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Human Development and Income Inequality in D-8 Countries: A Maqashid Sharia Perspective

Shofiatul Hilwa[1], Risna Triandhari[2*], Raden Parianom[3]

[1,2]Faculty of Economics and Business, Universitas Indonesia, Indonesia
[2]Center of Islamic Economics and Business, Universitas Indonesia, Indonesia
[3]Faculty of Economics and Business, Universitas Pembangunan Nasional Veteran Jakarta, Indonesia
E-mail: [1]shofiatulhilwa.work@gmail.com, [2]risnatriandhari@ui.ac.id, [3]radenparianom@upnvj.ac.id

[*]**Corresponding author**

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ABSTRACT

Research Originality: This study is original in applying a Maqashid Sharia-based human development index to examine the short- and long-run effects of human development on income inequality in D-8 countries.

Research Objectives: This study aims to analyze whether human development based on the Maqashid Sharia framework can effectively reduce income inequality in D-8 countries in both the short run and the long run.

Research Methods: Using panel data from eight D-8 countries during 2003–2022, income inequality is measured by the Gini index and the Palma ratio, while human development is represented by the Maqashid Sharia Index (MSI). The analysis employs a Panel ARDL model with the Pooled Mean Group estimator to capture short-run and long-run relationships.

Empirical Results: The results show that Maqashid Sharia-based human development significantly reduces income inequality in the long run across D-8 countries, reflecting the maslahah-oriented approach of Islamic economic development. In the short run, it reduces inequality in Indonesia and Turkey but increases inequality in Bangladesh, Egypt, and Nigeria.

Implications: These findings suggest that human development policies should incorporate moral and value-based dimensions. Policymakers in D-8 countries need to promote not only education, health, and income, but also ethical values to ensure more equitable income distribution.

Keywords:
Islamic economics; maslahah-oriented development; panel ARDL; income distribution

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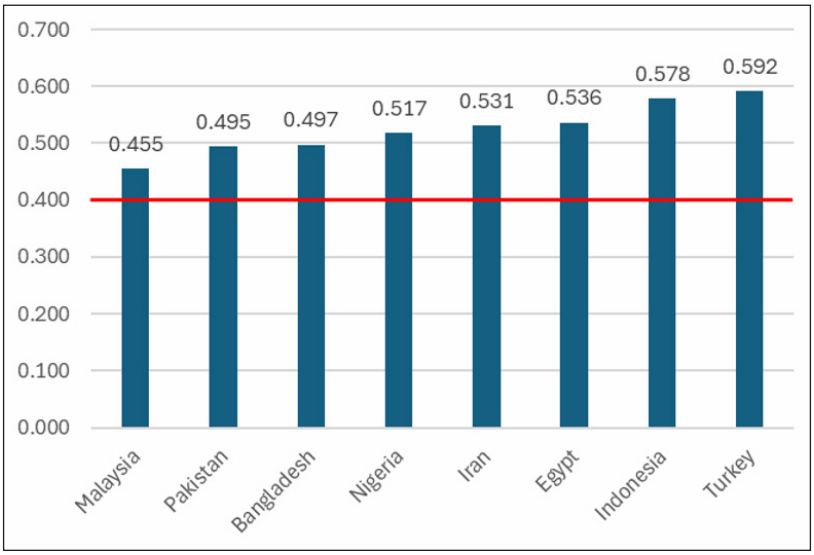
INTRODUCTION

Income inequality has long been recognized as a significant contributor to other forms of inequality and poverty (Vo et al., 2024; Kuznets, 1955). Income inequality refers to the gap between the richest and poorest members of society, where a wider gap indicates greater inequality (George et al., 2016). This issue is specifically addressed in Sustainable Development Goal 10.1, which aims to increase the incomes of the bottom 40 percent of the population so that they grow faster than the national average by 2030 (World Bank, 2016). Over the past decade, developing countries have experienced economic growth without corresponding improvements in income inequality (Kebalo & Zouri, 2024; Batuo et al., 2022; Bicaba et al., 2017).

Furthermore, one of the associations of countries with the largest Muslim population is the D-8. The D-8 (Developing Eight Countries) is an economic cooperation organization consisting of eight developing countries: Bangladesh, Egypt, Indonesia, Iran, Malaysia, Nigeria, Pakistan, and Turkey. It was officially formed in 1997. At the Fifth D-8 Summit in Bali in 2006, several main objectives of the organization were established. Member states are committed to reducing economic disparities and promoting development. Despite the noble vision and the predominance of a Muslim population, which ought to prioritize socio- economic justice and welfare, income disparity remains a significant concern in the D-8 countries. According to the World Inequality Database 2023, the wealthiest individuals in the D-8 countries have long controlled over 50% of the total income, and this proportion has not shown steady improvement over the past two decades. Only 10 out of 100 people in the D-8 countries account for approximately 50% of the national income.

Figure 1. Gini Coefficient of D-8 Countries in 2024



Moreover, income inequality in D-8 countries has reached a warning level. According to the UN classification, a Gini coefficient above 0.4 is considered a global warning

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threshold. Most D-8 countries fall within the range of 0.5 to 0.6, which indicates severe income inequality. Figure 1 presents the Gini coefficient across D-8 member countries in 2024. Turkey records the highest Gini index value at 0.59, followed by Indonesia at 0.58 and Egypt at 0.54. These underscore that income inequality in D-8 countries remains a critical development concern that requires urgent policy attention.

On the other hand, human development is a significant factor influencing reductions in income inequality across various studies (Vo et al., 2024; Kamalu & Ibrahim, 2023; Theyson & Heller, 2015). Additionally, human capital, a crucial component of human development, is also a determinant of income inequality (Furceri & Ostry, 2019; Moyo et al., 2022; Sehrawat & Singh, 2019). Moreover, the HDI is a commonly used indicator to assess human development in a country (Ngoc & Hai, 2022; Nogueira, 2021). This index has been developed by the United Nations Development Program (UNDP) since 1994 and consists of three core dimensions: healthy and long life, knowledge, and a decent standard of living. However, despite its widespread use as an indicator of human development, researchers have criticized the UNDP index for not fully capturing the quality of human development. Among these criticisms is that the HDI is considered value-neutral (Aydin, 2017). Additionally, the HDI does not account for moral factors and may exclude social indicators, such as cultural values. Therefore, this index is deemed inadequate from an Islamic economic perspective because it does not emphasize the moral and spiritual aspects of human beings (Aydin, 2017).

Some studies have attempted to refine and modify the HDI to obtain a concept and dimensions that fully describe human development (Salas-Bourgoin, 2014). One of these HDI modifications is the human development index from an Islamic perspective, formulated on the basis of the concept of maqashid sharia. Maqashid al-Sharia is the goal of advancing human well-being, achieved by safeguarding five aspects: religion (din), posterity (nasl), life (nafs), intellect ('aql), and wealth (maal). These five aspects have been used by various researchers (Widiastuti et al., 2022; Jatmiko & Azizon, 2021; Mili, 2014) as indicators of human development from an Islamic perspective. This concept of human development from the perspective of maqashid sharia has a broader scope than the conventional concept, as it integrates moral values (Chapra, 2008). From an Islamic perspective, human development involves not only material aspects such as economics, education, and health but also moral, social, and ethical dimensions (Aydin, 2017). Human resource development should not only focus on improving skills and technical aspects, but should also include spiritual and moral guidance, which is the foundation of human development (Mahri et al., 2021).

In addition, human development grounded in the objectives of Islamic law is considered capable of preventing inequality and poverty, as one of the orientations of Islamic economic development, namely *maslahah* (Mahri et al., 2021). The *maslahah* orientation is an advanced stage of human development. Human development will bring widespread benefits and prosperity for the entire community (*maslahah*), not just protect a few, and will not cause harm to other groups (Mahri et al., 2021). Additionally, one of the four main objectives based on the maqashid sharia is to ensure the long-term survival

of humanity (Mahri et al, 2021). From the perspective of Islamic economic development, the focus of development is not limited to meeting immediate or short-term needs, but also includes long-term needs (Mahri et al, 2021). Therefore, the tendency for income inequality to change will occur in the long run, leading this study to use both short- and long-term estimations.

Based on the discussion above, addressing income inequality in Muslim countries requires human development measures grounded in the Islamic perspective, which is the concept of maqashid sharia. As in Islam, the issues of inequality and injustice in society are of primary concern. Therefore, the question arises whether human development grounded in the objectives of Islamic law can truly help developing Islamic countries overcome income inequality in the short and long term.

This study is positioned at the intersection of development economics, income distribution, and Islamic economic thought by examining income inequality through a Maqashid Sharia-based human development framework. This study remains relevant as income inequality in D-8 countries has shown limited improvement over time, and the Gini coefficient exceeds the UN's warning level of 0.4. Previous studies have discussed the impact of human development on income inequality (Vo et al., 2024; Theyson & Heller, 2015; Kamalu & Ibrahim, 2023). But these studies largely rely on conventional human development measures that overlook moral, ethical, and value-based dimensions. They did not consider the Islamic perspective, which has broader dimensions. Previous studies examining human development from a maqashid sharia perspective have not addressed its impact on income inequality; they have focused only on its influence on poverty (Widiastuti et al., 2022), happiness and life satisfaction (Jatmiko & Azizon, 2021), and human well-being (Mili, 2014).

Unlike previous studies that focus on conventional human capital or HDI measures, this research employs the maqashid sharia-based development, thereby offering a more holistic and value-oriented explanation. Discussion of how it can affect income inequality remains limited. Thus, this study aims to fill these research gaps. This study contributes to the literature by extending the maqashid sharia-based human development framework to the analysis of income inequality in D-8 countries, an underexplored area. Using a dynamic panel approach, this research examines both the short-run and long-run effects of maqashid sharia-based human development on income inequality. Accordingly, the purpose of this study is to analyze the short-term and long-term impacts of maqashid sharia-based human development on income inequality across D-8 member countries.

METHODS

This study uses annual secondary panel data from eight D-8 countries covering the period 2003–2022, comprising 160 observations. However, because first-difference variables are included, the total number of observations is 152. The data period is limited to 2003– 2022 due to data availability constraints for several key variables used in this study. In particular, some components of the independent variables are not yet

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consistently available for all D-8 countries for 2023 and 2024 across the respective data sources. Therefore, the 2003–2022 period represents the most recent dataset, ensuring methodological robustness and comparability across countries.

This study employs quantitative data, with income inequality as the dependent variable and human development, measured by the Maqashid Sharia Index (MSI), as the main independent variable. MSI is constructed from five dimensions, each represented by a specific indicator (see Table 1). In addition, control variables included are GDP, inflation, and unemployment (Vo et al., 2024; Moyo, 2022; Sehrawat & Singh, 2019). The regression model follows previous studies examining the effect of human development on income inequality (Vo et al., 2024; Ngoc & Hai, 2022; Moyo et al., 2022; Sehrawat & Singh, 2019). The regression models are specified as follows:

$$Gini_{i,t} = \alpha_i + \beta_1 MSI_{i,t} + \beta_2 lnGDP_{i,t} + \beta_3 (lnGDP)^2{}_{i,t} + \beta_4 INF_{i,t} + \beta_5 UNEMP_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$PALMA_{i,t} = \alpha_i + \beta_1 MSI_{i,t} + \beta_2 lnGDP_{i,t} + \beta_3 (lnGDP)^2{}_{i,t} + \beta_4 INF_{i,t} + \beta_5 UNEMP_{i,t} + \varepsilon_{i,t} \quad (2)$$

Where:

$GINI_{it}$	: Gini index
$PALMAit$	: Palma ratio
$MSIit$:	: Maqashid Sharia Index,
$ln(GDP)_{it}$	: natural logarithm of GDP
INF_{it}	: inflation rate
$UNEMPit$	: unemployment rate
α_i	: intercept for each country.

The analysis method used in this study is the Panel Autoregressive Distributed Lag (ARDL) method. The Panel ARDL (Autoregressive Distributed Lag) model is an econometric approach used to analyze the short- and long-term relationships between variables in panel data, which is data that includes multiple individuals observed over a specific period. Since the analysis will be based on the Pooled Mean Group model, the regression model is transformed into an ARDL (p,q) model, which is specified as follows:

$$\Delta y_{i,t} = \theta\left(y_{i,t-1} + \beta x_{i,t}\right) + \sum_{j=1}^{p} \alpha_j \Delta y_{i,t-j} + \sum_{k=1}^{q} y_k \Delta x_{i,t-k} + \varepsilon_{i,t}$$

Where: Δy: dependent variable, θ: error correction term, β: vector of long-run coefficients, $x_{i,t}$: vector of independent variables, αj: short-run coefficient (to be estimated) of the lagged dependent variable, Y_k: short-run coefficient (to be estimated) of the lagged independent variable, $\varepsilon_{i,t}$: error term, j and k: optimal number of lags of the dependent and independent variable.

The MSI is constructed following the simple weighted approach of Widiastuti (2022) and Kasri and Ahmed (2015), assigning equal weights to all indicators for simplicity and interpretability. Indicators for each maqashid sharia dimension are normalized using the minimum–maximum method to obtain values between 0 and 1. The MSI is calculated

as the average of the five equally weighted dimensions—religion, life, intellect, posterity, and wealth. MSI values range from 0 to 1 and are classified into low (<0.550), medium (0.550–0.699), high (0.700–0.799), and very high (≥0.800) human development levels, following the UNDP classification.

The research framework of this study is described as follows. The study begins with the construction of the Maqashid Sharia Index, followed by descriptive analysis and a series of diagnostic tests, including cross-sectional dependence tests, slope homogeneity tests, and stationarity tests to determine whether variables are stationary. The analysis then proceeds with a cointegration test to identify long-run relationships, lag selection, the Hausman test, and, finally, panel ARDL estimation and discussion.

RESULTS AND DISCUSSION

The results indicate that maqashid sharia-based human development reduces income inequality across all D-8 countries in the long run, supporting Islamic development theory that emphasizes *maslahah*-oriented outcomes. In the short run, it reduces income inequality in Indonesia and Turkey, suggesting that development benefits in these countries are more evenly distributed across income groups. In contrast, human development increases income inequality in Bangladesh, Egypt, and Nigeria in the short run, as development gains tend to be concentrated among higher-income groups. No significant short-run effects are observed in Iran, Malaysia, and Pakistan. Furthermore, GDP exhibits a U-shaped relationship with income inequality, initially reducing inequality before increasing it, while inflation and unemployment are found to exacerbate income inequality in the long run.

To provide context for these findings, the following subsection presents the descriptive statistics, preliminary diagnostic tests, and discussion of estimation results. Table 1 shows the descriptive statistics of the indicators used to construct MSI. The control of corruption indicator averages −0.639 on the WGI scale, ranging from −2.5 to +2.5, indicating weak corruption control across D-8 countries with limited variation (SD = 0.464). Life expectancy averages about 69 years, which is below the global average and suggests relatively poor health outcomes with substantial variation (SD = 7.511). The mean years of schooling is around 7, indicating low educational attainment with modest variation (SD = 1.958). The fertility rate averages 2.961, exceeding the replacement level and indicating potential population growth (SD = 1.258), while GNI per capita averages USD 11,433.61 and reflects considerable income disparities across D-8 countries (SD = 7,564.22).

Using the Simple Weighted Index method, which assigns equal weight to each dimension of maqashid sharia (20%), MSI values for each D-8 country were obtained. Figure 1 shows the average MSI trend in D-8 countries from 2003-2022. Overall, MSI values increased over time in most D-8 countries, indicating improvements in maqashid sharia- based human development despite year-to-year fluctuations. Malaysia consistently recorded the highest MSI, approaching 0.8 in the final years, while Bangladesh, Pakistan, Nigeria, and Indonesia remained below the D-8 average. Turkey, Iran, and Egypt recorded

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higher and steadily rising MSI values. Although the average MSI across D-8 countries increased over the past two decades, progress remains uneven across member states.

Table 1. Descriptive Statistics of MSI Indicators

Dimensions	Indicators	Mean	Std. Dev.	Min	Max
Religion	Control of Corruption	-0.639	0.464	-1.597	0.397
Life	Life Expectancy	68.593	7.511	48.441	78.475
Intellect	Mean Years of Schooling	7.413	1.958	4.035	10.748
Posterity	Fertility rate	2.961	1.258	1.550	6.100
Wealth	GNP per capita	11433.610	7564.219	2551.600	32833.540

Figure 2. Trend of the D-8 Countries' Maqashid Sharia Index

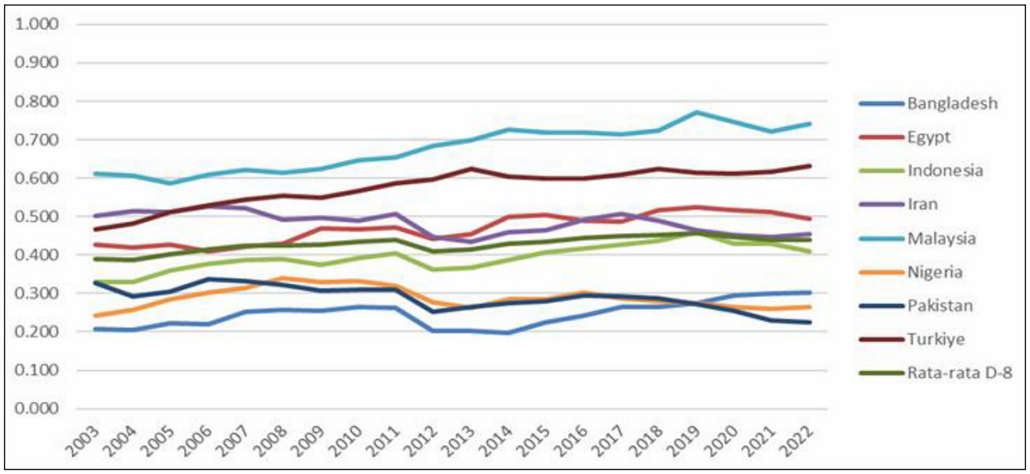

Table 2 summarizes the descriptive statistics for all variables used in the analysis. The average Gini index of 0.541 indicates that income inequality in these 8 countries is generally quite high. The average MSI of 0.452 shows that, overall, human development based on maqashid sharia is at a low level (i.e., less than 0.55), according to MSI categorization in the methods section.

Table 2. Summary Statistics

Variables	Mean	Std. Dev.	Min	Max
Gini	0.541	0.035	0.486	0.627
Palma	3.994	0.827	2.912	6.861
MSI	0.452	0.136	0.205	0.734
lnGDP	26.627	0.546	25.281	27.809
lnGDP_square	709.319	29.113	639.153	773.322
inf	10.871	11.269	-5.992	96.036
unemp	6.555	3.695	0.398	14.026

Table 3 shows the correlations among the independent variables in the model. Of all the available variables, the correlations between them are mostly weak to moderate, indicating that these factors are interconnected but not highly or perfectly correlated. Therefore, there is no multicollinearity problem in the data.

Table 3. Correlation Matrix

	MSI	lnGDP	inf	unemp
MSI	1.000			
lnGDP	0.385	1.00		
Inf	0.082	0.202	1.00	
Unemp	0.399	0.359	0.380	1.00

Table 4 shows the results of the cross-sectional dependence test. Since the p-value is greater than 0.05, the null hypothesis that the cross-sections are independent fails to be rejected. Thus, there is no cross-sectional dependence in this data. Table 5 shows the results of the slope homogeneity test. The null hypothesis of slope homogeneity is rejected by the Delta test at the 5 percent level and by the adjusted test at the 1 percent level, indicating heterogeneous slope coefficients across the model. Because there is heterogeneity, the Mean Group or Pooled Mean Group method is suitable.

Table 4. Results of Cross-Sectional Dependence Test

Test	Test statistic	P-value
Cross-sectional dependence	-0.953	0.341

Table 5. Results of Slope Homogeneity Test

Slope homogeneity	5.494***	0.000
Adj.	6.567***	0.000

Note: ***, **, and * are each significant at 0.01, 0.05, and 0.1, respectively.

Table 6. Results of the Unit Root Test

Variables	P-value from IPS test		P-value from the LLC test	
	At level	At first difference	At level	At first difference
Gini	0.034	0.000	0.003	0.000
Palma	0.032	0.000	0.005	0.000
MSI	0.056	0.000	0.000	0.000
lnGDP	0.971	0.000	0.171	0.000
lnGDP_square	0.984	0.000	0.290	0.000
Inf	0.597	0.000	0.892	0.000
Unemp	0.066	0.000	0.013	0.000

Note: ***, **, and * are each significant at 0.01, 0.05, and 0.1, respectively.

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Since there is no cross-sectional dependence in the data, first-generation unit root tests, namely Im-Pesaran-Shin (IPS) and Levin-Lin-Chu (LLC), were used to assess whether the model data are stationary. Testing was conducted to ensure that no variables exceeded the order of integration I(1) or first difference, as ARDL estimation is not valid if the variables have an integration order of I(2) or second difference (Mendy & Widodo, 2018). The results of the unit root test are presented in Table 6.

According to the IPS unit root test, the Gini index and Palma ratio variables are stationary at the level and do not contain a unit root. Therefore, both variables are stationary at I(0). By contrast, the MSI variable, the natural logarithm of GDP (lnGDP) and its square, the inflation and unemployment rates, are all non-stationary at the level or contain unit roots. However, after testing the first difference, all the mentioned variables became stationary at the 1% level. Therefore, these variables are stationary at I(1). The results of the LLC unit root test showed that the Gini index variable, the Palma ratio, and the MSI were stationary at the level, while the other variables were stationary at the first difference. Because the combination of variables is stationary at the level and in first differences, and none is second-differenced, the panel ARDL method is suitable.

Table 7 shows the results of the cointegration test using the Kao method. The null hypothesis is that there is no cointegration among all variables, while the alternative hypothesis is that there is cointegration. The p-value is less than the significance level of 0.05. Because the test results showed significant findings, the null hypothesis stating no cointegration was rejected, and the alternative hypothesis was accepted. The variables are cointegrated, indicating a stable long-term relationship among all variables in the model.

Table 7. Results of Cointegration Tests

	Cointegration Tests	Statistic	p-value
Kao	Modified Dickey-Fuller	-2.096**	0.018
	Dickey Fuller	-2.436***	0.007
	Augmented Dickey-Fuller	-2.282**	0.011
	Unadjusted Modified Dickey-Fuller	-2.776***	0.002
	Unadjusted Dickey-Fuller	-2.707***	0.003

Note: ***, **, and * are each significant at 0.01, 0.05, and 0.1, respectively

The next step is determining the optimal lag. The lag selection process uses the Bayesian Information Criterion (BIC) method, with a maximum lag of 1. Based on this method's results, the lag for all variables is 1. Thus, the model is ARDL (1, 1, 1, 1, 1, 1). Before moving to the regression stage, a Hausman test was conducted to determine which model was more efficient among the three types of panel ARDL models: between Mean Group (MG) and Pooled Mean Group (PMG), and between Dynamic Fixed Effects (DFE) and PMG. Based on the Hausman test results, the selected model was the PMG model. Table 8 presents the PMG estimation results.

Table 8. Results of Pooled Mean Group Estimation

	Model 1 (Gini Index)		Model 2 (Palma Ratio)	
	Long-run results	**Short-run results**	**Long-run results**	**Short-run results**
Error correction term		-0.326*** (0.127)		-0.345** (0.138
MSI	-0.643*** (0.199)	-0.095 (0.140)	-14.054*** (2.277)	-2.614 (3.857)
lnGDP	-3.688*** (0.888)	12.826 (8.858)	-85.844*** (21.116)	484.039 (428.142)
lnGDP_square	0.071*** (0.017)	-0.239 (0.165)	1.669*** (0.402)	-9.050 (7.997)
Inflation	0.0008*** (0.000)	-0.0003 (0.000)	0.021*** (0.005)	-0.006* (0.003)
Unemployment	0.0097*** (0.001)	-0.002* (0.001)	0.209*** (0.028)	-0.043 (0.030)
Constant		15.626*** (6.085)		382.887*** (152.709)
Observation	152	152	152	152

Note: Numbers in parentheses are standard errors.
***, **, and * are each significant at 0.01, 0.05, and 0.1, respectively.

In both models, ECT is negative and significant. The ECT shows that the model's variables have adjustment speeds of 32.6% and 34.5%. The ECT coefficient must be negative and significant to indicate that the system returns to long-term equilibrium after experiencing a shock or disturbance. The adjustment speed indicates that the system will return to its long-term equilibrium more quickly following short-term shocks, thereby facilitating faster convergence to the long-term equilibrium (Ramos-Herrera, 2025).

In both models, the short-term MSI coefficient is negative but not significant. This implies that, on average, the effects of maqashid sharia-based human development on income inequality have not immediately appeared in the short term. However, the long-term MSI coefficient is negative and significant at the 1% level in both models. Similar results were also found in model 2, with the Palma ratio as the dependent variable, where the long-term MSI coefficient is negative and significant at the 1% level, indicating robustness.

Two points are estimated to be the cause of these findings. First, the short-term coefficient here only describes the average results across the D-8 countries. Methodologically, these results may be insignificant because the influence in each country can move in different directions in the short term, as the PMG model assumes that short-term coefficients can differ across countries (Pesaran, 2004). For more details on short-term results by country, please refer to the next section. Second, strengthening human development in a country is a long-term investment process whose impact is not immediately visible in a short period (Deming, 2022). Investment in human development requires time to produce a significant impact on income distribution. These results are consistent with studies by Vo et al. (2024) and Moyo et al. (2022),

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which also did not provide significant evidence for human development variables in the short term. Based on the results of both models, the MSI variable is negative and significant in the long term. This result aligns with studies by Vo et al. (2024), Kamalu and Ibrahim (2023), and Ngoc and Hai (2022), which show that long-term human development can reduce income inequality. As human development based on the objectives of Islamic law increases, income distribution becomes more equitable. This finding confirms the validity of the maqashid sharia theory, which is oriented toward the public good.

This is because MSI emphasizes the holistic development of human potential, encompassing moral, educational, health, intergenerational sustainability, and material aspects. This means that the benefits of this increased development are felt by the general public in the D-8 countries, not just a select few. The increase in MSI reflects an improvement in people's quality of life through the fulfillment of these five aspects, which can benefit the entire community, ultimately reducing income inequality in the D-8 countries. The benefits of maqashid sharia-based human development are inclusive and prioritize collective interests and shared prosperity (*maslahatul ummah*). Additionally, these results show that human development, when implemented with maqashid sharia principles, is more effective at reducing income inequality in society than conventional measures. Compared with previous studies using conventional measures (Vo et al., 2024), MSI showed a greater influence on income inequality. This may be due to MSI's broader scope, which includes not only material aspects but also non-material ones, such as moral values and heritage.

This result is similar to the findings of Widiastuti et al. (2022), who found that the maqashid sharia-based human development index can significantly reduce poverty levels in Muslim countries. Similarly, Jatmiko and Azizon (2021) found that the MSI is better at reflecting the achievement of happiness and life satisfaction (as a measure of falah) than the HDI. This proves that using a holistic measure of human development, such as maqashid sharia, is important, especially for addressing poverty and income inequality in D-8 countries. On the other hand, the logarithm of GDP has a negative long-term coefficient and a positive squared term, and is significant in both models at the 1% level. This indicates a U- shaped effect. This result contradicts Kuznets' theory, which posits that the relationship between economic growth and income inequality is an inverted U-shaped curve. However, these results are consistent with the findings of Nam and Ryu (2025) and Vo et al. (2024), which show a U-shaped relationship between economic growth and income inequality.

Meanwhile, in both models, the inflation variable has a positive and significant long- term coefficient, indicating that inflation can worsen income inequality. This result is consistent with the study by Sehrawat and Singh (2019). Inflation reduces purchasing power, and its impact is felt more heavily by the middle and lower classes because they cannot adjust to rising prices, while the wealthy are less likely to be significantly affected, thereby widening the income gap. The long-term coefficient for the unemployment rate variable is positive and significant at the 1% level in both models. This shows that high

unemployment rates can lead to greater income inequality in the long run. This result is consistent with the research by Furceri and Ostry (2019).

The short-term results above are general regression results, with the coefficients for each country simply being averages. The PMG method assumes that the short-run coefficients differ across units of analysis (countries). Therefore, a more detailed explanation of MSI's short-term impact on income inequality in each country is presented in Table 9.

Table 9. Results of Short-Term Pooled Mean Group Estimation by Country

	Short-run results							
	Bangladesh	**Mesir**	**Indonesia**	**Iran**	**Malaysia**	**Nigeria**	**Pakistan**	**Turki**
ECT	-0.278***	-0.545***	-1.042***	-0.399***	-0.301***	-0.069***	-0.133***	0.158*
	(0.097)	(0.101)	(0.217)	(0.109)	(0.054)	(0.019)	(0.044)	(0.081)
MSI	0.163***	0.148*	-0.751***	0.256	0.036	0.042*	0.048	-0.702***
	(0.053)	(0.082)	(0.345)	(0.159)	(0.067)	(0.023)	(0.087)	(0.226)
lnGDP	-2.074	0.955	13.598	71.841***	12.542***	-0.914	12.783***	-6.118
	(2.755)	(5.429)	(20.334)	(20.250)	(3.059)	(0.995)	(4.548)	(3.740)
lnGDP_ square	0.040	-0.018	-0.247	-1.343***	-0.236***	0.017	-0.241***	0.109
	(0.053)	(0.103)	(0.369)	(0.379)	(0.058)	(0.019)	(0.086)	(0.069)
Inflation	-0.0001*	-0.0003***	-0.001	-0.00003	-0.001***	-0.0001**	-0.0004	0.0006***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Unemp	-0.003***	-0.003***	-0.009	0.001	-0.0007	0.0006	-0.0008	-0.004*
	(0,001)	(0.001)	(0.009)	(0.003)	(0.005)	(0.000)	(0.001)	(0.002)
Constant	13.311***	26.142***	49.837***	19.115***	14.463***	3.333***	6.363**	-7.554**
	(3.796)	(7.858)	(15.559)	(6.492)	(3.863)	(1.069)	(2.518)	(3.716)

Note: Numbers in parentheses are standard errors.
***, **, and * are each significant at 0.01, 0.05, and 0.1, respectively.

The ECT variable is negative and significant across all countries, indicating a stable long-term relationship between the variables. The largest ECT coefficient is in Indonesia (- 1.042), and the smallest is in Nigeria (-0.069). Indonesia has a faster rate of adjustment compared to other countries. This may be due to the rapid policy response from the Indonesian government to mitigate short-term inequality, for example, through the Direct Cash Assistance program, which directly increases the incomes of low-income communities (Yusuf, 2018), making them more resilient to economic shocks. Meanwhile, Nigeria experienced a slower pace of adjustment, possibly due to low economic stability (Raji, 2023), which slowed Nigeria's response to short-term shocks.

The MSI variable was found to be significant in several countries, namely Bangladesh, Egypt, Indonesia, Nigeria, and Turkey. Negative MSI coefficients were

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observed in Indonesia and Turkey, indicating that MSI reduced income inequality in these two countries in the short term. This means that within a shorter timeframe, the benefits of development can be more evenly distributed among the people of Indonesia and Turkey. Health and education aspects in Indonesia and Turkey are evenly distributed, not just felt by the wealthiest groups, which can improve the capabilities of low-income communities in both countries in the short term. This can increase the likelihood that someone will be accepted into the labor market and earn a higher income, thereby worsening income inequality (Suhendra, 2020). The MSI variable is positive and significant in Bangladesh, Egypt, and Nigeria in the short term. This means that human development initially worsened income inequality in Bangladesh, Egypt, and Nigeria. This is likely because the increased human development, such as education and health, present in the country more directly benefits high-income groups who tend to have greater access to resources. Consequently, the initial benefits of human development investments are enjoyed more by them, leading to a widening of income inequality in the short term. However, over the long term, human development grounded in the maqashid sharia will overcome income inequality across all D-8 countries.

CONCLUSION

The research results show that human development based on maqashid sharia reduces income inequality problems in all D-8 countries in the long run. This result proves the validity of the theory of development in Islamic economics, which is oriented toward *maslahah*. In the short term, human development based on maqashid sharia reduces income inequality in Indonesia and Turkey. These results show that human development in Indonesia and Turkey is evenly distributed, so both low- and high-income communities can feel the benefits of development. Meanwhile, in Bangladesh, Egypt, and Nigeria, human development increases income inequality.

This study offers several policy recommendations for the government to implement. The government needs to expand access to human development in line with the objectives of Islamic law. The government needs to ensure that access to education and healthcare services is accessible to all segments of society. Additionally, in long-term development planning, the government needs to incorporate values (morality and heritage) into its development metrics to realize the common good for all its citizens. Several limitations must be acknowledged. This study only used one indicator to describe each dimension of the MSI variable. To enrich the research findings, future studies could use more comprehensive indicators for each dimension. Additionally, this study did not include trade openness as a control variable, so future studies are advised to include it.

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