

Improving Sharia Financial Inclusion through Advancements in Technology and Compliance with Sharia Principles

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Irham Zaki

*Universitas Airlangga, Indonesia
irham-z@feb.unair.ac.id*

Fanet Muhammad Hanifan Paham

*Universitas Airlangga, Indonesia
fanet.muhammad.hanifan-2017@feb.unair.ac.id*

M Bastomi Fahri Zusak

*Universitas Diponegoro, Indonesia
bastomifahri@lecturer.undip.ac.id*

Abstract

This study aims to analyze the role of technology implementation and Sharia compliance in Islamic financial institutions in improving financial inclusion in Indonesia. This study employs a case study method using descriptive and explanatory techniques to investigate the relationship between the utilization of technology and compliance with Sharia principles in Peer-to-Peer Lending applied by ALAMI Sharia for contributing to the promotion of financial inclusion in Indonesia. This study focuses on analyzing Peer-to-Peer Lending ALAMI Sharia as the primary subject, specifically in relation to its impact on financial inclusion. The results of this study are then presented in a descriptive narrative manner to describe the findings in the field. Based on the four financial inclusion criteria used in this study: product penetration, product availability, product use, and product quality, it is generally understood that the implementation of advanced technology at Sharia financial institutions plays a crucial role in improving financial inclusion by providing service efficiency both in cost and time. Similarly, implementing Islamic financial principles contributes to enhancing financial inclusion in Indonesia by creating appealing financial products that comply with Sharia principles. These products are believed to ensure the high quality of financial products. This study provides empirical evidence on the prospects and the function of technology-based Islamic financial institutions, which will be very valuable for stakeholders in both practical and academic fields.

Keywords: *Peer-to-Peer Lending, Sharia Fintech, Sustainable Development Goals, Financial Inclusion*



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INTRODUCTION

Poverty and inequality are two of the economic problems that have not been able to be resolved for a long time in many countries, especially developing countries such as Indonesia. According to Huda et al. (2020), Indonesia's economic activities should have focused on regulating technology, which should have led to beneficial implications for Indonesia's economic growth. However, The reality is that this resource has not been effectively harnessed, as seen by the poverty rate in Indonesia, which stood at 10.14% of the whole population or over 24.9 million individuals in 2021 (BPS, 2021). The data above reflects the ongoing problems of inequality and poverty in Indonesia, which has considerable economic potential.

In recent times, many studies have begun to try to provide solutions to these economic problems and have found that one of the ways to deal with these economic problems is by presenting better financial inclusion, as stated by Damodaran (2013) it is surprising how haphazard the estimation of equity risk premiums remains in practice. We begin this paper by looking at the economic determinants of equity risk premiums, including investor risk aversion, information uncertainty and perceptions of macroeconomic risk. In the standard approach to estimating equity risk premiums, historical returns are used, with the difference in annual returns on stocks versus bonds over a long time period comprising the expected risk premium. We note the limitations of this approach, even in markets like the United States, which have long periods of historical data available, and its complete failure in emerging markets, where the historical data tends to be limited and volatile. We look at two other approaches to estimating equity risk premiums – the survey approach, where investors and managers are asked to assess the risk premium and the implied approach, where a forward-looking estimate of the premium is estimated using either current equity prices or risk premiums in non-equity markets. In the next section, we look at the relationship between the equity risk premium and risk premiums in the bond market (default spreads and Shinkafi et al. (Shinkafi et al., 2019) found that financial inclusion brings the gap between the sections of society. Financial inclusion or community involvement in formal financial access is believed to increase the country's economic activity and create new opportunities for economic growth that will alleviate economic problems (Elsherif, 2019).

Exclusive access to financial sectors creates a financial gap in society, where people experiencing poverty do not have the same opportunity to flourish in economic activity in line with the economic growth of their country (Machmud & Huda, 2011). One of those opportunities is formal financial access, expensive transaction costs, the lack of information on financial literacy, and the difficulty of financial access become some of the “barriers to entry” for society to enter into formal finance (Ozili, 2018). Another study illustrates that the low level of financial inclusion also affects the loss of 1% in GDP (Varghese & Viswanathan, 2018).

In order to move further into the strategic process of achieving financial inclusion, it is essential to ascertain the factors that contribute to individuals’ participation or lack thereof in formal financial systems. Several past studies have revealed various things that prevent people’s intentions to be involved in formal finance, such as the lack of ability to warrant the collateral or the warranty in financing applications, the high cost, the lack of information and education, and the incompatibility between the concept of service with the beliefs can hinder these intentions.

The explanation above illustrates the incompatibility between the forms of services offered by Financial Institutions and those requested from prospective customers, even though this form of supply and demand is a crucial aspect that, if adequately met, can improve financial inclusion (Ali et al., 2020).

In response, the concept of Islamic Finance involves risk-sharing contracts in which participants bear each other’s risks. This contract is an alternative to financing aside from conventional debt-based contracts in the effort to develop small businesses (Zulkhibri, 2016). These various contract models offered by micro-scale finance can support small businesses and give people experiencing poverty the opportunity to grow and develop. Likewise, as previously explained, properly utilizing information technology can solve various problems. Furthermore, in the context of financial technology, technology has a major role in the development of financial institutions, especially in presenting cost- and time-efficient transactions and operationally-effective (Wibowo et al., 2020).

Considering the significant role of each factor: Based on previous studies, I would like to explore the role of technology-driven Islamic financial

institutions in offering comprehensive financial services. This is believed to be a contributing factor in reducing a variety of economic issues. By looking at the role of financial institutions through these factors in financial inclusion, the results of this research can later become important considerations as well as concrete and strategic suggestions for the development of financial institutions and the development of financial inclusion growth in Indonesia.

The researcher chose Peer-to-Peer (P2P) Lending ALAMI Sharia as the key informant in this study. ALAMI Sharia is a technology-based Islamic financial institution that is also one of the pioneers in its field, namely P2P lending services and was registered by the Indonesian Financial Authority (OJK, *Otoritas Jasa Keuangan*). The company's rapid growth has now succeeded in distributing funding worth as much as IDR782 billion to 142 SMEs. This has attracted various national and multinational investors such as Quona Capital, Golden Gates Ventures, and AC Ventures (Aastha, 2021). ALAMI Sharia then used this injection of funds to develop its service products towards a Digital Bank by acquiring the Sharia Rural Bank (BPRS, *Bank Perkreditan Rakyat Syariah*) Cempaka Al-Amin and transforming it as "Hijra Bank". These achievements show ALAMI Sharia to be a technology-based Islamic financial institution that is competent in its field. ALAMI Sharia can be a key informant who can present valuable information to achieve the objectives of this research.

LITERATURE REVIEW

Islamic Financial Institutions

Financial institutions play a crucial role as intermediaries in facilitating financial transactions among different parties. This intermediation is between economic units from the ones with surplus funds to deficit funds or from surplus units to deficit units (Soemitra, 2017). Although they have similar functions and objectives to conventional financial institutions, Sharia financial institutions have different products, according to the National Sharia Board – Indonesian Ulema Council (DSN-MUI, *Dewan Syariah Nasional – Majelis Ulama Indonesia*), which are financial products by Sharia principles and obligated to have the operational permit as a Sharia financial institution to ensure compliance with Sharia principles (MUI, 2008). This compliance with Sharia law will later be regulated by DSN-MUI, which is authorized to

stipulate, amend, and revoke fatwas related to Sharia Financial Institutions (LKS, *Lembaga Keuangan Syariah*) and supervised by the Sharia Supervisory Board (DPS, *Dewan Pengawas Syariah*) (Nuha, 2018). Meanwhile, the legality of LKS operations is generally supervised by those authorized to issue operational permits, such as OJK.

According to Ali et al. (2020), religiosity is essential in determining the demand for a financial product. A large number of Moslem Indonesians can lead Islamic Financial Institutions to have a role in the efforts to improve financial inclusion in Indonesia. Islamic financial institutions can also further utilize this role by offering financing contracts more suitable for public demands. The fulfillment of Sharia principles also reflects noble values such as upholding moral values, social values, transparency, and other values (Causse, 2012). The implementation of these values is also considered a factor that influences financial inclusion.

Financial Technology (Fintech) is a term that describes the use of technology to improve financial services. This modern technology can take the shape of mobile phones, computers, internet networks, or cards connected to a trusted digital payment system (Ozili, 2018). According to OJK (2021), Fintech Lending or Peer-to-Peer (P2P) Lending is an Information Technology-Based Lending and Borrowing Service (LPMUBTI, *Layanan Pinjam Meminjam Uang Berbasis Teknologi Informasi*). P2P lending platforms typically assess the creditworthiness of borrowers through various methods, including credit checks, income verification, and other data analysis techniques. The platforms assign each borrower a risk grade or interest rate based on their creditworthiness, helping lenders make informed investment decisions. The services allow loan lenders and debtors to conduct financing transactions without meeting face-to-face. The definition of fintech according to OJK is similar to the opinion of other experts, which are defined as follows: P2P lending acts as an intermediary between investors and parties who need financing, with the convenience of technology that makes it possible for more efficient activities rather than the traditional intermediary (Davis et al., 2017).

Financial inclusion is universal access to sustainable financing at an affordable cost that involves all levels of society in the formal economy. In simple terms, financial inclusion refers to the involvement of individuals and communities in formal financial systems. It encompasses providing access to financial products and services and promoting financial literacy and

capability among the population. It is all about providing access to affordable and diverse financial services to individuals and businesses, regardless of their income level (Ozili, 2018). The term financial inclusion has been frequently discussed since the 2008 economic crisis (Muzdalifa et al., 2018). The role of a variable in promoting financial inclusion can be understood by analyzing the variable against certain criteria. According to Nguyen (2021) in his work, the achievement of financial inclusion can be seen from at least three aspects: product penetration, product availability, and product use. These three criteria can describe the ability of a financial product to create financial inclusion.

A similar study from Pearce and Ortega (2012) presented appropriate criteria describing the aspects of financial inclusion, namely access to products, product use, and product quality. This research utilizes four criterion points derived from diverse sources to examine the impact of technology implementation and compliance with Islamic financial principles in a financial product on the improvement of financial inclusion in Indonesia.

Sustainable Development Goals

The agenda regarding Sustainable Development Goals (SDGs) focuses on alleviating poverty, minimizing inequality, and protecting the environment. The agenda, which contains 17 goals out of 169 targets, is the result of an agreement by world leaders at the 70th General Assembly of the United Nations (UN) in September 2015. This agreement is contained in a document entitled "*Transforming Our World 2030*", which took effect in 2016 and is expected to be achieved by 2030 (Panuluh & Fitri, 2016).

The SDGs are a continuation of the Millennium Development Goals (MDGs), which were agreed in 2000 and ended in 2015. Although similar, the SDGs are considered to have a more comprehensive agenda than the MDGs by bringing five basic principles oriented towards people, earth, prosperity, peace, and cooperation. Furthermore, this agenda is outlined in 17 goals in the form of no poverty; no hunger; good health and well-being; quality education; gender equality; clean water and sanitation; affordable and clean energy; decent work and economic growth; industry, innovation and infrastructure; reduced inequalities; sustainable cities and communities; responsible consumption and production; climate action; protecting marine ecosystems; protecting land ecosystems; peace, justice, strong institutions;

and partnerships to achieve goals.

Based on several past studies, financial technology and the implementation of Sharia principles have a role in fulfilling the SDGs. The religiosity of the community in choosing financial services based on Sharia principles is believed to play a role in increasing beneficial financial activities for the economy (Dariah et al., 2016). Likewise, financial technology is believed to play a role in serving unbanked parties or parties whom formal financial institutions do not accommodate in meeting their financial needs. This factor has the potential to boost economic growth, reduce poverty, and address social inequality (Hudaefi, 2020).

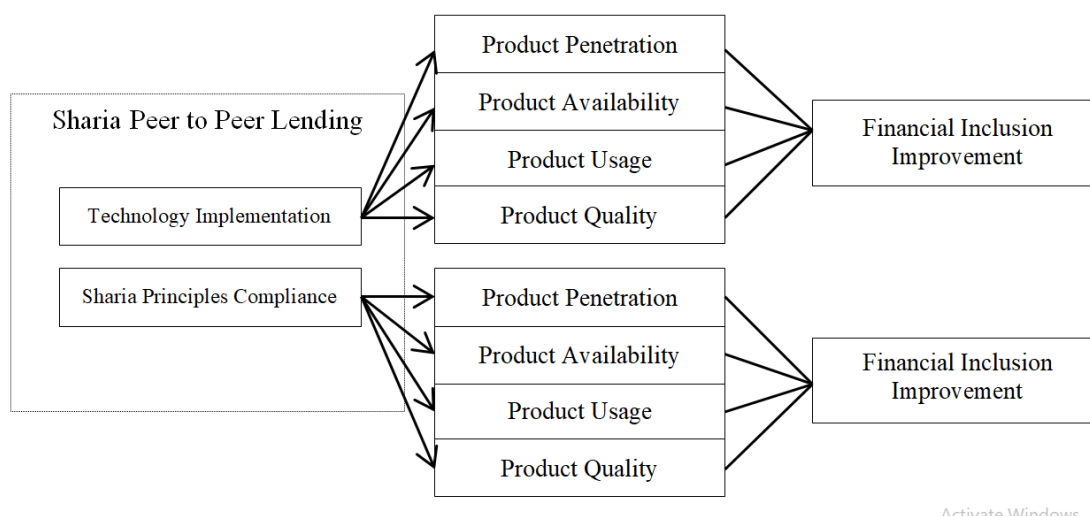


Figure 1 : Research Model

RESEARCH METHOD

This study is qualitative explanatory research using the case study method because this method can answer the “how” and “why” questions of a phenomenon with in-depth observations (Yin, 2015). This research approach is also often termed as a research approach that has a naturalistic value because the research conditions are natural (in a natural setting) without any external interference, leading to the difficulty of manipulating data by little to no ability to control the events in the field. This approach was also chosen to explore the role of the object of research further, not only from the historical data needed but also from the activities of the research object and interviews with related parties, which were then complied with by field observations.

This makes the case study method focus on contemporary or current events (Yin, 2015).

In order to understand the function of P2P Lending in ALAMI Sharia, it is necessary to gather extensive data from several sources, including ALAMI Sharia's own organization and its consumers. Furthermore, these customers are divided into two parties: customers of the lenders and customers of third parties recipient of funding. This research involves three parties in meeting the primary data needs. The primary data in this study is interviews with informants who are official representatives of the P2P Lending in ALAMI Sharia Company, representatives of the e-fishery company as beneficiary or the recipient of financing, as well as several parties using ALAMI services, which are the financiers of ALAMI Sharia.

The population of this research are P2P lending customers and ALAMI Sharia administrators. The following are samples of this research or informants:

Table 1 : Key Informant from ALAMI Sharia

No.	Name	Interview Time	Position	Informant Code
1.	Muhammad Rasyid Ridho	10 June 2021	Product Associate (In charge of external research)	A1

Source: Interview (Data processed by researchers. 2021)

Table 2 : Beneficiary Informant from ALAMI Sharia Service (E-Fishery)

No.	Name	Interview Time	Position	Informant Code
1.	Muhammad Nizar Mustaqim	9 July 2021	Vice President E-Fishery Mall	B1

Source: Interview (Data processed by researchers. 2021)

Table 3 : ALAMI Sharia Funding Informant

No.	Name	Age	Interview Time	Informant Code
1.	Aufar	26	July 25, 2021	C1
2.	Malik	30	July 28, 2021	C2

3.	Nasya	26	July 28, 2021	C3
	Fajrus	28	30 July 2021	C4

Source: Interview (Data processed by researchers. 2021)

Choosing the informants in this study is very important in determining the data quality used to achieve the research objectives. This research uses the non-probability sampling technique, specifically purposive sampling. Non-probability sampling is a sampling technique in which the probability of each member of the population being selected to become a sample is not the same. Non-probability sampling is then reclassified into several types of techniques. One of them is the Purposive Sampling technique. This sample selection technique is carried out with certain considerations (Sugiyono, 2016).

Analytical techniques direct the researchers to process the gathered data appropriately and fairly. The results of this analytical technique will be informative evidence that is able to answer research problems. This research uses a pattern-matching analysis technique. This analytical technique is often used in research using the case study method. This research technique validates the existing data by finding at least the same two patterns to strengthen the results of the study.

RESULTS

The Role of Technology Implementation in Improving Financial Inclusion

As previously stated, this study uses four financial inclusion criteria to describe the role of the aspects to be studied in this study. The table below elaborates on the interview results recapitulation between researchers and informants of this study. The table describes the fulfillment of financial inclusion criteria regarding technology implementation.

The domain section is the main aspects of financial inclusion, the sub-domain section is the criteria for financial inclusion, and the subdomain description is further explanations regarding the review of the subdomain.

**Table 3 : Informant Responses to Financial Inclusion Indicators
(Implementation of Technological Aspects)**

Domain	Sub Domain (Financial Inclusion Criteria)	Sub Domain Description	Research Object	Customer Recipient of Financing	Funding Customers				
			ALAMI Sharia (A1)	E-Fishery (B1)	(C1)	(C2)	(C3)	(C4)	
Technological Aspect	Product Penetration	Number of Accounts	✓	✓	✓	✓	✓	✓	
	Product availability	Availability of Mobile Customer Service	✓	✓	✓	✓	✓	✓	
	Product Usage	Number of Transactions	✓	✓	✓	✓	✓	✓	
	Product quality	Product Conformity with Customer's Demand	Product Conformity with Customer's Demand	✓	✓	✓	✓	✓	✓
			Transparent service	✓	✓	✓	✓	✓	✓
		Safe service	Safe service	✓	✓	✓	✓	✓	✓

Source: Interview (Data processed by researchers. 2021)

- ✓ : Aspects in the domain have a role in the sub-domain
- : Aspects in the domain have no role in the sub-domain

All parts of the table above contain the symbol “✓”, which indicates the role of technology implementation in product penetration, product availability, product use, and product quality. Based on researcher interviews with informants, technology is generally considered to play a role in improving operational efficiency, both in terms of cost efficiency and time efficiency. This efficiency is considered capable of meeting the existing financial inclusion criteria.

Similar to the results of the study above, this part of the study also uses four criteria to describe the role of Shariah aspect fulfillment in improving financial inclusion. The table provided presents a detailed summary of the interview findings obtained from the interaction between the researchers and the participants involved in this study. The table describes the fulfillment of financial inclusion criteria regarding compliance with Sharia principles in financial institutions.

Table 4 : Informant Responses to Financial Inclusion Indicators (Compliance with Sharia Principles)

Domain	Sub Domain (Financial inclusion criteria)	Sub Domain Description (Measurement of Financial inclusion criteria)	Object of research ALAMI Sharia (A1)	Customer Recipient of Financing E-Fishery (B1)	Funding Customers			
					(C1)	(C2)	(C3)	(C4)
Fulfillment of Sharia Financial Principles	Product Penetration	Number of Accounts	✓	✓	✓	-	✓	✓
	Product availability	Availability of Mobile Customer Service	-	-	-	-	-	-
	Product Usage	Number of Transactions	✓	✓	✓	-	✓	✓
	Product quality	Product Conformity with Customer's Demand	✓	✓	✓	-	✓	✓
		Transparent service	✓	✓	✓	✓	✓	✓
		Safe service	✓	✓	✓	✓	✓	✓

Source: Processed research data

- ✓ : Aspects in the domain have a role in the sub-domain
- : Aspects in the domain have no role in the sub-domain

Based on the table above, it can be deduced that Sharia compliance, or the fulfillment of Sharia principles in a financial product, has a role in fulfilling some aspects of financial inclusion criteria. The majority of informants revealed that the fulfillment of the Sharia aspects greatly determines their decision in choosing a financial product. According to some

informants, compliance with these Sharia principles is considered obligatory as a demonstration of commitment to Islamic laws and regulations. Hence, the adherence to Sharia principles in Sharia financial products has a distinct appeal for those seeking to comply with Sharia laws.

However, one informant does not consider the role of fulfilling Sharia principles in their decision to choose financial products. Interestingly, the informant admitted that the Sharia principles are believed to bring good values for customers, such as the value of justice, honesty, and other noble values. However, according to the informant, Islamic financial products are considered “nice to have” financial products, not “must have” ones.

From all results of the research above, it can be understood that all informants consider that adherence to Sharia principles brings values that are believed to have good impacts on ALAMI customer transaction activities. Nevertheless, several informants did not believe this factor influenced their choice of selecting ALAMI Sharia. Therefore, the fulfillment of Sharia principles at ALAMI affects the quality of financial products at ALAMI Sharia. The positive effects are considered to guarantee the security and convenience of transactions by ensuring fair, transparent, useful, and universal services.

In addition to the results of this research from the side of funding customers, Sharia principles compliance is also considered to have a role in improving financial inclusion according to the customers who receive funding. It is also considered an alternative financing that is more suitable for the capability of the recipients of funding. This Islamic financial product, which is relatively affordable and not burdensome, allows funding recipients to grow and develop their businesses with relatively cheaper and easier financing compared to conventional and other traditional financing.

Based on the table above, Sharia principles compliance is not considered to play a role in ensuring the availability of ALAMI financial products. This is because the fulfillment of the Sharia aspect is considered to have no relation to technical matters in ensuring the availability of a financial product. The results of this study are deemed as new findings in the field of financial inclusion research, especially in the financial inclusion of Islamic financial institutions. Based on the results of this study, one of the criteria used is not considered to represent the role of Sharia principles compliance in financial inclusion.

DISCUSSION

The Role of Technology Implementation in Improving Financial Inclusion

The results above have described the role of technology in financial inclusion according to the informants of this research. The results are based on data from past studies, which revealed that the implementation of technology in a financial product has a role in alleviating various financial inclusion problems, such as geographical constraints, collateral or guarantee factors, cost factors, and other factors (Ozili, 2018). The utilization of technology plays a role in providing affordable services in terms of cost and distance, fast, safe, easy, and by customer requests. In ensuring these things, according to this research informant, technology is utilized without compromising customer's safety and comfort, and on the other hand, technology provides customers with transparent and secure financial services.

Fintech innovations have the potential to significantly increase financial inclusion. However, it is essential to address data privacy, cybersecurity, and regulatory oversight issues to ensure the responsible and sustainable growth of fintech in promoting financial inclusion. Significantly, Data security and privacy influence the perceived usefulness of using peer-to-peer lending (Putri et al., 2023). On the other hand, perceived usefulness is the main construct of the Technology Acceptance Model (TAM) (Davis et al., 1989). In financial inclusion initiatives, the trust and confidence of users are critical. Ensuring robust data security practices not only protects individuals' sensitive information but also builds financial systems.

The Role of Sharia Principles Compliance in Improving Financial Inclusion

The results above show that the fulfillment of Sharia principles in ALAMI Sharia plays a role in creating attractive and quality financial products, according to the relevant informants, which are financial products that are safe, reliable, affordable, and by Islamic law. Creating these attractive financial products plays a role in convincing the public to choose ALAMI Sharia as the formal financial institution for their transaction and investment needs. The interviews are on the results of past studies that describe the role of Sharia principles compliance, which can uphold noble values, such as the

value of openness, social values, and moral values, which is the appeal of Islamic financial products (Causse, 2012).

The recipients of the funding statement acknowledge that alternative transactions are more amicable, aligning with previous research, which states that the fulfillment of Sharia principles in Islamic financial institutions is able to provide financial products with contracts that are more suitable with the capabilities and demands of customers (Causse, 2012). The suitability between the results of this study and those of past studies can describe the role of Sharia principles compliance in a financial institution in improving financial inclusion.

CONCLUSION

Based on the results of this study, it can be concluded that the implementation of technological aspects and the fulfillment of Islamic financial principles have a role in improving financial inclusion. As a result, the implementation of technology and Shariah financial principles compliance affects these four financial inclusion criteria, including product penetration, product availability, product use, and product quality.

Furthermore, the fulfillment of Sharia principles plays a role in creating products that are in accordance with the demands and expectations of all parties, both for those who prioritize the fulfillment of Sharia principles and for parties who override the fulfillment of Sharia principles. This is due to the view that Islamic financial principles compliance not only fulfills the existing Sharia laws but also brings good values for all society groups. Following these Sharia principles can guarantee the suitability of the demands by providing financial products that are secure and convenient for customers.

In general, the implementation of technology and Sharia principles compliance in financial institutions have a role in improving financial inclusion in Indonesia. Furthermore, this finding is useful for stakeholders as an illustration of the efforts to achieve financial inclusion in the community. This also can be used as a strategic evaluation material for the development of financial inclusion in Indonesia. For entrepreneurs, this research can describe the gaps in the efforts to develop financial inclusion in Indonesia. This gap serves as a valuable point of reference for new ideas that can potentially be implemented by entrepreneurs, with the aim of establishing an enhanced

financial ecosystem, particularly in the context of improving financial inclusion. This empirical evidence can be useful for related parties such as stakeholders, business actors, academics, and the Muslim community as a reference for concrete evidence of the role of Sharia P2P lending activities in improving financial inclusion.

LIMITATION

The study is limited by the absence of a financial inclusion model. Hence, further study might use a qualitative methodology to construct a model of the technology utilized in Sharia-compliant financial technology.

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