THE ROLE OF FINTECH LENDING IN EXPANDING SHARIA FINANCIAL INCLUSION AND HUMAN DEVELOPMENT IN INDONESIA

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ABSTRACT – This study investigates the impact of fintech peer-to-peer (P2P) lending on community well-being in Indonesia by analyzing its role in promoting Sharia financial inclusion. Using a quantitative approach, the research analyzes secondary data from 33 provinces in Indonesia spanning 2021-2022. The study employs panel data regression to assess the effects of fintech P2P lending borrower accounts and Gross Regional Domestic Product (GRDP) on Sharia financial inclusion. Additionally, Pearson's correlation analysis examines the relationship between Sharia financial inclusion and the Human Development Index (HDI). The findings reveal that both the number of borrower accounts and GRDP positively and significantly influence Sharia financial inclusion. Furthermore, the study demonstrates a positive correlation between Sharia financial inclusion and HDI. These results suggest that fintech P2P lending in Indonesia, by directing funds towards productive businesses, contributes to the improvement of community well-being through enhanced Sharia financial inclusion.
Keywords: Financial Technology, Peer to Peer Lending, Sharia finance, Human Development Index

ABSTRAK – Peran Fintech Lending dalam Memperluas Inklusi Keuangan Syariah dan Pembangunan Manusia di Indonesia. *Penelitian ini mengkaji pengaruh fintech peer-to-peer (P2P lending) terhadap kesejahteraan masyarakat di Indonesia dengan menganalisis perannya dalam mendorong inklusi keuangan syariah. Menggunakan pendekatan kuantitatif, penelitian ini menganalisis data sekunder dari 33 provinsi di Indonesia selama periode 2021-2022. Penelitian ini menggunakan regresi data panel untuk menilai pengaruh jumlah akun peminjam fintech P2P lending dan Produk Domestik Regional Bruto (PDRB) terhadap inklusi keuangan syariah. Selain itu, analisis korelasi Pearson digunakan untuk menguji hubungan antara inklusi keuangan syariah dan Indeks Pembangunan Manusia (IPM). Hasil penelitian menunjukkan bahwa jumlah akun peminjam dan PDRB berpengaruh positif dan signifikan terhadap inklusi keuangan syariah. Lebih lanjut, penelitian ini menunjukkan korelasi positif antara inklusi keuangan syariah dan IPM. Temuan ini menunjukkan bahwa fintech P2P lending di Indonesia, dengan menyalurkan dana ke bisnis produktif, berkontribusi pada peningkatan kesejahteraan masyarakat melalui peningkatan inklusi keuangan syariah.*
Kata Kunci: *Financial Technology, Peer to Peer Lending, Keuangan Syariah, Indeks Pembangunan Manusia*

INTRODUCTION

As we enter the era of Society 5.0, technology has seen a rapid expansion, particularly in Indonesia, where the number of internet users has grown significantly. According to the Indonesian Internet Service Providers Association (APJII), the number of internet users in Indonesia reached 215.63 million people in the period 2022-2023, marking a 26% increase from the previous half-decade period (APJJI, 2023). This technological revolution has reshaped the global industrial landscape and impacted all aspects of life, including the economic sector.

One notable phenomenon is the emergence and growth of financial technology (fintech), which offers efficient, affordable, and accessible financial services. This stands in stark contrast to traditional banks, which often provide loans with long terms and limited accessibility, especially for those residing in non-urban areas (Isukul & Tantua, 2021). As a result, some individuals have become unbanked, lacking access to basic financial services such as savings, investments, financing products, and money transfers (Agwu et al., 2020). Fintech addresses these issues by offering data and technology-based financial services, thereby increasing financial inclusion at a lower cost (Arnoud Boot et al., 2020; Arner et al., 2022; Philippon, 2020; Thakor, 2020). It plays a crucial role in financial inclusion and helps overcome traditional barriers that hinder people's participation in the formal financial system (Loviana, 2022).

In Indonesia, various fintech innovations have emerged, including payment startups, peer-to-peer (P2P) lending, crowdfunding, financial planning, remittance, retail investment, and financial research. In 2023, the Indonesian Fintech Association (AFTECH), appointed by the Financial Services Authority (OJK) as the Association of Digital Financial Innovation Providers (IKD) since 2019, recorded 352 licensed and officially registered fintech companies, 11 financial institutions, and 7 technology partners. Among the various types of fintech, P2P Lending has seen rapid growth in the country. The OJK reported that the outstanding financing value in the fintech P2P lending sector in May 2023 reached IDR 51.46 trillion, growing by 28.11 percent compared to the previous year. Furthermore, data from the OJK shows a significant increase in the number of loan recipient accounts through fintech lending. Between January 2022 and January 2023, there was a 72% increase in the number of borrower accounts. P2P covers services and products previously provided by

the traditional banking industry, including all segments such as MSMEs (Arner et al., 2022).

The rapid growth of fintech in various aspects is believed to have a major contribution to the national economy. The research institute INDEF revealed that the fintech sector in Indonesia has made a significant contribution to increasing national economic growth (INDEF, 2019), as other studies have shown in various countries. In Africa, fintech lending has become one of the influential factors in increasing financial inclusion and economic growth (Telukdarie & Mungar, 2023). Research in India also showed that fintech has played an important role in expanding access to financial services (Asif et al., 2023).
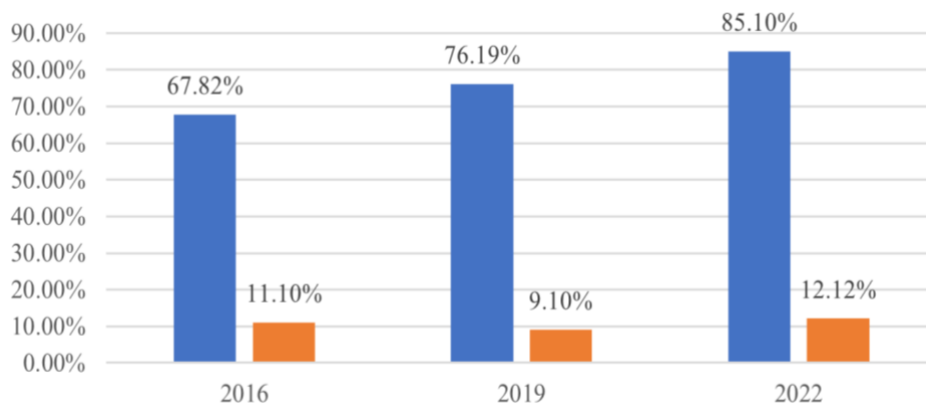

Figure 1. Comparison of Conventional and Shariah Financial Inclusion Index
(Source: OJK, 2023)

Despite ranking first in the Islamic Finance Country Index (IFCI) in the Global Islamic Finance Report 2021, the growth of Islamic financial inclusion in Indonesia has not kept pace with this achievement. OJK data reveals that the index for Sharia financial inclusion (ISFI) in Indonesia remains significantly lower than that of conventional financial inclusion. Notably, ISFI even experienced a 2% decline in 2019. Figure 1 further illustrates the stark disparity in the development of Sharia financial inclusion compared to conventional financial indices in Indonesia. The number of Sharia fintech lending institutions also remains disproportionately small compared to conventional fintech lending platforms. In 2022, there were 95 conventional fintech lending platforms, while only 7 were Sharia-based (OJK).

While Indonesia holds a leading position in the global Islamic finance landscape, the growth of Sharia financial inclusion within the country remains a pressing concern. Previous studies have demonstrated the positive impact of fintech on Islamic financial inclusion, such as research conducted in Makassar City and South Tangerang (Bakhtiar et al., 2022; Marini et al., 2020). These findings underscore the potential of fintech to contribute to Indonesia's overall growth and development, particularly in the realm of promoting Sharia financial inclusion. In addition, sharia financial involvement and inclusion play a critical role in enhancing public welfare. Studies by Azwar (2017) and Zahara (2021) have established a positive correlation between ISFI and the Human Development Index (HDI), highlighting the importance of Islamic financial inclusion in improving community well-being and socio-economic conditions.

This research aims to address this gap by examining the impact of fintech P2P lending on Sharia financial inclusion. Previous studies have primarily focused on the broader influence of fintech on financial inclusion, often within specific geographical contexts. This study, therefore, breaks new ground by analyzing the impact of fintech on Sharia financial inclusion in Indonesia. Additionally, it explores the relationship between Islamic financial inclusion and the Human Development Index (HDI), which serves as a vital indicator of the quality of life and welfare in Indonesia. Through this comprehensive analysis, this study seeks to identify how fintech lending can contribute to improving the quality of life and welfare of the Indonesian population, with a specific focus on promoting Sharia financial inclusion.

LITERATURE REVIEW

Fintech P2P Lending

According to OJK Regulation Number 77/2016, Peer-to-Peer (P2P) lending is a platform that brings together lenders and loan recipients to carry out lending and borrowing transactions through an electronic system. P2P lending provides financing to anyone effectively, in any amount, and transparently. This lending model is deemed effective due to its collateral-free financing system and utilization of technology, enabling widespread accessibility across Indonesia (Wang et al., 2015). P2P lending operates similarly to a marketplace system, offering digital access to financing that is inclusive and accessible to all segments of society (Harp et al., 2021). Transactions in P2P lending are carried out entirely online to facilitate both borrowers and lenders (Murifal, 2018).

Borrowers can apply for loans online by submitting the required documents, such as financial statements, and providing information related to the purpose of the financing request. Investors can browse loan application data on a provided dashboard to select eligible borrowers for funding (Rahmati & Ibrahim, 2022). However, the digital nature of P2P lending also brings potential risks, including the threat of hacking and misuse of client data, which could adversely affect P2P lending performance in the future (Kurniansyah, 2019). Despite these risks, the user-friendly nature of P2P lending platforms, which provide investors with access to borrower data, allows for informed decisions and prompt financing to eligible borrowers (Wijayanti & Pujiyono, 2021).

Sharia Financial Inclusion

Financial inclusion, according to the Financial Services Authority (OJK), is an effort to remove barriers that prevent people from utilizing financial services, with the goal of improving living standards. This concept extends to the Islamic financial sector, where Sharia finance holds significant potential in Indonesia, particularly in Sharia banking. Therefore, financial inclusion efforts can leverage Sharia financial options as an alternative to conventional ones. Hidayanti (2018) defines Sharia financial inclusion as a condition where all segments of society, particularly those facing financial barriers, can access various financial products and services that align with Sharia principles. Islamic financial inclusion aims to minimize price and non-price barriers, enabling a financial ecosystem free from riba (interest), gharar (uncertainty), and maysir (gambling) to reach the community, adhering to Sharia principles.

The level of financial inclusion can be measured through various methods, including the Financial Inclusion Index (IFI) developed by Sarma (2008). This method utilizes a 3-dimensional approach involving accessibility, availability, and use, with each dimension encompassing several indicators and mathematical calculations. A similar method, the Index of Sharia Financial Inclusion (ISFI), is used to calculate Sharia financial inclusion, employing indicators specific to Islamic financial services (Zahara, 2021).

Linkage between Islamic Financial Inclusion and Human Development Index

According to the basic theory of development (Śledzik, 2013), an advanced and well-functioning financial sector requires the participation of business players

who innovate with technology. Financial inclusion generally has a positive and significant influence on the Human Development Index (HDI). Research conducted in eight ASEAN countries using the Panel Vector Error Correction Model (VECM) found that financial inclusion affects human development (Thathsarani et al., 2021). Similar findings emerged from research in India, highlighting the importance of financial inclusion for human development (Kuri & Laha, 2011). Studies in various countries using the IFI calculation revealed that developed countries generally exhibit high financial inclusion levels, positively impacting society despite fluctuations over time. However, developing countries often struggle with low financial inclusion, necessitating efforts to expand financial service facilities (Dienillah & Anggraeni, 2016).

Research on the impact of Islamic financial inclusion on HDI is limited. One study conducted in Indonesia from 2015 to 2019 indicated that Islamic financial inclusion positively affects HDI, although this effect is not uniformly distributed across all provinces (Zahara et al., 2021).

Research Hypotheses

Based on the theoretical basis and research framework discussed, the following hypotheses are proposed regarding the effect of Fintech on Islamic financial inclusion:

H1: Fintech Lending, measured by the number of Borrower accounts, has a positive effect on the Sharia Financial Inclusion Index.

H2: Gross Regional Domestic Product (GRDP) has a positive effect on the Sharia Financial Inclusion Index.

H3: There is a positive correlation between the Sharia Financial Inclusion Index and the Human Development Index.

METHODOLOGY

Research Approach

This study employed a quantitative research approach, specifically adopting a positivist philosophy. This approach emphasizes objective measurement and analysis of data to test proposed hypotheses and draw statistically significant conclusions about the studied population (Sugiyono, 2017). The research

design involved collecting empirical data, analyzing it using rigorous statistical methods, and interpreting the results to assess the validity of the established hypotheses.

Data Collection

This study utilized a panel data collection technique, combining time series and cross-sectional data to provide a comprehensive understanding of the phenomena under investigation. Secondary data, obtained indirectly from intermediary sources, were used throughout the research (Indriantoro & Bambang, 2013). Specifically, data were collected from the Financial Services Authority (OJK) in the form of Sharia Banking Statistics (SPS) and Fintech Lending Statistics. Additionally, data on the number of populations, Gross Regional Domestic Product (GRDP), and the Human Development Index (HDI) were obtained from the Central Statistics Agency (BPS).

Population and Sample

The population of interest for this research comprised all individual, legal entity, and business entity accounts with outstanding debts under LPMUBTI (Fintech Lending) agreements. These participants were grouped by province, covering 34 provinces in Indonesia. A purposive sampling method was employed, with the criteria that each province included in the study must be listed in the OJK SPS report and have corresponding data on population, GRDP, and HDI recorded in BPS. This resulted in a final sample of 33 provinces in Indonesia, excluding North Kalimantan province, which was not listed in the OJK SPS report. Data were collected for the period from 2021 to 2022.

Variables and Operational Definitions

The variables used in this study were categorized as dependent, independent, and control variables. The dependent variable was the Index for Sharia Financial Inclusion (ISFI), a multidimensional measure encompassing accessibility, availability, and usage dimensions, similar to the Financial Inclusion Index (IFI) calculation (Sarma & Pais, 2008). The independent variable was the number of borrower accounts in fintech P2P lending. Control variables, including GRDP, were incorporated to minimize the influence of extraneous factors on the dependent variable. Additionally, the Human

Development Index (HDI) was used to analyze its correlation with the ISFI. Table 1 provides a detailed operational definition of each variable.

Table 1. Operational Definition

No.	Variable	Operational Definition
1	*Dependent Variables*	
	Index for Sharia Financial Inclusion:	Measured using the ISFI method, a multidimensional framework based on the Financial Inclusion Index (IFI) calculation (Sarma & Pais, 2008), encompassing three dimensions:
	a. Accessibility Dimension (D1)	Calculated as the amount of Sharia bank Third Party Funds (DPK) in each province divided by the population, multiplied by 1,000 (Sarma & Pais, 2008).
	b. Availability Dimension (D2)	Calculated as the number of Sharia banking branch offices per province, multiplied by 100,000 (Sarma & Pais, 2008).
	c. Usage Dimension (D3)	Calculated as the total financing of Sharia banks in each province divided by GDP, multiplied by 1,000 (Sarma & Pais, 2008).
2	*Independent Variable*	
	Borrower (Account)	Number of fintech lending loan recipient accounts, including individuals, legal entities, and/or business entities, with outstanding debts under the LPMUBTI agreement (Finance, 2023).
3	*Control Variables*	
	Gross Regional Domestic Product (GRDP)	The sum of gross value added of all economic activities in each province (BPS, 2023).
4	*Human Development Index (HDI)*	An index reflecting the quality of life based on development outcomes in health, education, etc. (BPS, 2023)

(Source: Author's compilation, 2023)

Data Analysis Methods

This study employed both descriptive and inferential analysis techniques. Descriptive analysis, as defined by Sugiyono (2017), involves summarizing and presenting data in a meaningful way without drawing generalizable conclusions. In this study, descriptive statistics such as mean, minimum, and maximum were calculated using STATA software. Data distribution visualizations were created using QGIS software.

Two inferential analysis methods were employed. First, panel data regression was used to examine the effect of the independent variable (number of borrower accounts) on the dependent variable (Islamic financial inclusion, measured by ISFI). Before conducting the regression analysis, a series of model tests, including the Chow Test, Hausman Test, and Breusch-Pagan Test, were performed to determine the most appropriate model (Common Effect Model

(CEM), Random Effect Model (REM), or Fixed Effect Model (FEM)). The regression model was specified as follows:

1. Accessibility Dimension (D_1)
$$D_1 = \frac{\text{Amount of TPF in Province } i \text{ (year } t)}{\text{Number of Population in Province } i \text{ (year } t)} \; x \; 1000$$
2. Availability Dimension (D_2)
$$D_2 = \frac{\text{Number of Bank Service Offices in Province } i \text{ (year } t)}{\text{Number of Population in Province } i \text{ (year } t)} \; x \; 100.000$$
3. Usage Dimension (D_3)
$$D_3 = \frac{\text{Amount of Credit in Province } i \text{ (year } t)}{\text{Total GRDP in Province } i \text{ (year } t)} \; x \; 100.000$$

After calculating each dimension, the ISFI formula was computed as follows:

$$ISFI = \frac{1}{2} \left[\frac{\sqrt{d_1{}^2 + d_2{}^2 + d_3{}^2}}{\sqrt{3}} + \left(1 - \frac{\sqrt{(1-d_1)^2 + (1-d_2)^2 + (1-d_3)^2}}{\sqrt{3}} \right) \right] \qquad (1)$$

After obtaining ISFI scores in each province for particular year, the authors regressed panel data. Before conducting the regression analysis, a series of model tests, including the Chow Test, Hausman Test, and Breusch-Pagan Test, were performed to determine the most appropriate model (Common Effect Model (CEM), Random Effect Model (REM), or Fixed Effect Model (FEM)). The regression model was specified as follows:

$$ISFI_{it} = \beta 0 + + \beta 1 Borrower_{it} + \beta 2 GRDP_{it} + \varepsilon \qquad (2)$$

Where,
ISFI	: Index for Sharia Financial Inclusion
Borrower	: Number of Fintech P2P Lending Beneficiary Accounts (Accounts)
GRDP	: Gross Regional Domestic Product (Billion Rupiah)
i	: 33 provinces in Indonesia
t	: Period 2021-2022

Subsequently, the authors conducted a correlation analysis between Sharia financial inclusion and the Human Development Index (HDI). Pearson correlation analysis was used to measure the directional relationship between two variables. Quantitatively, this relationship is represented by a single value known as the correlation coefficient *(r)*, which ranges from -1 to 1, indicating both positive and negative directions. A correlation coefficient value of 0 means that the two variables have no relationship. If the value is close to 0, the relationship is weak; if the value is close to 1, the relationship is strong. A correlation coefficient of 1 indicates a perfect correlation. The variable Index

for Sharia Financial Inclusion (ISFI) was used to measure the relationship with the Human Development Index.

RESULTS AND DISCUSSION

Descriptive Analysis

To present a general overview of the statistical data for each variable used, the authors performed a descriptive analysis, which includes the mean, minimum, and maximum values.

Table 2. Descriptive Analysis Results

Variable	Mean	Std. Dev	Minimum	Maximum
ISFI	0.5166255	0.242938	0.0421913	0.9192798
Borrower	411580.1	831527.6	8219	3835266
HDI	71.66939	3.960861	60.62	81.65

(Source: Processed Data, 2023)

Based on the descriptive statistical table, the average ISFI value of the sample used was 0.5166 per province per year. The highest ISFI value was recorded in Nanggroe Aceh Darussalam Province in 2021, with a value of 0.91928, while the lowest ISFI value was observed in East Nusa Tenggara (NTT) Province in 2021, with a value of 0.04219. This significant disparity reflects the high inequality of access to Islamic financial services among the public. The available data also imply that Nanggroe Aceh Darussalam Province is a pioneer of Sharia economic and financial development in Indonesia, potentially attributed to policies such as the Qanun on Sharia Financial Institutions that underscore the province's commitment to advancing the Islamic economy and finance sector.
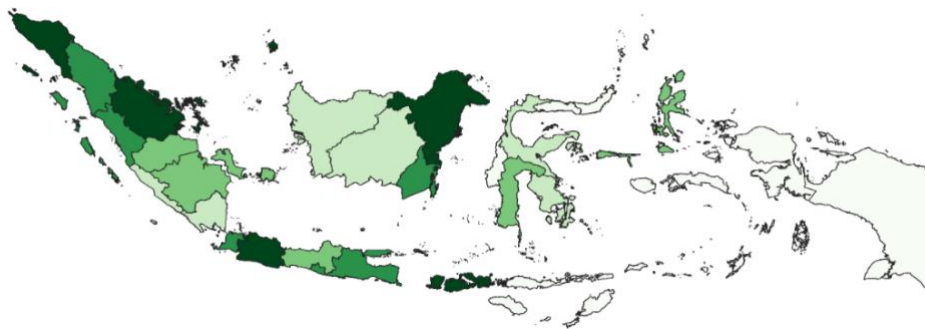

Figure 3. Distribution of ISFI Value Levels in Indonesia

Figure 3 shows the distribution of ISFI values throughout Indonesia. The five provinces with the highest ISFI scores in 2022 were: 1) Nanggroe Aceh Darussalam (NAD), 2) Nusa Tenggara Barat (NTB), 3) Jawa Barat, 4) DKI Jakarta, and 5) Yogyakarta. In addition to Nanggroe Aceh Darussalam, Nusa Tenggara Barat is also one of the centers of the world's halal industry (KNEKS, 2022). Various acceleration programs to increase the potential of the Sharia economy and finance were carried out in this area, such as the Regional Committee for Sharia Economy and Finance (KDEKS) in NTB (KNEKS, 2019, 2022). Besides Aceh and NTB, the other three provinces with high ISFI scores were located on the island of Java, which has adequate infrastructure, especially internet penetration. Consequently, fintech P2P lending users are growing more rapidly on this island.

As for the distribution of the number of fintech P2P lending borrowers, the descriptive statistics indicate an average of 411,580.1 accounts per province per year. The highest number of loan recipient accounts was recorded in Jawa Barat Province in 2022, totaling 3,835,266 accounts, while the lowest number was in North Maluku Province in 2021, totaling 8,219 accounts. This highlights a significant disparity in the number of users across provinces.
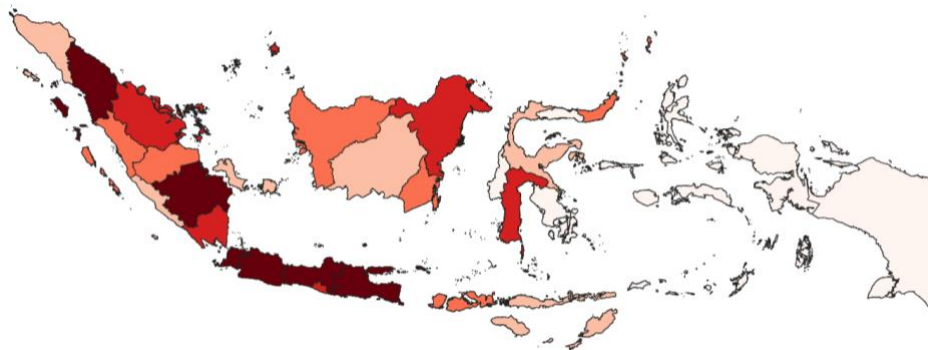

Figure 4. Distribution of Fintech P2P Lending Users in Indonesia

Fintech P2P lending users were also not evenly distributed throughout Indonesia. Figure 4 shows that the majority of fintech P2P lending borrowers were on the islands of Java and Sumatra, followed by Kalimantan and Sulawesi. There were significant disparities, especially in the eastern part of Indonesia. The researchers identified provinces with the lowest number of fintech P2P lending borrowers as 1) Maluku Utara, 2) Papua Barat, 3) Sulawesi Barat, 4) Maluku, 5) Gorontalo, 6) Papua, and 7) Nusa Tenggara Barat.

The unequal distribution of fintech P2P lending users in Indonesia is concerning, as there are numerous positive impacts associated with fintech P2P lending on Islamic financial inclusion. The use of fintech P2P lending is closely related to internet penetration. Based on data from BPS in 2022, DKI Jakarta had the highest proportion of people aged 5 years and over who have accessed the internet, while Maluku Utara, Nusa Tenggara Barat, and Papua were the three provinces with the lowest percentages. Therefore, it is possible that the low number of P2P lending fintech borrowers is due to low internet access, as research indicates that the use of fintech depends on internet services.

Multiple Regression Analysis

The authors first tested the models to determine the best fit among the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The initial test conducted was the Chow Test to determine the best model between CEM and FEM.

Table 3. Model Test Results

Model	Prob > F
Chow	0.0000
Hausman	0.8656
Breusch-Pagan	0.0000

(Source: Processed Data, 2023)

The Chow Test results showed a Prob > F value of 0.0000, indicating that FEM is better than CEM because $0.0000 < \alpha$ (1%). The next step was to perform the Hausman Test to select the best model between FEM and REM. The Hausman Test results indicated that REM is better than FEM because Prob > chi2 was $0.8656 > \alpha$ (1%). Finally, the authors conducted the Breusch-Pagan Test to determine the best model between REM and CEM. The test results showed a Prob > chibar2 value of 0.0000, which is less than α (1%). Therefore, the REM model was determined to be the best model for use in panel data regression.

Panel Data Regression Analysis Results

Table 4 presents the results of the panel data regression analysis, examining the effect of the independent variable (number of borrower accounts) and the control variable (Gross Regional Domestic Product, GRDP) on the dependent variable, the Index for Sharia Financial Inclusion (ISFI). The analysis

incorporated 66 observations, representing data from 33 Indonesian provinces over 2021-2022.

The model demonstrated statistically significant explanatory power, with an R-squared value of 0.2352. This indicates that approximately 23.52% of the variation in ISFI can be attributed to the independent variables. While this value is considered relatively low, it is within the expected range for social science research. The overall significance of the model is confirmed by both the Prob > chi2 (0.0020) and Prob > F (0.0002) values, which are significant at the 1% level. This confirms that both the number of borrower accounts and GRDP have a statistically significant impact on ISFI.

Table 4. Panel Data Regression Analysis Results

					Number of obs	66
					R-squared	0.2352
					Prob > chi^2	0.0020*
					Prob > F	0.0002*
	Coef	**Std. Err.**	**Z**	**P > |z|**	**95% Conf. Interval**	
Borrower	9.34E-08	4.43E-08	2.11	0.035**	6.65E-09	1.80E-07
GRDP	1.04E-06	4.29E-07	2.42	0.016**	2.29E-07	1.88E-06
Cons	.4069698	.0494373	8.23	0.000	.3100745	.5038652

Note:
(*) Significant at the level of 1%
(**) Significant at the level of 5%

The coefficient for the Borrower variable, 9.34E-08, suggests that a one-unit increase in fintech lending loan recipient accounts is associated with a 9.34E-08 increase in ISFI, holding other variables constant. This coefficient is statistically significant at the 5% level (P > |z| = 0.035). Similarly, the GRDP variable exhibits a positive and statistically significant coefficient of 1.04E-06, indicating that a one-billion-rupiah increase in GRDP corresponds to a 1.04E-06 increase in ISFI, holding other factors constant. This coefficient is also statistically significant at the 5% level (P > |z| = 0.016). The constant term (0.4069698) represents the predicted ISFI value when all independent variables are zero and is statistically significant at the 1% level. The table further provides 95% confidence intervals for each coefficient, reinforcing the reliability of the estimated effects.

The results of the panel data regression produced the following mathematical equation:

$$ISFI_{it} = 0.4069698 + 9.34e\text{-}08 Borrower_{it} + 1.04e\text{-}06 GRDP_{it} + \varepsilon$$

The panel data regression results suggest that both the number of fintech lending loan recipient accounts (Borrower) and GRDP have a positive and statistically significant impact on the Islamic Financial Inclusion Index (ISFI). However, the low R-squared value indicates that there may be other important factors not included in the model that also influence ISFI. The authors should consider discussing these limitations and potential avenues for future research in their study.

Discussion

This study reveals a significant positive relationship between fintech P2P lending, measured by the number of loan recipients, and enhanced financial inclusion. This finding aligns with Sarma and Pais (2008), who emphasized that inclusive finance should strive to reach all levels of society. It also supports Basrowi et al. (2020), who found a positive relationship between Sharia financial technology and financial inclusion in Lampung Province. The increasing number of individuals utilizing fintech P2P lending for funding contributes to a higher assessment of Islamic financial inclusion and improved access to Islamic financial services. This aligns with the nature of fintech P2P lending, which often caters to market segments underserved by traditional financial institutions, effectively bridging the gap in financial access (PwC, 2019).

The ease of regulations associated with fintech P2P lending contributes to its appeal (Karim Sinata, 2022). This is particularly relevant in the context of MSMEs in Indonesia, where a significant proportion (74%) face challenges in accessing finance through traditional banking institutions due to stringent requirements (PwC, 2019). Fintech platforms, with their user-friendly interfaces and streamlined processes, offer greater accessibility and ease of use, as highlighted by Anah et al. (2020).

Despite the potential of fintech P2P lending to enhance Islamic financial inclusion in Indonesia, the limited availability of Sharia-compliant platforms remains a concern. The number of Sharia fintech platforms lags significantly behind conventional platforms, as illustrated in Figure 5. This disparity

necessitates focused attention on expanding the presence of Sharia fintech in Indonesia to cater to the specific needs of the Muslim population and promote Islamic financial inclusion, particularly in provinces where it remains low. This expansion should prioritize ethical considerations, ensuring that fintech P2P lending services remain free from practices like usury (*riba*), excessive uncertainty (*gharar*), and gambling (*maysir*), which contradict Islamic principles and can harm borrowers.
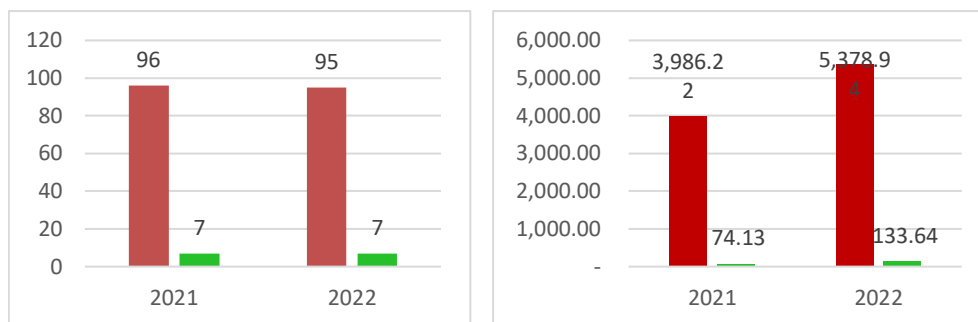

Figure 5. Conventional and Sharia Fintech Platforms and Funds
(Source: OJK-processed, 2023)

The relationship between fintech and the banking sector is often perceived as competitive (Tazkiyyaturrohmah, 2018). However, a more nuanced perspective recognizes the potential for collaboration between these sectors. Fintech can serve as a bridge for businesses that are not yet eligible for traditional bank financing (Padli, 2021). This can be achieved through strategic partnerships, as suggested by Indo Premier Securities, where Sharia banks refer customers ineligible for their financing products to Sharia-compliant fintech platforms. This creates a synergistic ecosystem beneficial to both sectors. Our findings support this notion, indicating that borrowers utilizing fintech P2P lending services gain exposure to formal Sharia financial services, including bank accounts, ultimately contributing to increased deposits and overall financial inclusion.

Figure 6, adapted from PwC (2019), illustrates the fintech P2P lending scheme. It highlights the platform's role as an intermediary connecting lenders with borrowers, facilitating access to credit while incorporating risk assessment measures through credit bureau services. The flexibility offered in loan disbursement and repayment methods, including Sharia-compliant options,

further contributes to the appeal and accessibility of fintech P2P lending, ultimately supporting the growth of Islamic financial inclusion.
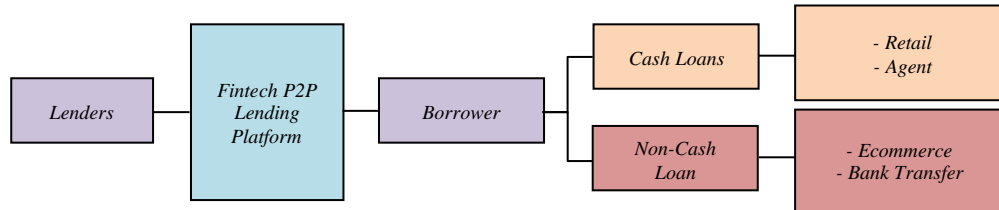

Figure 6. Fintech P2P Lending Scheme
(Source: PwC, processed, 2019)

The benefits of fintech P2P lending extend beyond individual borrowers, positively impacting the broader economy. For MSMEs, access to financing through these platforms can lead to increased production, company value, and improved financial and operational performance (Marginingsih, 2021; Purba & Sadriana, 2021). On a macroeconomic level, research emphasizes the role of financial inclusion in promoting human development, particularly in developing countries (Abdelghaffar & Emam, 2023; Ibrahim, 2023). Governments can leverage fintech to provide accessible and affordable financial services, fostering economic growth and improving the socio-economic well-being of their citizens.

Table 5. Pearson Correlation Results

	ISFI	HDI
ISFI	1.0000	0.6041
Sig.	0.0000	0.0000
HDI	0.6041	1.0000
Sig	0.0000	0.0000

This study confirms a strong positive correlation between the Index for Sharia Financial Inclusion (ISFI) and the Human Development Index (HDI), as evidenced by a correlation coefficient of 0.6041 (Table 5 and Figure 7). This finding aligns with research in India (Kuri & Laha, 2011) and Indonesia (Umar, 2017; Zahara, 2021), highlighting the crucial role of financial inclusion, particularly in its Sharia-compliant form, in driving human development and improving overall quality of life.
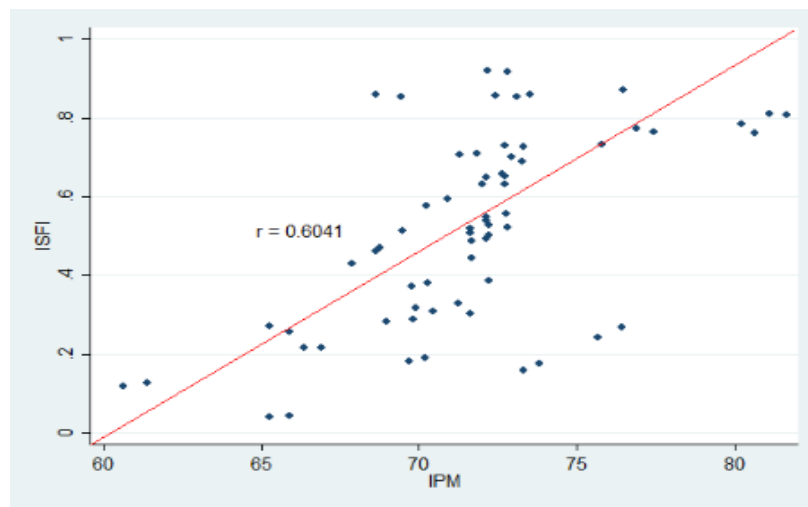
Figure 7. Scatter Plot

Confirming the views of neoclassical economists like Keynes (1937), this study emphasizes the financial sector's role in poverty reduction and improving living standards. Financial inclusion, facilitated by accessible financial intermediaries and innovative financial tools like fintech, empowers individuals, particularly the poor, with saving opportunities and access to essential services like education and healthcare (Beck, Demirgüç-Kunt, & Levine, 2007). This access contributes to income growth, reduced inequality, and overall human development, as evidenced by research spanning various countries (Ababio et al., 2021; Burgess & Pande, 2005; Seven & Coksun, 2016).

Thus, this study provides compelling evidence for the positive and significant influence of fintech P2P lending on Sharia financial inclusion in Indonesia and its subsequent impact on human development. Expanding the reach of Sharia-compliant fintech platforms, fostering collaborations between fintech and the banking sector, and promoting financial literacy are crucial steps towards harnessing the full potential of fintech in driving inclusive and sustainable economic growth in Indonesia.

CONCLUSION

This study investigated the impact of fintech P2P lending on Sharia financial inclusion and its relationship with the Human Development Index (HDI) in Indonesia. The findings revealed a positive and significant influence of fintech P2P lending on the number of borrowers accessing Sharia financial services.

This indicates that fintech P2P lending can play a crucial role in expanding financial inclusion, particularly for underserved communities. Furthermore, the study established a strong positive relationship between Sharia financial inclusion and HDI. This signifies that the increased access to Islamic financial services through fintech P2P lending contributes to improved quality of life and human development. However, the research also highlighted significant geographical disparities in Sharia financial inclusion and the limited number of Sharia P2P lending platforms compared to their conventional counterparts. These findings emphasize the need for targeted policy interventions to address these inequalities.

Based on these results, several policy implications can be formulated. First, the government and relevant institutions like KNEKS should prioritize the development of Sharia P2P lending platforms, leveraging their potential to significantly boost Islamic financial inclusion in Indonesia. Second, addressing the disparities in internet access and providing support for the development of fintech P2P lending across Indonesia is crucial. This will ensure wider accessibility to financial services and bridge the gap between conventional and Islamic financial systems.

While this study provides valuable insights, it also acknowledges limitations. The combined data on conventional and Sharia P2P lending platforms restricted the analysis of the specific impact of Sharia P2P lending platforms on Islamic financial inclusion. Future research should address this limitation by utilizing primary data covering all regions of Indonesia will allow for a more precise analysis of the impact of Sharia P2P lending platforms on Islamic financial inclusion. Future studies should also explore the influence of fintech P2P lending platforms using additional proxies as independent variables, providing a more comprehensive understanding of their role in promoting Islamic financial inclusion.

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