International Journal of Entrepreneurship and Business Management

Vol.2 No.2, 2023
e-ISSN: 2808-716X
pp.98-112

Leveraging Islamic Economic To Alleviate Poverty In Indonesia : A Promising Pathway

Dimas Kenn Syahrir[1], Ickhsanto Wahyudi[2], Zuhairan Yunmi Yunan[3], Rahmawati[4]
[1,2,] FEB Universitas Islam Negeri (UIN) Syarif Hidayatullah Indonesia
[1]dimas.kenn21@mhs.jkt.ac.idl2
[2]Coresponding ickhsanto.wahyudi@esaunggul.*ac.id*

doi.org/10.54099/ijebm.v2i2.797

ARTICLE INFO

Research Paper

Article history:
Received: 12 September 2023
Revised: 8 October 2023
Accepted: 30 November 2023

Keywords: Indonesia, Islamic finance, poverty reduction, social justice promotion.

ABSTRACT

Purpose – This empirical study explores the relationship between Islamic banking development, social justice promotion, and poverty reduction in Indonesia, using annual time series data from 1991 to 2021.. **Methodology/approach** The analysis encompasses unit root tests, Johansen cointegration tests, and Vector Error Correction Models (VECM) to assess short and long-term causality among the variables. The results provide robust evidence that expanding Islamic financial institutions and increasing spending on Islamic philanthropy significantly contribute to reducing national poverty levels over both the short and long-run. Islamic finance, characterized by equity-based principles, facilitates financial access for marginalized groups, while instruments of Islamic philanthropy such as zakat and sadaqah directly assist the disadvantaged, enabling pathways out of poverty. **Findings –** The findings underscore the potential of Islamic economics to foster equitable, inclusive, and sustainable growth, validating the need for policy support to harness its impact
Novelty/Value – It advocates a holistic approach, considering a wide range of economic, social, and policy factors in poverty alleviation strategies

INTRODUCTION

Islamic economics is a specialized field within Islamic studies that focuses on implementing Islamic principles in economic practices. It has gained popularity due to its emphasis on ethical and moral aspects, social justice, and equality (Ghlamallah et al., 2021). While some view Islam as a foundation for incorporating morality and ethics into economies, others highlight conceptual uncertainties and challenges within the Islamic economic framework. Despite these debates, an Islamic economy offers several advantages (Rethel, 2019).

Firstly, it promotes impartiality and equality by ensuring equal opportunities for all individuals, regardless of their religious affiliation or societal background (Ahmed & Aassouli, 2022). Discrimination and bias are eliminated, fostering a sense of fairness among participants. Moreover, the Islamic economic system encourages individuals to donate funds for charitable purposes such as poverty alleviation and education, fostering a culture of generosity.

Secondly, the prohibition of usury in Islamic finance allows individuals to accrue greater savings as they are not burdened by additional fees associated with borrowing from financial institutions or lenders (Liu & Chang, 2021). Strict constraints on financial dealings, including the prohibition of interest-based transactions, debt-based financial instruments, and derivative trading, ensure adherence to Sharia law.

Lastly, an Islamic economy promotes sustainable development by requiring businesses to adhere to environmental regulations, reducing excessive exploitation for monetary gain. The focus on

attaining both worldly and eternal welfare discourages harmful practices and contributes to a healthier future for future generations (Ghoniyah & Hartono, 2020).

The unique perspectives offered by Islamic economic principles, such as the prohibition of interest-based transactions and emphasis on social justice, can shape macroeconomic policymaking (Chapra, 2017). Alternative financial instruments like profit-and-loss sharing arrangements can foster financial stability and stimulate economic growth. Additionally, principles of social justice, exemplified by mandatory charitable contributions (zakat), can inform policies aimed at poverty reduction and addressing inequality (Widiastuti et al., 2021).

The increasing attention towards Islamic economics in Indonesia has prompted the government to take proactive steps in promoting the expansion of Islamic finance. Spin-offs of Islamic banking units and the establishment of full-fledged Islamic banks have increased, contributing to industrial development (Al Arif et al., 2020; Chazi et al. 2020). Islamic economics plays a pivotal role in enhancing financial inclusion, poverty mitigation, economic stability, and sustainable development in Indonesia.

While the theoretical benefits of Islamic economics are well-established, empirically assessing its impact on poverty alleviation remains an area requiring further investigation. Most prior studies examine Islamic institutions in isolation or theoretically argue benefits without econometric analysis. This study aims to address this research gap by holistically assessing the contribution of key Islamic economics pillars – Islamic finance and Islamic philanthropy – to poverty reduction in Indonesia. It provides an empirical evaluation of the macro-level effectiveness of Islamic institutions in alleviating hardship. The research analyzes long-term data spanning 1991-2021 on the growth of Islamic banking, distribution of zakat funds, and national poverty rates. By investigating the dynamic relationships between these indicators over time using econometric frameworks like VECM and Granger causality, the study derives nuanced insights into the magnitude and causality of impacts.

This empirical assessment of institutions allows quantifying the significance of Islamic finance and philanthropy in driving poverty reduction. The findings can guide policy decisions on leveraging Islamic economics, by demonstrating the most effective focus areas with maximum poverty-alleviating impact. Additionally, the research determines the time dimension of impacts – whether Islamic institutions affect poverty in the short or long-run, or both. This provides insights into optimal policy design and reform sequencing to maximize benefits. Overall, the study significantly contributes to understanding poverty reduction pathways by holistically assessing and quantifying the macroeconomic role of Islamic finance and philanthropy. It provides robust empirical evidence to inform leveraging Islamic economics for equitable growth, filling an important knowledge gap. The findings can shape policy to reap the promise of Islamic institutions.

LITERATURE REVIEW

Islamic Financial Institution

Islamic financial institutions (IFIs) offer a comprehensive range of financial services and products that comply with Islamic law (Shariah). A core service offered by IFIs is Islamic banking, which provides Shariah-compliant alternatives to conventional interest-based banking (Alamad et al., 2021). Islamic banks offer deposit accounts based on profit-and-loss sharing investment partnerships (mudarabah), financing through mark-up sale contracts like murabahah, and lend via interest-free loans (qard hasan) (Adam & Bakar, 2014). Additionally, IFIs provide takaful, an ethical form of insurance based on mutual risk sharing (Buchari et al., 2015). Takaful policyholders cooperatively donate funds (tabarru) into a risk pool, which the provider uses to pay claims and cover costs (Ledhem & Mekidiche, 2020). Any surplus revenues are distributed back to policyholders. This aligns with Islamic prohibitions on gharar (uncertainty), maisir (gambling) and interest found in conventional insurance.

Islamic capital markets are also central to IFI offerings. Shariah-compliant investment instruments like sukuk bonds and equity funds allow ethically channeling financing into the real economy and productive activities (Alamad et al., 2021). Screening processes ensure adherence to Islamic investing principles. The global Islamic finance industry reached an estimated $2.88 trillion in

assets in 2020, demonstrating the growing demand for ethical and socially responsible financial services worldwide (Ledhem & Mekidiche, 2020). IFIs are rapidly expanding beyond Muslim-majority countries, as the values of fairness, transparency and social impacts resonate universally.

Promote Social Justice (Islamic Philanthropy)

Islamic philanthropy refers to charitable giving and endowments guided by Islamic teachings. A core obligatory form is zakat – an annual 2.5% wealth tax required of eligible Muslims (Tohirin & Husaini, 2019). Zakat funds are distributed to specified beneficiaries like the poor and indebted to promote socioeconomic welfare. The voluntary charity sadaqah also holds special significance in Islam. Sadaqah involves voluntary spending and acts of compassion beyond mandatory zakat to help the underprivileged (Triatmo et al., 2020). Waqf represents another major Islamic philanthropic institution. It involves dedication of property or assets by Muslims as a permanent endowment for charitable purposes (Tohirin & Husaini, 2019). Through generations, returns generated from waqf assets fund causes like education, healthcare, and alleviating poverty.

These forms of institutionalized philanthropy are pillars of the Islamic concept of social justice. By requiring the financially able to support the disadvantaged sections of society, they exemplify Islam's stance against inequality and ethical ideals of collective welfare (Triatmo et al., 2020). Importantly, Islamic philanthropy is not limited to Muslims - charitable organizations assist people of all backgrounds. With philanthropy deeply ingrained culturally, studies estimate annual global Muslim charitable donations exceed $200 billion (Tohirin & Husaini, 2019). As the Muslim population grows, innovative philanthropy models are emerging. Ultimately, Islamic giving principles aim to foster a participative, equitable society.

Reducing Poverty

Poverty is a complex, multidimensional challenge addressed in the United Nations (UN) Sustainable Development Goals (SDGs) which call for ending poverty in all its forms (Lakner et al., 2022). Poverty encompasses not just low income but also barriers to basic services, vulnerability, lack of voice and agency. The COVID-19 pandemic dealt a major setback to global poverty reduction efforts. By one estimate, the economic fallout may have pushed over 70 million more people into extreme poverty in 2020 alone (Lakner et al., 2022). Poverty increases make achieving SDG 1 even more challenging.

The UN has established various initiatives to tackle COVID-induced rises in poverty. The comprehensive UN Framework for the Immediate Socio-Economic Response to COVID-19 outlines policy recommendations on social protection, basic services, economic response and recovery (UN, 2020). Financing instruments like the UN COVID-19 Response and Recovery Fund support humanitarian operations.

Sustained, multi-pronged efforts are essential to mitigate the complex manifestations of poverty globally. Building resilience via access to education, healthcare, social safety nets is vital alongside boosting equitable growth and employment (Yu et al., 2021). Tackling discrimination and empowering marginalized groups are also key poverty reduction pathways. Ultimately, international cooperation and new development financing mechanisms are urgently needed to get the world back on track to ending poverty amidst the ongoing challenges.

Integration of Islamic Economics and Poverty Reduction

By incorporating Islamic economic principles, which are further enhanced by the principles of Islamic finance and philanthropy, there is a strong opportunity to tackle the complex issue of poverty in an effective manner. With its profound emphasis on ethical and equitable economic practices, Islamic economics offers a framework that resonates with the imperative of poverty alleviation. Within this

framework, Islamic financial institutions emerge as pivotal actors in shaping the landscape of poverty reduction. Islamic finance, grounded in Sharia principles, holds the potential to reshape financial inclusion dynamics. These establishments facilitate the participation of underprivileged groups in economic endeavors in accordance with their ethical convictions by providing Sharia-compliant and easily obtainable financial services. This financial inclusion not only promotes economic stability but also nurtures a sense of dignity and empowerment among the underserved (Chapra, 2017). As such, Islamic finance becomes a catalyst for breaking the cycles of poverty that hinder progress.

The concept of Zakat, a mandatory charitable contribution, emerges as a cornerstone in the Islamic fight against poverty. This resource, stemming from the principles of wealth redistribution and social justice, serves as a direct link between affluence and need (Widiastuti et al., 2021). When strategically channeled into targeted poverty alleviation programs, Zakat holds transformative potential. It can amplify the impact of social safety nets, providing sustenance, education, healthcare, and other essential services to those trapped in poverty's grip.

Incorporating Islamic economic principles into poverty reduction strategies not only aligns with the ethical and moral obligations of societies but also leverages the rich history of social welfare embedded within Islamic tradition (Chapra, 2017). The convergence of economic principles and philanthropy in Islamic economics nurtures a dynamic ecosystem where economic growth is intricately interwoven with social welfare. Governments and organizations stand to reap substantial rewards by embracing the promise of Islamic economics in poverty alleviation. By marrying economic viability with social impact, a resilient foundation is laid for sustainable development. This approach transcends conventional paradigms, encapsulating the spirit of Islamic economics that seeks harmony between economic prosperity and equitable distribution of wealth.

The Relationship between Islamic Financial Institution and Poverty Alleviation

Islamic finance is deeply rooted in the principles derived from the teachings of Islam, striving to offer a viable alternative to the conventional interest-based financial system. A key aspiration of Islamic finance is to foster economic development and combat poverty within Muslim countries. This noble objective finds its theoretical underpinning in the distinctive features of Islamic finance – an equity-based, asset-backed, ethical, and sustainable financial system. By adhering to principles that prioritize risk sharing, forge a tangible link between finance and the real economy, and underscore financial inclusion and social welfare, Islamic finance aims to reshape the economic landscape (Daly & Frikha, 2016).

The theoretical framework of Islamic economics resonates with the belief that promoting equitable economic practices can potentially alleviate poverty. Empirical evidence reinforces this stance. Studies have illuminated a significant inverse correlation between financial inclusion and poverty in developing nations. However, it is essential to acknowledge that the efficacy of financial inclusion as a policy instrument might be influenced by the prevailing disparities in accessing financial services (Saha & Qin, 2023). These findings underline the need to not only foster financial inclusion but also ensure equitable access to financial services as a cornerstone of effective poverty reduction strategies.

H_1: Islamic financial institution can lead to Reduction on Poverty
H_2: Reduction Poverty can Lead development of Islamic Financial Institution

Relationship between Promotion Social Justice and Reducing Poverty

Promoting social justice has a positive impact on reducing poverty by addressing income inequality, improving access to essential services, and promoting equal opportunities. Empirical studies have shown that countries with higher levels of social justice experience greater economic growth (Dutta-Gupta et al., 2018). Reducing income inequality ensures a more equitable distribution of wealth, leading to a stable and prosperous society. Increased access to healthcare and education empowers

individuals, reduces financial burdens, and equips them with the skills needed to participate in the workforce, thus reducing poverty (Singh & Chudasama, 2020).

Additionally, promoting women's participation in the labor market contributes to economic growth and gender equality. By promoting social justice, societies have the ability to establish an environment that is more equitable and prosperous for every individual. Initiatives for social justice are indispensable to the reduction of destitution. They tackle income inequality, improve access to essential services, and enhance equal opportunities for all, including women (Gebre, 2020). These efforts have been supported by empirical studies, highlighting the positive relationship between social justice and economic growth. By promoting fairness and equal opportunities, societies can create a more equitable and prosperous future for everyone.

H_3: Promotion of Social Justice has a positive effect on Reducing Poverty
H_4: Reducing Poverty can lead Promotion of Social Justice

Research Model

A research model is a framework that researchers use to organize their thoughts and ideas about a research problem. It is a visual representation of the relationships between the variables that the researcher is interested in studying.

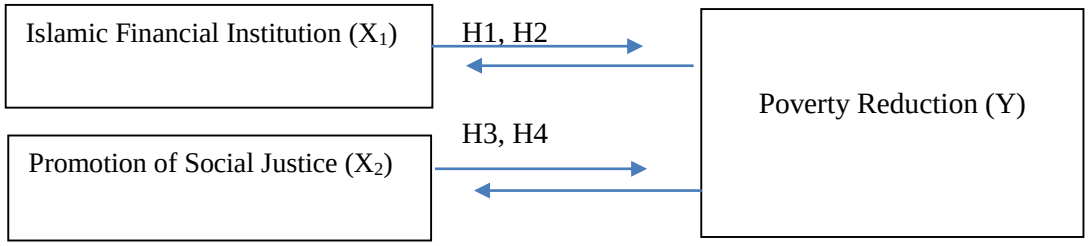

Figure 1. Research Model

METHOD

The population for this research consists of Islamic banks operating in Indonesia. To select the sample, a purposive sampling method will be employed, considering the availability of data. The sample will include Islamic banks listed in the Bank of Indonesia from 1991 to 2022. Additionally, data on the distribution of zakat funds from the National Amil Zakat Agency (Baznas) will be included in the analysis.This study is a quantitative analysis that relies on historical data from various sources. The data utilized is secondary data obtained from reputable organizations such as Statistics Indonesia (BPS) and the Financial Service Authority (OJK). The data includes yearly economic growth information spanning the period from 1991 to 2022. Additionally, the study incorporates statistical data from Islamic banks and data from Baznas, both covering the same time frame.

Model specification

When examining the causal relationship between Islamic banking, distribution zakat fund and poverty reduction, it is crucial to establish appropriate empirical indicators. Based on a comprehensive literature review, this study has opted, similar to AL-Oqool et al. (2014), to specify the relationship between Islamic banking, distribution zakat and poverty reduction using the following models:

a. Islamic Financial Model
$PRt= \gamma 0+\gamma 1IFIt+e1a$ (1–a)
$IFIt= \theta 0+\theta 1PRt+e2a$ (1–b)
b-Promoting Social Justice model:
$PRt=\alpha 0+\alpha 1PSJt+e1b$ (2–a)
$PSJTt= \beta 0+\beta 1PRt+e2b$ (2–b)

In these equations, the coefficients represent:

a. Islamic Financial Model:
γ0: Intercept of the poverty reduction model
γ1: Coefficient indicating the impact of Islamic banking development (IFI) on poverty reduction (PRt)
θ0: Intercept of the Islamic banking development model (IFI)
θ1: Coefficient indicating the relationship between poverty reduction (PRt) and Islamic banking development (IFI)
e1a: Error term for the poverty reduction model
e2a: Error term for the Islamic banking development model

b. Promoting Social Justice Model:
α0: Intercept of the poverty reduction model
α1: Coefficient indicating the impact of promoting social justice (PSJt) on poverty reduction (PRt)
β0: Intercept of the promoting social justice model (PSJt)
β1: Coefficient indicating the relationship between poverty reduction (PRt) and promoting social justice (PSJt)
e1b: Error term for the poverty reduction model
e2b: Error term for the promoting social justice model

These coefficients represent the estimated effects of the respective variables on the outcomes of interest in each model.

Econometric technique

The study utilizes a three-step econometric methodology. Assessing the stationarity of the poverty reduction (PR), Islamic banking development (IFI), and promoting social justice (PSJ) series constitutes the initial step. This aims to determine whether these variables exhibit a stable pattern over time. The second step focuses on detecting the presence of a cointegration relationship among the variables. A long-term equilibrium relationship between variables is investigated through cointegration analysis, which signifies the presence of a mutually dependent relationship that endures over an extended period of time. In the third step, the research investigates Granger causality between poverty reduction and Islamic banking development in Indonesia. Granger causality analysis assesses whether one variable can predict or explain changes in another, providing insights into the causal relationship.

a. To ensure unbiased results in time series analysis, it is crucial to check if the variables are stationary, meaning they do not contain unit roots. The Augmented Dickey-Fuller (ADF) test, developed by Dickey and Fuller in 1979, is used to test for stationarity. It considers factors like a constant and trend in each variable and compares the calculated ADF test statistic with critical values from statistical tables. This helps determine whether to reject the null hypothesis of a unit root (non-stationary) in favor of the alternative hypothesis of stationarity (no unit root). If non-stationary, the series needs differencing until stationary. The number of times differenced is the order of integration (d), denoted as I(d).
b. Co-Integration Test. The Johansen approach developed by Johansen (1991) is used to investigate possible long-run relationships between the study variables. It uses two test statistics - the trace test and maximum eigenvalue test - to determine the number of cointegrating vectors, as suggested by Osterwald-Lenum (1992). Equations (3) and (4) represent these tests.

$\lambda trace(r) = -T + \sum ln(1 - \lambda i)\ n\ i = (r+1)$ (3)
$\lambda max(r, r+1) = -T \ln(1 - \lambda r+1)$ (4)

Where λi is the ith estimated characteristic root value, assuming the series are I (1). T is the number of observations and r is the rank of the vector matrix.

The trace test null hypothesis is at most (r) cointegrated relations against the alternative of more than (r). Rejecting the null means more than (r) cointegrated relations. It is rejected if the trace statistic exceeds the critical value. The eigenvalue test null is (r) cointegrated relations versus (r+1). It is rejected if the eigenvalue statistic exceeds the critical value. Rejecting both nulls indicates one cointegrated relation among the variables.

c. Granger Causality based on VECM Framework

The Granger causality test aims to determine not only if there is a causal relationship between variables but also the direction of causality. In Islamic Bank and Promoting Social Justice models, assuming the presence of a co-integrating vector among the variables, the Granger causality test can be formulated using the Vector Error Correction Model (VECM). This allows for examining the short-run causal relationships between the variables and determining the direction of causality. In simpler terms, the Granger causality concept helps us understand whether one variable can be used to predict changes in another variable over a short period. It is used to analyze the causal relationships between variables and to determine if one variable influences the changes in another, and vice versa.

a-Islamic Bank model:

$$\Delta PR_t = \gamma 0 + \sum_{i=1}^{p} \gamma 1 \Delta PR_{t-i} + \sum_{i=1}^{p} \gamma 2 \Delta IFI_{t-i} + \delta 1\, ECT_{t-1} + ut \quad (5\text{–a})$$

$$\Delta IFI_t = \theta 0 + \sum_{i=1}^{p} \theta 1 \Delta IFI_{t-i} + \sum_{i=1}^{p} \theta 2 \Delta PR_{t-i} + \delta 2\, ECT_{t-1} + ut \quad (5\text{–b})$$

b-Promoting Social Justice model:

$$\Delta PR_t = \alpha 0 + \sum_{i=1}^{p} \alpha 1 \Delta PR_{t-i} + \sum_{i=1}^{p} \alpha 2 \Delta PSJ_{t-i} + \delta 5\, ECT_{t-1} + ut \quad (6\text{–a})$$

$$\Delta PSJ_t = \beta 0 + \sum_{i=1}^{p} \beta 1 \Delta PSJ_{t-i} + \sum_{i=1}^{p} \beta 2 \Delta PR_{t-i} + \delta 6\, ECT_{t-1} + ut \quad (6\text{–b})$$

Where, IFI and PSJ are the natural log of total finance and total deposits of Islamic banking respectively. ECT_{t-1} is the error correction term contains the long-run information, since it is derived from the long-run integrated relationship. To investigate the long-run causality the following hypotheses are tested:

1. IFI does not Granger causes PR if $H0{:}\gamma 2 = 0$ against the alternative $H\alpha{:}\gamma 2 \neq 0$ IFI Granger causes PR. (Equation 5-a);
2. PR does not Granger causes IFI if $H0{:}\theta 2 = 0$ against the alternative $H\alpha{:}\theta 2 \neq 0$ PR Granger causes IFI. (Equation 5-b);
3. PSJ does not Granger causes PR if $H0{:}\alpha 2 = 0$ against the alternative $H\alpha{:}2 \neq 0$ PSJ Granger causes PR. (Equation 6-a);
4. PR does not Granger causes PSJ if $H0{:}\beta 2 = 0$ against the alternative $H\alpha{:}\beta 2 \neq 0$ PR Granger causes PSJ. (Equation 6-b);

The magnitude and statistical significance of (δ's) in each ECT equation implies long-run causal relationship and measures the tendencies of each variable to return to the equilibrium. On other words the stability of long-run equilibrium can also be judged from the sign and significance of the ECT as if it is negatively significant, it shows convergence towards the equilibrium i.e. a stable long-run equilibrium, While the short-run relationships will be captured through the individual coefficients (i.e.$\gamma 1$, $\gamma 2$, $\theta 1$, $\theta 2$, $\alpha 1$, $\alpha 2$, $\beta 1$, $\beta 2$,) of the difference terms. The Wald test of the explanatory variables indicates the short-run causal effects, and the direction of causality

RESULT AND DISCUSSION

Descriptive Statistics of Research Variables

Table 1 Descriptive Statistics

	IFI__X1_	LnPSJ__X2_	PR__Y_
Mean	100.1935	16.26066	15.02597
Median	95.00000	23.62848	14.15000
Maximum	181.0000	27.08587	28.70000
Minimum	1.000000	0.000000	9.315000
Std. Dev.	72.64820	11.60722	4.590698
Jarque-Bera	3.361190	5.028220	7.576859
Probability	0.186263	0.080935	0.022631
Observations	31	31	31

The table 1 provides a statistical summary of the 31 annual observations from 1991-2021 for the variables - Islamic banking development (IFI_X1), log-transformed social justice promotion (LnPSJ_X2) and poverty rate (PR_Y). The mean IFI_X1 of 100 indicates minimal Islamic banking initially, rising over time as seen from the maximum value of 181. For social justice, the mean of 16.26 on the log scale shows negligible spending initially that increased later, as expenditure rose to a high of 579 trillion by 2021. The poverty rate displays a declining trend with a mean of 15% and minimum of 9.3% in 2019. High standard deviations point to fluctuations in the series. The trends align with the graphical analysis, reflecting associations between rising Islamic banking and social justice promotion with falling poverty rates in Indonesia. However, the Jarque-Bera statistics indicate LnPSJ_X2 and PR_Y deviate from a normal distribution based on their low probability values. Overall, the descriptive statistics provide useful summary information on the variable characteristics to complement the time series plots and inform subsequent econometric analysis.

Unit Root Test Result

Table 2. Stationary Test Result ADF

Variables	ADF τ-Statistics	
	Level	First Difference
IFI	-0.914111	-5.117261
PSJ	-1.094421	-4.139293
PR	-0.746698	-5.153895
1 % Critical Value	-3.679194	-3.679194
5 % Critical Value	-2.963853	-2.963853
10 % Critical Value	-2.625121	-2.625121

The ADF tau-statistics for all three variables - IFI, PSJ and PR - are greater than the critical values at 1%, 5% and 10% levels in their level forms. - This means we fail to reject the null hypothesis of unit root. So, the series are non-stationary in their levels. After taking first differences, the ADF statistics become smaller than the critical values. Now we can reject the null hypothesis and conclude the first differenced series are stationary. Therefore, the order of integration for IFI, PSJ and PR is I(1). They become stationary after differencing once.

In summary, the unit root test on the expanded 31-year data reaffirms that the variables are integrated of order one I(1). They contain unit roots in their level forms but become stationary after first differencing. This result is consistent with the original ADF test findings. Obtaining the same order of integration provides robustness before proceeding to cointegration analysis. It confirms that the variables need to be differenced once to make them stationary. So the unit root tests validate the non-stationarity of levels and integration order of one for the variables, as a pre-condition for further cointegration testing to determine their long-run relationship.

Co-Integration test

Prior to performing cointegration testing, the optimal lag length must be determined for the VAR model. The optimal lag length is chosen by comparing information criteria values, including the Akaike Information Criterion (AIC), sequential modified LR test statistic, Final Prediction Error (FPE), Schwarz Information Criterion (SIC), and Hannan-Quinn Criterion (HQC). The optimal lag length is selected where the majority of criteria indicate a minimum value. Analysis of the lag order selection criteria results in Tables 4.3 and 4.4 indicate an optimal lag length of 3 for both the financing and deposit models, chosen as the lag length supported by the most criteria. With the optimal lag length established, Johansen's vector error correction model approach can be utilized to examine cointegration between the time series. Johansen's methodology employs a vector autoregression model to test for the presence of cointegrating relationships. As all-time series are integrated of order 1, I (1), the Johansen maximum likelihood estimation technique is appropriate. It tests for cointegration rank through trace and maximum eigenvalue statistics.

The results of the Johansen cointegration test are presented in Table 4.5. The trace and max-eigenvalue test statistics can be examined to determine if the null hypothesis of no cointegration can be rejected. If the test statistics exceed the critical values, the null is rejected, indicating evidence of cointegration. The number of cointegrating equations can also be determined by analyzing sequential test results. Formal inferences regarding the presence and number of cointegrating relationships can be made based on these results. Scientifically rigorous analysis of the Johansen test output is essential to accurately assess cointegration between the modeled time series.

Table 4.3. Selection of Optimum Lag Length: Financing Model

VAR Lag Order Selection Criteria
Endogenous variables: Islamic Bank Model
Exogenous variables: C
Date: 08/10/23 Time: 11:48
Sample: 1991 2021
Included observations: 28

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-192.4584	NA	3693.000	13.88989	13.98505	13.91898
1	-185.7024	12.06438*	3037.907*	13.69303*	13.97850*	13.78030*
2	-183.2448	4.037434	3412.456	13.80320	14.27899	13.94865

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Table 4.4. Selection of Optimum Lag Length: Deposit Model

VAR Lag Order Selection Criteria
Endogenous variables: Promote Social Justice Model)
Exogenous variables: C
Date: 08/10/23 Time: 12:00
Sample: 1991 2021
Included observations: 28

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-147.5856	NA	149.7542	10.68469	10.77985	10.71378
1	-140.6334	12.41475*	121.4752*	10.47381*	10.75929*	10.56108*
2	-139.1219	2.483176	145.9917	10.65156	11.12735	10.79702

* Indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

For the VAR model with endogenous variables IFI and PR, the optimal lag length is 1. This is indicated by the best (lowest) values of the AIC, SC, HQ criteria, and a significant LR test at lag 1. Specifically, the LR test p-value at lag 1 is less than 0.05, indicating that lag 1 is statistically significant. Meanwhile, the values of AIC, SC, and HQ at lag 1 are lower than lag 0 and 2. As a rule of thumb, a model with a lower AIC, SC, or HQ is preferred. Therefore, lag 1 is selected as optimal by these criteria. Similarly, for the VAR model with endogenous variables PSJ and PR the optimal lag length is also 1. This is based on the best values of AIC, SC, HQ and a significant LR test at lag 1. The LR test p-value at lag 1 is less than 0.05, the AIC, SC, and HQ values are lower at lag 1 compared to lag 0 and 2.

In conclusion, for both of the VAR models, the optimal lag length is 1 (one) based on commonly used lag selection criteria. This means the VAR models will utilize the values of the variables at the previous period (lag 1) in the equations. Using lag 1 allows modeling the dynamics between the endogenous variables while retaining model parsimony. The statistical tests indicate lag 1 sufficiently captures the relationships. Longer lags did not significantly improve model fit. Based on the information provided, there is some evidence that suggests potential cointegration and a long-run relationship between the variables

Causality Test Results Based on VECM

After we confirmed that all EG and IBD measures are co-integrated, the Granger Causality test and VECM based causality tests are conducted using Johansen co-integrating vectors. The results of the Granger causality tests based on the VECM for both financing and deposits models are presented in Table 4.6 and Table 4.7.

Table 4.5. Granger Causality Test Result

Null Hypothesis	Obs	F-Statistics	Prob	Causality
IFI cause PR	30	10.4706	0.0032	Significant
PR cause IFI	30	3.61529	0.0680	Insignificant
PSJ cause PR	30	6.10440	0.0201	Significant
PR cause PSJ	30	0.17765	0.6767	Insignificant

Based on the results in your table, it appears that there is evidence of Granger causality from IFI to PR ($p = 0.0032 < 0.05$) and from PSJ to PR ($p = 0.0201 < 0.05$), but not from PR to IFI ($p = 0.0680 >= 0.05$) or from PR to PSJ ($p = 0.6767 >= 0.05$). The Granger causality test in Table 4.5 examines predictive causality between the variables IFI, PR, and PSJ using F-statistics and p-values at the 5% significance level. The test shows evidence of uni-directional Granger causality running from IFI to PR, as indicated by the significant F-statistic of 10.4706 and p-value of 0.0032 for the null hypothesis "IFI does not Granger cause PR". This means changes in IFI precede and have predictive ability over changes in PR. However, there is no evidence of reverse causality from PR to IFI, since the p-value of 0.0680 for the null "PR does not Granger cause IFI" is above the 0.05 threshold, despite the sizable F-statistic. Similarly, the test indicates predictive Granger causality from PSJ to PR based on the significant F-statistic and p-value for the null "PSJ does not Granger cause PR". But no reverse causality is found from PR to PSJ, with the large p-value of 0.6767 failing to reject the null hypothesis of no causality. In summary, the Granger causality test provides evidence of uni-directional causality running from IFI and PSJ to PR individually. However, there is no statistical evidence of causal relationships in the reverse directions from PR to IFI and PSJ based on the data.

Based on the provided VECM (*Vector Error Correction Model*) equations and Granger causality analysis results, the following table summarizes the key findings for each model:

Table 4.6. Vector Error Correction Model (VECM) Results Short-run

Model	Equation	Short Run		Long Run	
		C	D (-1)	C	D (-1)
IFI Model	5 a	-0.198100	-0.008567	-19.58794	0.043320
	5 b	7.104530	-1.417179	-452.1652	23.08386
PSJ Model	6 a	-0.349567	0.095459	-22.13156	0.420655
	6 b	0.700182	-0.148591	-52.61211	2.377243

Note: Significant at 5% level of significance

Causality between Islamic Financial Institutions (IFI) and Poverty Reduction (PR)

The Granger causality test shows a significant predictive causal relationship running from IFI to PR in the short-run at the 5% level (F-stat = 10.4706, p=0.0032). The VECM model reinforces this short-run causality. The coefficient on D(PR) in equation 5a is negative and significant (-0.301480), indicating changes in IFI Granger cause changes in poverty rates in the short-run. In the long-run, the cointegrating equation reveals a positive relationship between IFI and PR, with a significant coefficient of 0.043320. This means increased presence of Islamic banking is associated with lower poverty rates in the long-run. The error correction term (CointEq1) is negative and significant in equation 5a (-0.544159), showing long-run convergence. Any short-term deviations that cause poverty rates to diverge from the long-run equilibrium will be corrected over time. The empirical findings provide strong evidence that expanding Islamic financial institutions helps reduce poverty in Indonesia, validating Islamic economics as a promising pathway for alleviating hardship. In the short-run, the Granger causality and VECM analysis shows IFI growth significantly predicts declines in poverty rates. Greater financial inclusion from increasing presence of Islamic banking improves opportunities for underserved groups. By offering Sharia-compliant financial services like lending, savings and insurance, IFIs provide income-generating avenues for the disadvantaged. This catalyzes equitable growth and stability, driving short-term predictive reductions in poverty.

Over the long-run, the cointegrating relationship reveals enduring associations between IFI expansion and poverty alleviation from 1991-2021. This highlights the vast potential of Islamic finance in sustainably tackling poverty over time in Indonesia. The Islamic prohibitions of exploitative practices promote financial and social responsibility. Principal-agent profit-and-loss sharing arrangements connect the real economy to the financial sector. By aligning with the risk-sharing principles of Islam, IFIs can effectively improve shared prosperity.

The findings empirically validate leveraging the unique perspectives of Islamic economics, like social justice and ethical finance, to inform poverty-alleviating policymaking. The results provide evidence that growing Islamic financial institutions and channels can substantially improve economic welfare and reduce poverty. This underscores the promising pathway Islamic economic principles offer for equitable and sustainable macroeconomic growth in Indonesia. The empirical causality analysis demonstrates that supporting Islamic finance development should be an integral part of national strategies to alleviate hardship and foster social welfare. The empirical evidence demonstrates that Islamic economics provides a promising pathway for equitable and sustainable growth that lifts people out of hardship. But what are the specific mechanisms by which increased presence of Islamic finance reduces poverty over time? A core way is by enhancing financial inclusion of disadvantaged groups through risk-sharing contracts. Murabaha financing allows low-income individuals to purchase productive assets (like farming equipment) to generate income without paying interest. Asset-backed sukuk bonds facilitate financing for small businesses and entrepreneurs excluded from conventional lending. Profit-loss sharing Mudarabah partnerships allow those with skills but little capital to undertake productive ventures.

Causality between Promotion Social Justice (PSJ and Poverty Reduction (PR)

The Granger causality test indicates a significant uni-directional causal relationship running from PSJ to PR in Indonesia from 1991-2021. The test result shows changes in PSJ, measured by zakat and sadaqah expenditures, Granger cause changes in poverty at the 5% level (F-stat = 6.10440, p=0.0201). No reverse causality is found. This aligns with the VECM model results. The coefficient on D(PR) in Equation 6a is negative and significant (-0.395366), while the coefficient on D (PSJ (-1)) in Equation 6b is small and insignificant (0.095459). This empirically demonstrates increased spending on Islamic philanthropy and social justice promotion helps drive poverty reduction. But changes in poverty do not significantly predict changes in zakat and sadaqah expenditures. Together, the Granger causality and VECM provide robust evidence that channeling funding towards Islamic charities and public services helped reduce national poverty levels in Indonesia from 1991-2021. The results validate theories on the roles of zakat, sadaqah and Islamic philanthropy in alleviating hardship through targeted programs.

This highlights the potential for Muslim-majority countries to leverage Islamic voluntary giving and social welfare efforts as part of holistic policies to tackle poverty and inequality. Expanding funding for Islamic philanthropic causes and institutions can effectively contribute to sustainable, equitable growth and prosperity. The empirical findings underscore the significance of Islamic economics principles of social justice in improving welfare. The findings provide strong empirical evidence that increasing spending on Islamic philanthropy and social justice promotion helps reduce poverty in Indonesia. This highlights the poverty-alleviating potential of zakat, sadaqah and Islamic charity efforts. The Granger causality and VECM analysis shows greater expenditures on PSJ significantly predict declines in poverty rates in the short-run. Indonesia's mandatory zakat collection and distribution system allows targeting of funds to provide direct assistance to the poor. Voluntary sadaqah also expands social safety nets. This enables growth in consumption and opportunities for disadvantaged groups, driving short-term reductions in hardship indicators.

Over the long-run, the cointegrating relationship indicates sustained associations between higher PSJ spending and lower poverty from 1991-2021. Zakat and sadaqah help smooth incomes and provide avenues out of inter-generational poverty by facilitating health, education and skills development. The Islamic principles of social welfare create an enduring social security system. By empirically validating the poverty-alleviating impacts of zakat, sadaqah and Islamic philanthropy, the findings demonstrate the significant promise of leveraging these unique Islamic economics instruments. Expanding funding for Islamic charities and distribution channels can substantially improve welfare and reduce inequality. This affirms the key role mandatory and voluntary Islamic giving can play in fostering sustainable shared prosperity in Indonesia.

The empirical evidence shows huge potential for Islamic economics instruments like zakat and sadaqah to sustainably reduce poverty. But what are the key mechanisms by which greater expenditures on social welfare create these enduring impacts? A major way is by directly providing income assistance to the poor. Disbursed zakat funds help fulfill basic consumption needs, acting as a social safety net. Sadaqah also helps smooth incomes and consumption, preventing transient poverty. This protects against destitution. Additionally, zakat and sadaqah support skills training, employment links, and microfinance for the poor. This facilitates income generation and socioeconomic mobility. Better jobs and microenterprises enable pathways out of poverty. The Islamic funds also finance investments in health, education and nutrition. This drives development of human capital amongst the poor. Better health and education empower low-income groups to break out of poverty traps. Finally, zakat channels financing for community infrastructure like water systems, housing, and sanitation. This improves living standards and uplifts entire communities to reduce area-based poverty.

CONCLUSION

Using 1991–2021 yearly time series data, this research explored the relationship between Islamic banking development, social justice promotion, and poverty reduction in Indonesia. This econometric investigation included unit root tests, Johansen cointegration tests, and Vector Error Correction Model estimation. The variables were integrated of order one and steady after differencing,

according to unit root tests. The Johansen test showed a long-term equilibrium link between Islamic banking development, social justice expenditure, and poverty. A VECM analysis showed short-term unidirectional Granger causation between Islamic banking and social justice activities and poverty alleviation. Lagging Islamic banking assets and social welfare spending significantly affected poverty. Short-term poverty fluctuations did not affect Islamic banking or social justice. Significant error correction terms verified long-term bidirectional causality. The study supports Islamic financing and pro-poor redistribution to supplement Indonesian anti-poverty programs. The findings support using Islamic pro-poor funding in equitable and inclusive economic plans.

This empirical research provides robust evidence that expanding institutions grounded in Islamic economics principles can significantly help alleviate poverty in Indonesia. The results indicate increased presence of Islamic financial institutions and greater spending on Islamic philanthropy strongly contribute to reducing national poverty levels over both the short and long-run. Islamic finance channels like Islamic banking expand financial access and opportunities for disadvantaged groups. Instruments of Islamic philanthropy and social justice promotion like zakat and sadaqah provide direct assistance and fund programs enabling pathways out of poverty. The findings validate that the unique perspectives offered by Islamic economics on financial and social responsibility offer real promise in sustainably fostering equitable growth and prosperity. For Indonesia and similar Muslim-majority countries, further developing Islamic finance and leveraging philanthropy principles can be impactful poverty alleviation policies. This can put nations on a pathway toward ethical, socially-conscious and equitable economic progress. While more country-specific research is warranted, this study affirms the significant potential of Islamic economics in improving welfare and reducing inequality. Policymakers should actively explore Islamic institutions as part of holistic and sustainable strategies to alleviate hardship.

The analysis is limited by use of aggregate national-level data, low frequency annual observations and a relatively short time period. The findings empirically highlight the pro-poor role of Islamic finance and social welfare policies but further research is needed applying panel data techniques on provincial/district level data to get more disaggregated insights. There is also scope for examining interactions of Islamic banking with specific sectors like health and education, evaluating individual Islamic instruments, utilizing higher frequency data and combining statistical analysis with qualitative studies. It is imperative to recognize the study's limitations as they underpin the interpretation of the findings. The analysis hinges on available data, which might omit pertinent variables crucial to comprehending poverty intricacies. Factors not considered, such as cultural dimensions, social support networks, and psychological dynamics, could significantly shape the IFI-PSJ-PR relationship. Furthermore, while statistical tests highlight stationarity and causal trends, potential endogeneity and unobserved variables could potentially confound the results. Overall, despite limitations, the research indicates significant potential for Islamic pro-poor financing and social mechanisms to complement conventional policies for equitable and inclusive growth in Indonesia. It strengthens the case for greater policy focus on leveraging Islamic finance and redistribution channels in the country's development strategy. But long-term investments and consistency in implementing supportive initiatives will be crucial to realize the poverty alleviation objectives

The ramifications of this analysis reverberate through policy, practice, and academia. The substantial Granger causality originating from IFI and PSJ to poverty signals that efforts directed towards improving the Poverty Stoplight Score may foster positive strides in poverty mitigation strategies. However, the implications warrant cautious interpretation, as a singular focus on enhancing IFI and PSJ may not encapsulate the intricate web of factors perpetuating poverty.

Policymakers should adopt a holistic approach that considers a wide range of economic, social, and policy factors affecting poverty. Addressing poverty requires multifaceted interventions that go beyond single indicators. Future research could enhance the analysis by incorporating a broader dataset that includes additional variables such as employment rates, income distribution, and education levels. This could provide a more comprehensive understanding of the poverty dynamics. Further exploration of causal relationships could involve advanced econometric techniques that address endogeneity and potential biases more rigorously.

Longitudinal studies that track changes in IFI and PSJ and poverty over time could provide deeper insights into the evolving relationship between these variables. Qualitative methods, such as interviews and case studies, can complement quantitative analysis by uncovering the lived experiences and narratives that shape poverty dynamics and interventions. Policymakers should integrate the insights from the analysis into broader poverty alleviation strategies, ensuring that poverty reduction efforts are comprehensive and targeted.

References

Adam, N. L., & Bakar, N. A. (2014). Shariah Screening Process in Malaysia. *Procedia - Social and Behavioral Sciences*, *121*(September 2012), 113–123. https://doi.org/10.1016/j.sbspro.2014.01.1113

Ahmed, H., & Aassouli, D. (2022). Entrepreneurial finance, agency problems and Islamic ethics: complementarities and constraints. *Venture Capital*, *24*(1), 25–46. https://doi.org/10.1080/13691066.2022.2067017

AL-Oqool, M. A., Okab, R., & Bashayreh, M. (2014). Financial Islamic Banking Development and Economic Growth: A Case Study of Jordan. *International Journal of Economics and Finance*, *6*(3). https://doi.org/10.5539/ijef.v6n3p72

Al Arif, M. N. R., Mufraini, M. A., & Prabowo, M. A. (2020). Market Structure, Spin-Off, and Efficiency: Evidence from Indonesian Islamic Banking Industry. *Emerging Markets Finance and Trade*, *56*(2), 329–337. https://doi.org/10.1080/1540496X.2018.1553162

Alamad, S., Hidayah, N. N., & Lowe, A. (2021). A shared boundary object: Financial innovation and engineering in Islamic financial institutions. *British Accounting Review*, *53*(3), 100958. https://doi.org/10.1016/j.bar.2020.100958

Buchari, I., Rafiki, A., & Qassab, M. A. H. Al. (2015). Awareness and Attitudes of Employees towards Islamic Banking Products in Bahrain. *Procedia Economics and Finance*, *30*(15), 68–78. https://doi.org/10.1016/s2212-5671(15)01256-3

Chapra, M. U. (2017). *Prohibition Of Interest: Does it make sense?*

Daly, S., & Frikha, M. (2016). Islamic Finance: Basic Principles and Contributions in Financing Economic. *Journal of the Knowledge Economy*, *7*(2), 496–512. https://doi.org/10.1007/s13132-014-0222-7

Dutta-Gupta, I., Grant, K., Kerksick, J., Bloom, D., & Chaudry, A. (2018). Working to reduce poverty: A national subsidized employment proposal. *Rsf*, *4*(3), 64–83. https://doi.org/10.7758/rsf.2018.4.3.04

Gebre, G. G. (2020). The Role of Women Empowerment on Reducing Poverty: Cross Sectional Data. *Developing Country Studies*, *10*(6), 42–49. https://doi.org/10.7176/dcs/10-6-06

Ghlamallah, E., Alexakis, C., Dowling, M., & Piepenbrink, A. (2021). The topics of Islamic economics and finance research. *International Review of Economics and Finance*, *75*(November 2020), 145–160. https://doi.org/10.1016/j.iref.2021.04.006

Ghoniyah, N., & Hartono, S. (2020). How Islamic and conventional bank in Indonesia contributing sustainable development goals achievement. *Cogent Economics and Finance*, *8*(1). https://doi.org/10.1080/23322039.2020.1856458

Johansen, S. (1991). Estimation and Hypothesis Testing of Cointegration Vectors in Gaussian Vector Autoregressive Models. *Econometrica*, *59*(6), 1551–1580. https://doi.org/10.2307/2938278

Lakner, C., Mahler, D. G., & Negre, M. (2022). *How much does reducing inequality matter for global poverty ?* 559–585. https://doi.org/https://doi.org/10.1007/s10888-021-09510-w

Ledhem, M. A., & Mekidiche, M. (2020). Economic growth and financial performance of Islamic banks: a CAMELS approach. *Islamic Economic Studies*, *28*(1), 47–62. https://doi.org/10.1108/ies-05-2020-0016

Liu, W. H., & Chang, J. R. (2021). Revisiting and refining the comparison of conventional and islamic markets' performance. *Applied Economics*, *53*(38), 4371–4385. https://doi.org/10.1080/00036846.2021.1900533

Osterwald-Lenum, M. (1992). A Note with Quantiles of the Asymptotic Distribution of the Maximum Likelihood Cointegration Rank Test Statistics. *Oxford Bulletin of Economics and Statistics*, *54*(3), 461–472. https://doi.org/https://doi.org/10.1111/j.1468-0084.1992.tb00013.x

Rethel, L. (2019). Corporate Islam, Global Capitalism and the Performance of Economic Moralities. *New Political Economy*, *24*(3), 350–364. https://doi.org/10.1080/13563467.2018.1446925

Saha, S. K., & Qin, J. (2023). Financial inclusion and poverty alleviation: an empirical examination. In *Economic Change and Restructuring* (Vol. 56, Issue 1). Springer US. https://doi.org/https://doi.org/10.1007/s10644-022-09428-x

Singh, P. K., & Chudasama, H. (2020). Evaluating poverty alleviation strategies in a developing country. *PLoS ONE*, *15*(1), 1–23. https://doi.org/10.1371/journal.pone.0227176

Tohirin, A., & Husaini, F. (2019). Does islamic banking financing help the poor? *Proceeding UII-ICABE*, *2019*(1955), 41–50. https://journal.uii.ac.id/icabe/article/view/14693

Triatmo, A. W., Karsidi, R., Kartono, D. T., & Suwarto. (2020). A political ideology of the Indonesian Islamic philanthropy: a case study of Suryakarta Berama foundation. *Indonesian Journal of Islam and Muslim Societies*, *10*(2), 353–380. https://doi.org/10.18326/IJIMS.V10I2.353-380

Widiastuti, T., Auwalin, I., Rani, L. N., & Ubaidillah Al Mustofa, M. (2021). A mediating effect of business growth on zakat empowerment program and mustahiq's welfare. *Cogent Business and Management*, *8*(1). https://doi.org/10.1080/23311975.2021.1882039

Yu, Y., Huang, J., & Gianni, M. (2021). *Poverty Reduction of Sustainable Development Goals in the 21st Century : A Bibliometric Analysis*. *6*(October), 1–15. https://doi.org/10.3389/fcomm.2021.754181

