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Nexus Islamic Finance Development and Income Inequality in Indonesia: Testing Kuznets Curve Hypothesis

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Abstract

This study analyzes the applicability of the Kuznets curve hypothesis within the specific context of Islamic finance development in Indonesia and its resultant implications for income inequality. The novelty of this research lies in integrating Islamic finance, specifically from the banking sector, with Islamic social finance instruments, namely zakat, infaq, and sadaqah. Crucially, it interrogates whether the Kuznets curve hypothesis remains pertinent within this expanded framework. Utilizing secondary panel data encompassing 25 Indonesian provinces over the 2019–2020 period, the study employs panel data regression techniques, specifically common effect, fixed effect, and random effect models, which were systematically selected via the Chow, Hausman, and Lagrange multiplier tests. The empirical findings demonstrate unequivocally that the development of Islamic finance, spanning both the financial and social sectors, significantly influences income inequality. This substantiates the Kuznets curve hypothesis: inequality initially escalates but subsequently diminishes as development matures. Furthermore, the results underscore the role of the Human Development Index (HDI) and the prevalence of mosques in mitigating inequality, while population density exhibits a positive association with inequality. This study conclusively argues that strengthening financial inclusion and professionalizing the management of Islamic social finance constitute strategic approaches for mitigating income inequality in Indonesia.

Keywords: Human Development Index; Income Inequality; Islamic Finance; Islamic Social Finance; Kuznets Curve

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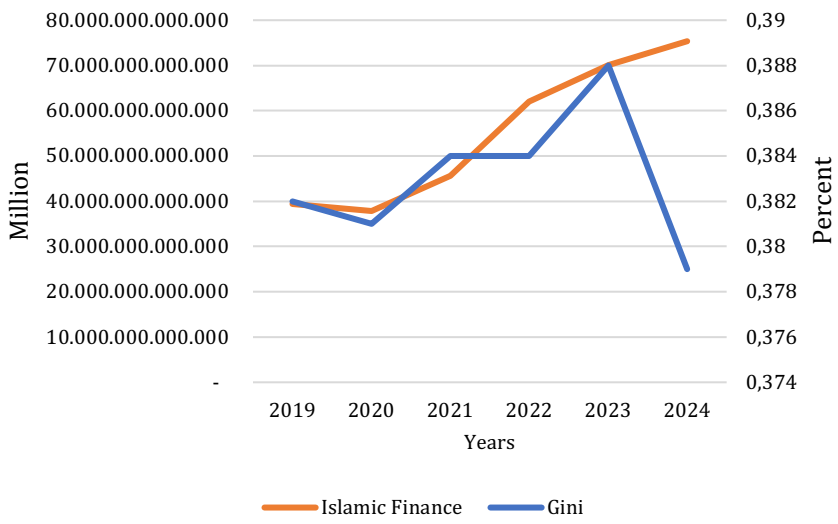
Introduction

Home to the world's most substantial Muslim population in Southeast Asia, Indonesia presents a unique setting for the growth of Islamic finance. According to *The Muslim 500: The World's 500 Most Influential Muslims 2024* report by The Royal Islamic Strategic Studies Center (RISSC), as cited by Databoks, the Muslim population in Southeast Asia amounts to 240.62 million people, or 86.7% of the total population. This demographic reality presents an opportunity for the growth of the Islamic finance industry, as the demand for financial instruments is expected to increase (Gheeraert, 2014; Kasri, 2014). Consequently, the expansion of the Islamic finance industry is posited to contribute to economic growth (Kazak et al., 2023). The contribution of Islamic finance to economic growth will inevitably have an impact on the level of income inequality. Economic growth in recent years has been characterized by an uneven, leading to social jealousy, widened social gaps, and increased income inequality (Noor, 2014). Income inequality can commonly be measured by the Gini ratio; a higher Gini ratio indicates greater income inequality (Lestari & Auwalin, 2022).

Figure 1: The Development of the Gini Index and Islamic Finance in Indonesia during 2019–2024



Source: BPS (2024), OJK (2024), BAZNAS (2024)

The development of income inequality and Islamic finance in Indonesia during the period 2019–2024 is illustrated in Figure 1. Income inequality is measured by the Gini index, while Islamic finance is measured through total financing and assets in the banking sector, as well as social finance instruments such as zakat, fitrah, and infaq or alms. Overall, there appears to be an anomalous relationship between Islamic finance and the Gini index. In 2020, the rapid development of Islamic finance coincided with a rise in income inequality. Islamic finance has grown rapidly through financing and the expansion of Islamic bank assets; however, its impact has been felt primarily by the upper-middle groups or specific sectors that are able to access Islamic financial products. In contrast, by 2024, inequality had declined while Islamic finance continued to grow. The penetration of Islamic financial products into MSMEs, the micro sector, and through social instruments zakat, fitrah, and infaq/alms) has increased, thereby contributing to the reduction of inequality. The temporally dynamic relationship between Islamic finance and income inequality warrants further examination. Islamic finance, which is based on Islamic principles, applies an income redistribution mechanism from the wealthy to the poor through zakat, fitrah, and infaq/alms, which can reduce inequality (Lestari & Auwalin, 2022). On the other hand, Islamic finance facilitates access to interest-free funds through profit-and-loss sharing instruments, which should provide opportunities for MSMEs (Micro, Small, and Medium Enterprises) to develop their businesses (Kamalu & Ibrahim, 2021).

The observed trend of the relationship between Islamic finance and income inequality in Indonesia exhibits a notable congruence with the postulates of the Kuznets curve hypothesis. Research by Kamalu & Ibrahim (2023) explains that the Kuznets Curve can be applied to the Islamic financial system. The research suggests that progress and financial inclusion can lessen income inequality in the long term. It also provides insights for policymakers in Islamic Cooperation Organization (OIC) countries to optimize the development of Islamic finance and increase human development to reduce income inequality (Kamalu & Ibrahim, 2023). Another study by Ridzuan et al. (2021) indicated a complex correlation between income inequality and financial development in Thailand, the Philippines, Malaysia, and Indonesia before the COVID-19 pandemic. While some countries support the existence of the Financial Kuznets Curve, the results are not uniform across the sample. This research provides important insights for policymakers in ASEAN countries to consider the impact of financial development on income inequality. Policies supporting financial inclusion and ensuring the benefits of financial development

are accessible to diverse social levels can help reduce income inequality (Ridzuan et al., 2021).

Given Indonesia's economic landscape, the Kuznets Curve hypothesis offers a crucial framework for understanding the link between the development of Islamic finance and changes in income inequality. However, the hypothesis has primarily been applied to the Islamic banking sector thus far. In contrast, the social Islamic finance sector has received comparatively limited attention. Therefore, this research aims to analyze the Kuznets Curve hypothesis in the context of social Islamic finance and income inequality. In the short term, the growth of Islamic social finance, such as zakat and waqf, may increase inequality due to uneven distribution, institutional limitations, and disparities in management capacity. In the long run, zakat serves as a continuous wealth transfer mechanism from the rich to the poor, while productive waqf expands access to education, health, and economic opportunities (Maulina et al., 2023; Tok et al., 2022). Thus, as management becomes more effective, Islamic social finance can significantly reduce inequality in line with the Kuznets Curve hypothesis.

This study examines the Kuznets Curve hypothesis in the context of Indonesia's developing Islamic financial ecosystem. We test the idea that as the Islamic finance sector grows, it might first increase income inequality before ultimately reducing it, following the classic inverted U-shape pattern. A key innovation of our research is the thorough measurement of Islamic finance. We go beyond the usual focus on banking. We also include the important but often overlooked role of the Islamic social finance sector, such as zakat and waqf. Previous studies have either compared countries or focused narrowly on commercial banking, leaving a significant research gap. By considering the important social welfare aspect, this study provides a more complete understanding of how a full Islamic financial system affects income distribution. This offers valuable insights for fair economic development.

Literature Review

The consensus among scholars, Greenwood & Jovanovic (1990), explains the existence of a non-linear relationship among finance, growth, and inequality, which is widely known as the Kuznets Curve Hypothesis. This concept is adopted from Kuznets' (1995) framework, which posits that the relationship between economic development and inequality takes the form of an inverted U-curve. Previous studies reaffirm that there is indeed an inverted U-shaped relationship between financial development and income levels (Cetin et al., 2021; Wang et al., 2023). Financial

development adversely impacts economic growth initially due to the accessibility of financial services only to the high-income earning individuals which increases income inequality (Kamalu & Ibrahim, 2021). In the short run, income inequality increases further due to technological innovation as certain technologies are only accessible to particular groups (Cetin et al., 2021). Nevertheless, technological advancement triggers economic growth which then helps in the long run to mitigate inequality (Wang et al., 2023).

To attain growth in the Islamic economy, the development of Shariah-compliant financial instruments is essential. One of the aims of this development is to close the income gap by widening financial inclusion (Kamalu & Ibrahim, 2021; Mohamad et al., 2020). The income-generating capacity of Islamic banking financing instruments, especially those that are built around profit-and-loss sharing frameworks, incorporates wider portions of the community in income generation (Agustina et al., 2023). In addition, measures of Islamic social finance such as zakat and waqf directly lower inequality by moving wealth to poor communities (Tok et al., 2022). The development of Islamic finance is tied to the Kuznets Curve hypothesis explained above and income inequality.

An individual's assessment of the extent of income inequality is influenced in part by the complexity of the impacts of economic growth. Initially, the expansion of the financial sector may lead to higher inequality within a particular economy. This is due to the fact that members of the higher income brackets more easily obtain access to banking services, particularly in the early phases of financial sector development. As the financial sector expands, members of the upper income brackets will be able to obtain the capital, financial collateral, and collateral needed to obtain banking services, grow their businesses, and accumulate ever more wealth. Financial institutions in a developing economic environment tend to overlook lower economic classes with weak assets, high transaction expenses, and a low degree of financial literacy that is typically associated with financial services exclusion. This scenario is further articulated with the in the Kuznsts Curve Hypothesis which primarily focuses income distribution during economic growth. In the context of a specific financial system, the following hypothesis seeks to demonstrate the effect that finance has in the early stage of development.

H_1: Islamic Finance (ISF) has a positive and significant effect on inequality.

As the financial sector progresses, the reach of banking services and financial products expands beyond just the affluent segments of the society, becoming increasingly accessible to the middle and lower classes. Enhanced infrastructure and

the development of a wider array of financial products give these previously excluded segments of the society the potential to borrow and finance investments that could raise their income and improve their standard of living (Kamalu & Ibrahim, 2023). This is a positive development and there are studies showing that Islamic finance, in particular, helps to reduce inequity over time (Agustina et al., 2023; Mohamad et al., 2020; Putriani & Prastowo, 2019). This is in line with the Kuznets Curve Hypothesis which explains, in a simplified manner, that with certain economic development, inequity could, paradoxically, increase. It is expected that the development of Islamic finance will improve financial literacy and, consequently, reduce inequity in the society. This leads to the following hypothesis regarding the turning point.

H_2: The square of Islamic Finance (ISF) has a negative and significant effect on inequality.

The development of Islamic finance is a dual-faceted process, extending beyond the commercial banking sector into the crucial social sector. Instruments like zakat, infaq/sadaqah (charity), and waqf (endowments) are specifically designed to influence and reduce the level of inequality by redistributing wealth (Lestari & Auwalin, 2022). In principle, these tools form a powerful mechanism for creating a robust social safety net and empowering the underprivileged. However, the practical implementation of Islamic social finance, particularly in its early stages of institutional development, can paradoxically lead to an increase in inequality. This counterintuitive outcome often arises from significant operational challenges. Key issues include uneven distribution, where aid may be concentrated in accessible urban centers, and institutional limitations, such as inadequate data for targeting eligible recipients. When these foundational aspects are not yet mature, the benefits can become concentrated, potentially widening the gap. The following hypothesis is proposed to test this initial-stage effect.

H_3: Islamic Social Finance has a positive and significant effect on inequality.

The first few steps might be difficult, but Fadila (2019) and Lestari & Auwalin (2022) argue that the overall impact of Islamic social finance will eventually support the social mission of the Islamic finance system, which is to diminish inequality. Zakat, infaq, charity, and waqf all function to redistribute some of the wealth from the economically affluent to the economically poor, thus fostering a reduction in the socio-economic disparity that is present in the society. Declining phase of the Kuznets Curve will be attained later, in the matured stage of social finance. This transition occurs as the management of social funds becomes more professional,

transparent, and effectively targeted. For instance, improvements may include leveraging technology for efficient distribution, better data analytics for identifying eligible recipients, and shifting from consumptive aid to sustainable empowerment programs. This evolution ensures benefits are distributed more broadly, causing inequality to gradually decrease. This relationship is tested with the following hypothesis, which looks for the curve's turning point.

H_4: The square of Islamic Social Finance has a negative and significant effect on inequality.

Human development (HD) reflects the quality of life in society. Communities with a low human development index often face greater inequality because unequal access to education and healthcare hinders inclusive economic growth (Kamalu & Ibrahim, 2023). Human development is a concept that emphasizes improving the quality of life through three main dimensions: education, health, and a decent standard of living. These three aspects play a direct or indirect role in reducing inequality. First, education enhances human capital, expands skills, and opens access to better employment opportunities. Second, good health enables individuals to participate productively in economic activities. If healthcare access is limited to certain groups, inequality will widen; conversely, inclusive healthcare access reduces the welfare gap. Third, improvements in the standard of living through the provision of basic infrastructure (housing, electricity, clean water, and public services) help create more equitable opportunities for all segments of society. This concept is in line with research conducted by Asimakopoulos & Asimakopoulos(2025) and Maurya & Kanaujiya (2021). This leads to the formulation of the following research hypothesis.

H_5: Human Development (HD) has a negative and significant effect on inequality.

Population dynamics are a critical factor influencing regional inequality. Regions with large or rapidly growing populations, but without equitable access to foundational services like education, healthcare, and employment, tend to experience higher levels of inequality (Bathelt et al., 2024; Cörvers & Mayhew, 2021). This disparity arises because limited public resources are stretched thin and often cannot be distributed fairly. A lack of quality education can perpetuate intergenerational poverty, while inadequate healthcare access reduces workforce productivity and imposes high costs on low-income households, widening the gap between the affluent and the less fortunate. Furthermore, this problem is compounded when population growth outpaces the development of essential infrastructure and public services. This mismatch can overwhelm a region's

carrying capacity, leading to congested cities and strained utilities, which further exacerbate social and economic stratification (Kamalu & Ibrahim, 2023). Given these combined pressures, a larger population is expected to be associated with greater income disparity. The hypothesis is therefore constructed as follows.

H_6: Population (Pop) has a negative and significant effect on inequality.

Environments with high levels of religiosity often foster strong social norms and values. These norms encourage solidarity, mutual support, and a shared concern for the well-being of others. This value system can significantly affect economic inequality. It influences everything from consumption patterns to how resources are distributed in society (Amri & Adi, 2021). Religious principles frequently foster pro-social behaviors like increased charitable giving, creating informal community-based safety nets that support vulnerable individuals. The mosque, in particular, often serves as a central hub for these activities. More than just a place of worship, it acts as a space for community participation where individuals can access support systems that help them avoid poverty (He, 2023). Mosques facilitate the collection and distribution of zakat and sadaqah, offer educational programs, and build social networks that can lead to economic opportunities. Through these combined social and economic functions, a stronger religious presence is theorized to foster a more equitable environment. The research hypothesis is stated as below.

H_7: Religious (Mos) has a negative and significant effect on inequality.

Methods

This research analyzes panel data from 25 Indonesian provinces spanning the 2019-2022 period. The selection of these provinces was based on the activity level of the Amil Zakat Institute (LAZ) and the National Zakat Agency (BAZNAS). Secondary data for this research were sourced from the Indonesian Central Statistics Agency, BAZNAS Indonesia, the Ministry of Religion of the Republic of Indonesia, and the Financial Services Authority. This research aims to test the Kuznets curve hypothesis on the relationship between the development of Islamic finance in the social sector and the banking sector, with inequality. The research conducted by Kamalu & Ibrahim (2023) explained that there is a Kuznets curve hypothesis on the relationship between the development of Islamic finance in the banking sector and inequality. The development of Islamic finance is not only in the banking sector but also in the social sector through zakat, fitrah, and infaq/alms (Lestari & Auwalin, 2022). Thus, the model specifications in this research are

adopted from research conducted by Kamalu & Ibrahim (2023) and Lestari & Auwalin (2022), the following.

$$Gini_{it} = a_1 + a_2 ISF_{it} + a_3 ISF_{it}^2 + a_4 VC_{it} + e_{it} \quad (1)$$

$$Gini_{it} = a_1 + a_2 ISSF_{it} + a_3 ISSF_{it}^2 + a_4 VC_{it} + e_{it} \quad (2)$$

Equation (1) explains that the development of Islamic finance (ISF) can influence inequality (Gini). Equation (2) explains that the development of Islamic Finance in the Social Sector (ISSF) can influence inequality (Gini). On the other hand, the variables ISF^2 and $ISSF^2$ are used to test the Kuznets curve hypothesis. Kamalu & Ibrahim (2023) explain that the inverted U curve in the Kuznets curve occurs when $\alpha 2>0$ and $\alpha 3<0$. The control variables used are the human development index and population size, as in the model Kamalu & Ibrahim (2023). The level of religiousness is also a control variable in this research because the environment can influence behavior, which will later influence inequality (Amri & Adi, 2021).

This research employs static panel data regression as its primary analytical method. There are three approaches under consideration: Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). To choose the appropriate model, the Chow, Hausman, and Lagrange multiplier tests are utilized. The Chow test determines the appropriate model between fixed effect and common effect. The Hausman test determines the optimal model between fixed effect and random effect. The Lagrange multiplier test determines the optimal model between random effect and common effect. The static panel method was used in this study due to the data spanning from 2019 to 2022 across 25 provinces, which provided a short time-series dimension for a dynamic panel model. Hence, the static panel method is more suitable for estimating the relationships between the variables. In addition, this study aims to assess the non-linear Kuznets curve hypothesis as it applies to Islamic finance and income inequality, without focusing on estimating the relationships in the longer term, which is more characteristic of studies that utilize dynamic models. The variables and their operational definitions are presented in Table 1, which details the measurement and data sources for each construct used in the analysis.

Table 1. Variable Definitions

Variable	Calculation	Source
Inequality (Gini)	Gini Index	BPS
Islamic Finance (ISF)	Total of financing and assets	Financial Service Authority (OJK)
Islamic Social Finance (ISSF)	Total zakat, fitrah, infaq/alms	National Amil Zakat Agency (BAZNAS)
Human Development (HD)	Human Development Index	BPS-Statistics Indonesia
Population (Pop)	Total population	BPS-Statistics Indonesia
Religious (Mos)	Number of prayer rooms and mosques	Ministry of Religion

Results and Discussion

The best model is chosen by the pre-estimation test that was conducted. The best model will then be chosen, and its relationship to inequality and the development of Islamic finance will be tested using the Kuznets curve hypothesis. Comparing probability values with significance values (α=5%) can be used to test the optimal model. The results of the model selection tests are summarized in Table 2.

Table 2. Best Model Test

Testing	Probability	Best Model
Model 1		
Chow	0,000	FEM
Hausman	0.001	FEM
Model 2		
Chow	0,000	FEM
Hausman	1,000	REM
Lagrange Multipliers	0,000	REM

The initial test done determined the most suitable model. The most appropriate model will be used to analyze its relationship to inequality and the evolution of Islamic finance using the Kuznets curve hypothesis. Assessing the model's adequacy

can be done through the comparison of likelihood values and significance levels (α=5%). The Fixed Effect Model is appropriate for Model 1. This is evidenced by the Chow test's probability of 0.000, which is below the significance threshold (α=5%). In addition, the probability of 0.001 is below the significance level (α=5%) which indicates the fixed effect model is preferred, according to the Hausman test. Model 2 indicates the fixed effect model is the most suitable choice, as evidenced by the Chow test probability of 0.000, which is below the significance level (α=5%). The Hausman test, based on a probability of 1,000, indicates the random effect model is optimal. In addition, the Lagrange multiplier test produces the same result, with a probability of 0.000, which is below the significance threshold (α=5%). The Kuznets curve hypothesis is applied to the relationship between inequality and the growth of Islamic finance. The values of α3(-0.000)<0 and α2(0.045)>0 are displayed in the first model. In the second model, the outcomes remain unchanged for values of 2(0.103)>0 and α3(-0.001)<0. The expansion of Islamic finance will have an effect on rising inequality, as the Kuznets curve hypothesis suggests. Over time, inequality can be decreased through the fair development of Islamic finance. The estimation results from both models are presented in Table 3.

Table 3. Results of Panel Data Analysis

Variables	**Model 1** **FEM**	**Model 2** **REM**
ISSF	-	0.045* [2,590] (0.011)
ISSF2	-	-0.000* [-2,715] (0,008)
ISF	0,103* [2,026] (0,045)	-
ISF2	-0,001** [1,973] (0,051)	-
HD	-0,329* [-8,612] (0,000)	0,094 [0,569] (0,570)
Pop	-0,031	0,014*

Variables	Model 1	Model 2
	FEM	REM
	[-1,193]	[1,566]
	(0,236)	(0,036)
Mos	-0,001*	-0.000
	[-3,938]	[-0.136]
	(0,000)	(0.892)
R-Square	0.977	0.064
Adj. R-Square	0.968	0.018
F-Stat.	106.2474	13,997
Prob. (F. Stat.)	0,000*	0,000*

* Significant α=5%, ** Significant α=10%
[...] = t-statistic, (...) = probability

In the first model, population is found to be insignificant in explaining inequality, with a probability value of 0.236> α (5%). In contrast, human development and the number of mosques have a significant negative effect on inequality. The probability value for human development is 0.00< α (5%), with a coefficient of -0.329, indicating that a 1% increase in human development reduces inequality by 32.9%. Furthermore, the probability value for the number of mosques is 0.00<α(5%), with a coefficient of -0.001, showing that a 1% increase in the number of mosques decreases inequality by 0.01%. In the second model, population size influences inequality but not the number of mosques and the human development index. The coefficient value of 0.014 and probability of 0.036 <α(5%) shows that population has a significant positive relationship with inequality. An increasing population will increase inequality.

The growth of Islamic finance is widely considered a mechanism for reducing inequality, a finding supported by numerous studies (Agustina et al., 2023; Kamalu & Ibrahim, 2023; Mohamad et al., 2020; Putriani & Prastowo, 2019). Agustina et al. (2023) explain that Islamic finance in banking can influence inequality. Kamal et al. (2021) and Widodo (2019) resulted in findings that financial development had an impact on inequality, but zakat, fitrah, infaq/alms had a significant negative impact on inequality. Banking provides easy access to financial services with little risk because it is interest-free, does not require collateral, which is good for business development, small and medium enterprises. Kamalu & Ibrahim (2021) explained that the use of Islamic financial instruments that are in accordance with Sharia, such

as profit sharing (Mudharabah), partnerships (Musharakah), and rent (Ijarah) to develop one's business can be beneficial. Thus, increasing access to financing will increase economic activity, job security, income, and reduce inequality (Azwar et al., 2022). On the other hand, developing the financial system in the social sector can reduce inequality (Lestari & Auwalin, 2022). Islamic financial instruments through mandatory alms (zakat) and voluntary alms (sadaqat) become income redistribution, which will have an impact on inequality (Kamalu & Ibrahim, 2023; Widodo, 2019).

Research conducted by Fadila (2019) explains that the distribution of zakaat reduces income inequality in Indonesia. Afandi et al. (2021) explain that zakat, fitrah, and infaq/alms can be an instrument in resolving inequality. Based on the research finding that Islamic finance plays a significant role in reducing inequality, several strategic policy actions are recommended to optimize its development. Thus, strategic steps are needed to encourage the optimization of Islamic financial development. In the banking sector, the government needs to increase financial inclusion, develop innovative products, and support regulatory policies. In the social sector, the government needs to optimize Zakat, Infaq, Sedeqah (ZIS) through increasing awareness and education, professional management, and targeted distribution. The government also needs to optimize productive waqf through education and good waqf management. In this study, the human development index in model 1 is significantly negative for inequality. This shows that a high human development index can reduce inequality (Asimakopoulos & Asimakopoulos, 2025; Maurya & Kanaujiya, 2021). The Human Development (HD) can show the quality of human resources available in an area and will help in regional development. A high level of education reflects society's high ability to meet educational needs. Someone who has a higher education has better quality than someone who has a lower education, so that the higher the quality of human resources, the work productivity will also increase, and in the end, they will get a job with a high income or produce high output. Therefore, the better the quality of human resources will encourage human welfare and have the opportunity to not fall into poverty. Different results regarding the relationship between the human development index and inequality are not significant in model 2. This explains that model 2 still does not explain in detail the determinants of inequality.

The varying significance of the control variables across the two models stems from the distinct characteristics of each Islamic financial instrument analyzed. In Model 1, Islamic Finance (ISF), which represents total financing and assets, tends to

be associated with formal economic activities whose benefits are not evenly distributed. Therefore, for ISF to effectively contribute to reducing inequality, strong support is required from human capital quality (HD) as well as from social institutions such as mosques (Mos), which function as centers of social distribution and community empowerment. This explains why HD and Mos emerge as significant in the ISF-based model. In contrast, Model 2 captures Islamic Social Finance (ISSF), such as zakat and waqf, which are inherently redistributive in nature, thereby exerting a more direct impact on reducing inequality without heavy reliance on human capital quality or the presence of mosques. In this context, the more decisive factor is population size (Pop), since a larger population implies a wider coverage of ISSF beneficiaries. Thus, the differences in the significance of control variables between the two models reflect the distinct mechanisms of ISF, which is productivity-based, versus ISSF, which is distribution-based.

The earlier conclusions are corroborated by the data, which confirms the existence of an important inverse relationship between the number of mosques and the level of inequality. This finding implies that the more mosques there are in a community, the less inequality there is in that community. This is most likely because mosques become important community centers that provide access to important social, educational, and economic resources, and in some cases, address inequality. They promote charitable giving, offer educational and supportive networks, and provide social and professional contacts, which are important to inequality in a community. To promote the impact, positively sustained relationships and strong coordination are necessary between mosques, local governments, and nonprofit organizations to maximize the positive impact and ensure that support is directed to the most deprived. On a different, more theoretical note, Model 2 shows that the number of mosques has no impact on inequality. It does not contradict the initial finding. Rather, it shows the model has certain weaknesses. It suggests that Model 2 is likely underspecified and does not adequately capture the complex and multifaceted determinants that drive inequality, thereby failing to explain the phenomenon in sufficient detail. The proposed optimization strategies for Islamic finance to strengthen its role in reducing inequality are presented in Table 4.

Table 4. Islamic Finance Optimization Strategy

No	Banking Sector	Social Sector
1	**Financial inclusion** - Broaden the public's access to sharia-compliant financial services and products, including as insurance, savings accounts, and microlending. - Develop financial products that suit the needs of poor and low-income communities.	**Optimization of Zakat, Infaq and Alms** a. Increased Awareness and Education: - Campaign and educate the public about the importance of zakat, infaq and alms through media, sermons and seminars. - Explain the social and economic benefits of ZIS and its impact in reducing inequality. b. Professional Management: - Establishing a professional zakat amil institution with transparent and accountable governance. - Using technology to facilitate payment and distribution of ZIS, and ensure that the funds reach those entitled to them. c. Targeted Distribution: - Implement an accurate mustahik (zakat recipient) data collection system to ensure zakat distribution is right on target. - Develop programs that suit the needs of mustahik, such as education, health and economic empowerment programs.
2	**Innovative Product Development** - Developing innovative and competitive sharia financial products in financing for small and medium enterprises (SMEs). - Ensure that these products comply with sharia principles and are easily accessible to all levels of society.	**Development of Productive Waqf** a. Increased Awareness and Education - Increase public understanding of the concept of productive waqf and its potential for economic empowerment. - Holding campaigns and seminars to encourage people to participate in waqf. b. Management and Investment: - Manage waqf assets professionally to generate sustainable income. - Investing waqf funds in productive projects such as building hospitals, schools, or profitable businesses.

No	Banking Sector	Social Sector
		c. Collaboration with the Private Sector: - Collaborate with the private sector to develop productive waqf projects. - Utilize private sector expertise and resources in the management and development of waqf assets.
3	**Supportive regulations and policies** - Encourage the government to create regulations and policies that support the development of the sharia financial industry. - Providing incentives for sharia financial institutions that contribute to the economic empowerment of poor communities.	

A notable contrast emerges when examining the effect of population size on inequality across the two models. Model 1 yields significant results while Model 2 yields non-significant results. The link between inequality and population size in Model 1 is negligible. There is a strong positive correlation between inequality and population size, in contrast to model 2. Increased unemployment and rising levels of income disparity result from a region's population growing faster than its human resource development. This leads to intense rivalry for jobs in the area (Ullah et al., 2021). Conversely, this relationship is not statistically significant in Model 2. This divergence suggests that the mechanism by which population affects inequality differs depending on the context. While population pressure on the job market is a key driver of inequality in a market-based model (Model 1), its role is less direct in a redistributive social finance model (Model 2), where it may simply represent a larger base of potential beneficiaries rather than a primary cause of disparity.

Conclusion

This study shows that both the financial and social aspects of Islamic finance, ISF and ISSF, have a non-linear relationship with income inequality in Indonesia. They operate through different mechanisms. Productivity-based ISF works in a more indirect way. It requires a mix of high-quality human capital and supportive social institutions, like mosques. On the other hand, the ISSF's distribution-based impact is more direct. Its scale mainly depends on the population size, which also determines

the number of beneficiaries. These different outcomes call for varied policies. For ISF, we need policies that enhance financial ISF and expand the ISF network. Meanwhile, effective management of zakat, infaq, and waqf is crucial for maximizing ISSF's potential. Ultimately, to develop a strong Islamic financial system that helps Indonesia achieve economic growth, improve social equity, and reduce inequality, we need better regulatory support from the government.

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