

Geometric Mean Results of Strategy Clusters

Based on the *geometric mean* results, the highest priority in the strategy cluster is special government policies for Sharia *fintech* with a value of (0.031). According to Haryadi (2018), there are still several Sharia *fintech* transactions that are being studied in more depth to issue a fatwa related to these transactions. In addition, special POJK *for* Sharia *fintech* is also not yet available. Currently, there is only a regulation for *fintech* in general, namely POJK No.77/POSK.07/2016 concerning *fintech lending*, providers of money lending services based on information technology (LPMUBTI). Thus, government policies for Sharia *fintech* are indeed needed as a priority strategy for the development *of* Sharia *fintech* in Indonesia**.**

The next strategic priority is to disseminate information and educate the public about Sharia *fintech* throughout the country (0.025). Socialization to the public about Sharia *fintech* so that it can be understood by the public throughout the country. This is because, in essence, *fintech* is here to help people who cannot apply for financing from banks because *they are unbankable.* Improving the quality of human resources regarding technology and Sharia principles is the third priority with a value of (0.017).



Source: *Super Decisions* and Microsoft Excel

Figure 3.16 *Geometric Mean* Cluster Strategy Results

As explained by Taulu (2018), improving the quality of human resources is essential to provide the best service and innovation in Sharia *fintech*. The synergy strategy between Sharia *fintech* players and Sharia financial *stakeholders* is the fourth priority with a value of (0.015), while competitive *research and development* in supporting the development of Sharia *fintech* is the last priority (0.014). According to (Gomber et al., 2017), research can investigate the potential for fintech and reveal how it can compete and how *fintech companies* can collaborate with each other. In addition, it can address the issues that need to be addressed so that the development *of fintech* is tailored to the needs of the community.

Conclusion

Based on the results of the research conducted, it can be concluded that the strategy for the development of Sharia *fintech* in Indonesia is as follows:

1. The strategy to optimize the development *of* Sharia *fintech* in Indonesia, based on data processing results according to priority scale, consists of special policies by the government for Sharia *fintech* in Indonesia, socialization and education to the public about Sharia *fintech* to remote areas, improving the quality of human resources regarding technology and Sharia principles, synergy between Sharia *fintech* players and Sharia financial *stakeholders*, and *competitive research and*

development to support the development of Sharia *fintech*.

2. The issues that hinder the development *of* Sharia *fintech* in Indonesia are divided into four aspects, namely regulation, institutions, consumers, and infrastructure. Regulatory issues consist of differences of opinion on permissible contracts, relatively high minimum capital requirements, and the requirement that data centers must be in Indonesia. Institutional issues include *cyber risks*, limited reach, and weak human resources. Consumer issues include low technological understanding, lack of understanding of Sharia principles, and preference for traditional finance. The final issue is infrastructure, which includes weak internet network infrastructure, weak population system infrastructure, and weak *cyber security* enforcement infrastructure.
3. Solutions offered for issues hindering fintech development. Sharia in Indonesia is devided into four aspects, namely regulation, institutions, consumers, and infrastructure. *of* Sharia *fintech* in Indonesia are divided into four aspects, namely regulation, institutions, consumers, and infrastructure. Solutions in the regulatory aspect include harmonization of contracts, *regulatory sandboxes* for *fintech startups*, and strengthening data centers in Indonesia. Solutions in the institutional aspect consist of risk mitigation, which is very important to maintain trust and security in technology-based financial services that are vulnerable to *cyber crime*. In addition, risk mitigation is also necessary to anticipate *fraud*, default, and other undesirable events, enhance the role of data scientists, and educate people on Sharia principles. Furthermore, the consumer aspect includes solutions such as technology education, education on Sharia *fintech* principles, and increasing the socialization *of* Sharia *fintech*. Infrastructure solutions consist of improving the internet network, accelerating the integration of the population system, and improving the *cyber security* system.
4. From the data processing results, the priority issues were ranked as regulation, consumers, infrastructure, and institutions. Meanwhile, the priority solutions were consumers, regulation, infrastructure, and institutions.
5. The priority issues for each aspect from the data processing results produced different priority issues. In the regulatory aspect, the priority issues consisted of

differences of opinion on permissible contracts, the requirement that data centers must be in Indonesia, and relatively high capital requirements. The priority solutions in the consumer aspect were preference for traditional finance, lack of understanding of Sharia principles, and low understanding of technology. Next, the priority solutions for the infrastructure aspect are weak *cyber security* enforcement infrastructure, weak population system infrastructure, and weak internet network infrastructure. Finally, the priority solutions for institutions are limited reach, *cyber risks*, and weak human resources.

Recommendations

1. For Sharia *fintech*, in accordance with the results of the strategic priorities, to increase the development *of* Sharia *fintech* in Indonesia, it is necessary to improve human resources in terms of technology and Sharia principles so that they can provide the best service and innovation in the future. Furthermore, the synergy between Sharia *fintech* players and Sharia financial *stakeholders* can be used as a means of exchanging information related to the condition of Sharia *fintech* in Indonesia.
2. For regulators, specific government policies that support Sharia *fintech* are needed, as well as specific regulations for Sharia *fintech* that emphasize Sharia principles and the availability of fatwas as binding rules for Sharia *fintech* transactions.
3. For academics, *competitive research and development* must be conducted to investigate the future potential *of* Sharia *fintech*, the level of competition, challenges, and cooperation among Sharia *fintech* companies. In addition, research can identify existing problems in society so that the development *of* Sharia *fintech* can be tailored to the needs of the community.
4. For the public, it is important to encourage greater participation and support for Sharia *fintech, so* that Sharia *fintech* can survive and develop optimally within society.

References

Adhiansyah, L. (2018). *Problems, Solutions, and Strategies for Sharia Fintech in Indonesia*. Interviewed by Nira Mufidah on May 24, 2018.

Ali, A. E. S., Ali, K. M., & Azrag, M. H. (Eds.). (2020). *Enhancing Financial Inclusion through Islamic Finance, Volume II*. Springer International Publishing.

Ali, K. M., & Hassan, M. K. (Eds.). (2019). *Revitalization of Waqf for Socio-Economic Development, Volume II*. Springer International Publishing.

databoks, 2017. (n.d.).

Gomber, P., Koch, J.-A., & Siering, M. (2017). Digital Finance and FinTech: current research and future research directions. *Journal of Business Economics*, *87*(5), 537–
580. https://doi.org/10.1007/s11573-017-0852-x

Haryadi, A. (2018). *Issues, Solutions, and Strategies for Sharia Fintech in Indonesia*.

Interviewed by Nira Mufidah on July 11, 2018.

Haryono, H. K. (2018). *Problems, Solutions, and Strategies for Sharia Fintech in Indonesia*.

Interview by Nira Mufidah, May 24, 2018.

IOSCO. (2017). 74. IOSCO Research Report on Financial Technologies (Fintech), (February), 1– 76.

Komarova Loureiro, Y., & Gonzalez, L. (2015). Competition against common sense. *International Journal of Bank Marketing*, *33*(5), 605–623. https://doi.org/10.1108/IJBM-06-2014-0065

Mukhlisin, M. (2018). *Problems, Solutions, and Strategies for Sharia Fintech in Indonesia*.

Interview by Nira Mufidah on May 11, 2018.

Ng, A., & Kwok, B. K. B. (2017). Emergence of Fintech and cybersecurity in a global financial center: strategic approach by a regulator. *Journal of Financial Regulation and Compliance*, 00–00. https://doi.org/10.1108/JFRC-01-2017-0013

Ordanini, A., Miceli, L., Pizzetti, M., & Parasuraman, A. (2011). *Crowd-funding: transforming customers into investors through innovative service platforms*. *Journal of Service Management* (Vol. 22). https://doi.org/10.1108/09564231111155079

Paren, D. (n.d.). *Issues, Solutions, and Strategies for Sharia Fintech in Indonesia*.

Interviewed by Nira Mufidah on August 10, 2017.

Permana, S. (n.d.). *Financial Technology in Islamic Finance*. Seminar on Sharia Economic Days (Second UI), University of Indonesia, February 12, 2018.

PwC. (2017). Global FinTech Report 2017, 20. Retrieved from https://www.pwc.com/jg/en/publications/pwc-global-fintech-report-17.3.17-final.pdf

Reuters, T. (2015). State of the GLOBAL ISLAMIC ECONOMY. *Dubai the Capital of Islamic Economy*, 1–287. https://doi.org/10.1017/CBO9781107415324.004

Sebagian, D. M., Isi, S., Materi, D., Ini, P., & No, U. U. (2018). Directorate of Regulation, Licensing, and Supervision of Fintech April 2018, (28).

Shahrokhi, M. (2008). *E-finance: status, innovations, resources, and future challenges*.

Managerial Finance (Vol. 34). https://doi.org/10.1108/03074350810872787 Syamlan,

Y. T. (2018). *Problems, Solutions, and Strategies for Sharia Fintech in Indonesia*. Interview by Nira Mufidah, June 25, 2018.

Taulu, A. (2018). *Problems, Solutions, and Strategies for Sharia Fintech in Indonesia.*

Interviewed by Nira Mufidah on June 26, 2018.

Ummah, K. (n.d.). *Indonesian Fintech: Financial Service Disruption*. Buka Talks: February 15, 2018.

Wijaya, R. (2018). *Issues, Solutions, and Strategies for Sharia Fintech in Indonesia*.

Interviewed by Nira Mufidah on May 30, 2018.

Wonglimpiyarat, J. (2017). FinTech banking industry: a systemic approach. *Foresight*, *19*(6), 590–603. https://doi.org/10.1108/FS-07-2017-0026