

Zakat Distribution Concentration on Poverty Alleviation: A Spatial Analysis in Indonesia-Malaysia Using LQ-DLQ and Panel Data Models

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ABSTRACT

Zakat has a strategic role in reducing poverty, but its effectiveness depends on the concentration of distribution in each region. This study maps the spread of zakat distribution concentration in Indonesia and Malaysia using the modified Location Quotient and Dynamic Location Quotient (LQ-DLQ) method for spatial analysis and measures its impact on poverty through panel data regression models. This approach also compares the effectiveness of the voluntary zakat system in Indonesia with the mandatory zakat system in Malaysia. The results show that the concentration of zakat distribution significantly reduces poverty. Moreover, interaction analysis shows that the mandatory zakat system in Malaysia is more effective in reducing poverty than the voluntary zakat system in Indonesia. Other results also found areas with superior zakat distribution concentration such as DKI Jakarta, Selangor, and Kelantan, but there are also areas such as East Java which although has an average zakat distribution above the national average, the concentration is still classified as underdeveloped. This research recommends amil to optimize zakat distribution locally, especially in underdeveloped areas, and encourage collaboration between countries to improve zakat management.

Keywords: *Zakat Distribution Concentration, Poverty Alleviation, LQ-DLQ, Indonesia, Malaysia*

JEL classification: I32, D63, C33

INTRODUCTION

The discourse on zakat and poverty alleviation has been widely discussed in various studies. As one of the pillars of *rukun Islam*, zakat has the function of redistributing wealth from muzaki to mustahik. It is not only an individual act of worship but also contributes to creating welfare and stimulating the economy. This study aims to determine how the impact of the concentration of zakat distribution in a region on poverty alleviation in the region with the unit of analysis in Indonesia and Malaysia. In addition, this study also aims to mapping the areas with the prospect of high and low concentration of zakat distribution in both countries.

The concentration of zakat distribution in a region can reflect the quality of amil performance in managing

zakat at that region. In Indonesia, this can be seen from the performance of amil managed by Badan Amil Zakat Nasional (BAZNAS) at each regional level. Meanwhile, in Malaysia, zakat management is under the control of Majelis Agama Islam Negeri-Negeri (MAIN) in each state. Both systems indicate the implementation of decentralization in zakat management, although with different institutional characteristics and mechanisms in each country.

Nevertheless, there is an academic debate on zakat distribution system, particularly between centralisation and decentralization approach. Some studies found that a decentralized zakat system can have a good impact on the economy, this can be in the form of increasing efficiency in zakat management (Wahid et al., 2011), improving the *mustahik* quality

of life (Wahid et al., 2012), up to giving an impact on opportunities for increased development (Aziz et al., 2018). Contrary to these studies, Ataina & Tohirin (2010) found that centralisation in zakat management can actually improve the overall welfare of society. This centralisation approach aims to optimize the collected zakat funds so that the distribution can be done in a more structured manner, especially in addressing social and economic inequality at the national level.

In addition to the difference in zakat management system, another debate arises between the use of voluntary zakat collection system and mandatory zakat collection system. In this case, voluntary zakat collection is considered less optimal in achieving socio-economic justice due to the lack of state involvement (Emzaed, 2023). According to Ardianna et al. (2022), a mandatory zakat system can create a more coordinated and optimal management. However, Lubis et al. (2011) instead highlighted public dissatisfaction in Malaysia, a country with a mandatory zakat collection system, due to the lack of coordination and distribution effectiveness. Migdad (2019) also found that the current distribution of zakat in Malaysia is still dominated for consumptive activities. As a simple comparison, figure 1.1 shows the comparison of zakat distribution in Indonesia which has voluntary zakat collection system and Malaysia which has mandatory zakat collection system.

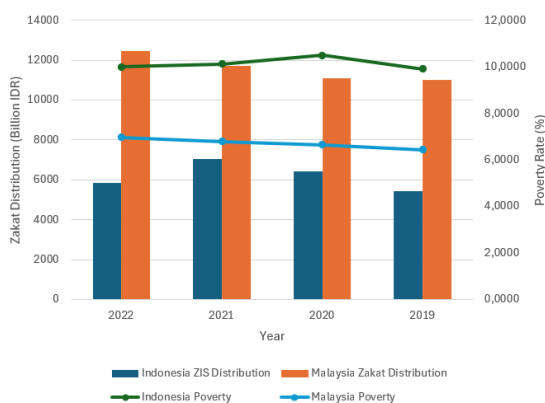
Figure 1.1. Comparison of Zakat Distribution and Poverty Rate (P0) in Indonesia and Malaysia from 2019 - 2022.

Source: Processed from BAZNAS, JAWHAR, BPS, DOSM

The data of zakat distribution in Malaysia is obtained from the *statistik agihan zakat mengikut negeri* which is available in JAWHAR website. As for Indonesia, the data is taken from the ZIS-DSKL Distribution and Utilisation Report published by BAZNAS, by summing up the zakat distribution per province and excluding the ZIS-DSKL Off Balance Sheet component in order to focus on zakat distribution conducted by BAZNAS in each region. The poverty data is processed by averaging the poverty rate (P0) in each province and state. It can be seen in the graph that Malaysia with compulsory zakat collection system has higher zakat distribution amount and lower poverty rate. In contrast, in Indonesia with voluntary zakat collection system, the amount of zakat distribution is lower and the poverty rate is higher.

Various empirical studies in line with the illustration in figure 1.1. have proven that the higher the zakat distribution in a region, the lower the poverty rate (Choiriyah et al., 2020; Wahyuni, 2024; Azizah et al., 2021; Herianingrum et al., 2021; Pratama, 2023; Ayuniyyah et al., 2018; Setiawan, 2024). However, the high distribution of zakat in a region does not necessarily indicate that the region is superior to other regions in alleviating poverty. This is highly dependent on the ratio of zakat distribution to the region's GRDP. A region with a high GRDP may have a large zakat distribution in nominal terms, but the proportion can be relatively lower when compared to other regions that have a smaller GRDP but a larger zakat distribution level.

Therefore, different from the previous studies, this research focuses on measuring the concentration level of zakat distribution in each region and linking it



with poverty level. The aim is to evaluate whether the principle of locality and decentralization of management—represented by the concentration level of zakat distribution in each region—can improve efficiency in alleviating poverty. This research contributes in providing mapping of regions based on high and low concentration level of zakat distribution. Thus, it is expected to support policy making by *amil* in distributing zakat more efficiently. In addition, this research provides a comparative analysis of the effectiveness of zakat distribution between Indonesia and Malaysia, which each implement a voluntary and compulsory zakat system, to determine which system is more efficient. Finally, this research also provides insight into the relationship between the concentration of zakat distribution and the poverty rate in a region, as well as its impact on poverty alleviation efforts.

LITERATURE REVIEW

Zakat Distribution in Indonesia and Malaysia

According to the Surah At-Taubah:60, the distribution of zakat is designated solely for eight specific categories of eligible recipients: the impoverished (*fakir*), the destitute (*miskin*), zakat administrators (*amil*), *muallaf*, the liberation of enslaved persons (*riqab*), those burdened by debt (*gharimin*), those who strive in the cause of Allah (*fii sabilillah*), and travelers in need of assistance (*ibnu sabil*).

In Malaysia, zakat is mandatory for Muslims and must align with Maqasid Shariah, which focuses on preserving faith, life, intellect, lineage, and wealth. Zakat programs are evaluated to ensure they support these goals. In Malaysia, zakat is primarily directed to the poor and travelers, while groups like debtors and slaves receive less attention (Azman et al., 2017; Azhar et al., 2023). Zakat is

managed by state Islamic Religious Councils, with the federal government providing guidelines. Each state has the freedom to manage zakat based on local needs (Nur Barizah, 2006).

Indonesia, with the second-largest Muslim population in the world, has significant zakat potential. The government passed Law No. 23 of 2011 to improve zakat management, replacing the outdated Law No. 38 of 1999. Zakat management in Indonesia is centralized, with BAZNAS (National Zakat Agency) overseeing zakat institutions and managing funds. BAZNAS plays both a regulatory and operational role in zakat distribution. While zakat is an obligation, it is voluntary in Indonesia and not mandatory for all citizens (Yahya, 2020; Ramli, 2021).

Despite legal frameworks, zakat collection in Indonesia has been lower than expected. In 2022, zakat collection reached 22.45 trillion rupiah, but the total potential is estimated at over 300 trillion rupiah. Both the 1999 and 2011 zakat laws emphasize that zakat management is key to achieving social goals, such as improving welfare and reducing poverty (BAZNAS, 2023).

Zakat and Poverty Alleviation

According to (Mannan, 1997), zakat plays a crucial role in promoting social justice and morality, alongside its economic functions. By redistributing wealth to those in need, zakat helps alleviate poverty and creates a more equitable society. It also prevents wealth from accumulating in the hands of a few, ensuring resources are more widely circulated. Zakat as a tool of income redistribution enhances purchasing power among the lower-income population, boosting consumption and driving economic demand, which, in turn, can stimulate production and employment (Iqbal, 2015)

(Ali et al., 2015) assessed the impact of monthly zakat distributions for *Muallaf* in Selangor. They conducted the

analysis using a simple random sampling approach on primary data, applying the Gini coefficient and Lorenz curve as analytical tools. The results reveal that the efforts of zakat institutions have been effective, contributing to a reduction in the poverty gap among converts to Islam and a broader decrease in poverty levels across Malaysia. The collection of zakat in Indonesia has a significantly positive impact on its distribution, and that, in turn, plays a significant role in alleviating poverty (Rini *et al*, 2020). However, the current distribution of zakat in Indonesia predominantly addresses consumptive needs rather than productive activities.

(Choiriyah *et al*, 2020) conducted research utilizing panel data from 2017-2018 across Indonesian provinces, indicating that zakat plays a significant role in reducing poverty, as measured by the poverty headcount ratio (P0)—effectively increasing the number of individuals who rise above the poverty line. However, the study also reveals that zakat does not significantly impact poverty severity or the poverty gap, which reflect the depth of poverty and income disparity among those still below the poverty line. These findings suggest that, while zakat is effective in reducing the number of individuals experiencing poverty, its effect on alleviating the intensity and depth of poverty remains limited.

Zakat from Macroeconomic Perspective

Zakat can significantly contribute to fiscal stability, particularly in developing countries, by helping to reduce external debt and budget deficits. It offers a sustainable alternative for revenue generation, complementing the efforts of the National Board of Revenue to enhance domestic revenue streams and reduce fiscal dependency on external sources (Kabir *et al*, 2024). Assuming that zakat payers' consumption is determined by their disposable income after paying zakat while zakat recipients' consumption is influenced by the amount of zakat they receive, their

autonomous consumption, and their marginal propensity to consume (MPC) as well as the MPC of zakat recipients is higher than zakat payers, (Yusoff, 2010) define an aggregate consumption equation by combining the consumption of zakat recipients and zakat payers.

$$C = C_{01} + C_{0z} + C_1Y_1 + (C_2 - C_1)G_z + C_2Y_2$$

The model demonstrates that zakat can enhance aggregate consumption by reallocating resources from zakat payers, who have a lower marginal propensity to consume (MPC), to zakat recipients with a higher MPC. This reallocation leads to an overall increase in consumption, as lower-income recipients are more likely to spend additional income compared to wealthier payers. Consequently, zakat functions as a fiscal policy instrument that can stimulate demand and promote economic stability, particularly during economic downturns, by directing funds to segments of the population with a higher tendency to consume (Yusoff, 2010). The increase of aggregate consumption with zakat can also be described by the curve below

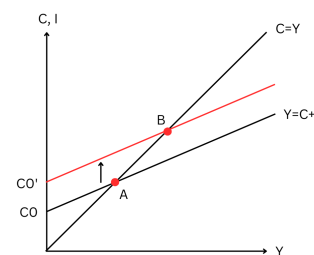


Figure 2.1. The Impact of Zakat in Increasing Aggregate Consumption.
Source: Author's Processing, 2024

It is also aligned with (Jedidia & Guerbouj, 2010) that zakat contributes to the country's economic growth. Specifically, when zakat funds are allocated to boost consumption, investment, or government spending, they help drive economic expansion.

Furthermore, the authors conclude that greater trade openness leads to an increase in real gross domestic product (GDP) per capita. Unlike conventional taxes, which may discourage work, zakat—viewed as a religious duty that Muslims willingly uphold—can strengthen work incentives, thereby increasing labor participation, employment, and economic growth (Chowdhury, 1983).

LQ-DLQ Method for Spatial Analysis

Location Quotient (LQ) and Dynamic Location Quotient (DLQ) are statistical methods used to measure how specialized an economic sector is in a region compared to the national level. LQ measures the concentration of a sector in a region relative to the national output and can be calculated using the Bendavid-Val equation (Kuncoro, 2004). In contrast, DLQ analyzes changes in sector concentration over time, as described by Nazipawati (2009).

The concentration of zakat distribution, measured through LQ and DLQ, reflects the principle of local zakat management, which focuses on distributing funds within the collection area to benefit the local community. By targeting areas with high concentrations of mustahik (eligible recipients), zakat can be more effective in reducing local poverty and creating sustainable benefits. The LQ-DLQ approach ensures zakat funds are allocated efficiently and match regional needs, avoiding equal distribution that may not be targeted effectively.

Table 2.1. Four-Category Classification of Regions by Modified LQ-DLQ Calculation

	$LQ_{it} > 1$	$LQ_{it} < 1$
DLQ_{it}	Superior Zakat Distribution Concentration High growth of	Developing Zakat Distribution Concentration High growth of

	zakat distribution, high concentration of zakat distribution	zakat distribution, low concentration of zakat distribution
DLQ_{it}	Potential Zakat Distribution Concentration Low growth of zakat distribution, high concentration of zakat distribution	Underdeveloped Zakat Distribution Concentration Low growth of zakat distribution, low concentration of zakat distribution

Muljanto (2021) carried out a regional analysis aimed at identifying the basic and leading sectors that should be prioritized due to their significant contribution to the economic growth of Sidoarjo Regency. This research utilized the Location Quotient (LQ), Dynamic Location Quotient (DLQ), and Klassen Typology methods to evaluate which sectors serve as the foundation for economic development and which are the most influential in driving regional economic growth. Another study conducted by Amora (2022) using LQ-DLQ Methods to determine which sectors could serve as the foundation for the region’s economic development while also identifying those with high growth potential. By analyzing the economic structure of the region, this study provided insights into the sectors that could drive future economic expansion in Tangerang Selatan, similar to how manufacturing and transportation sectors were identified in previous studies as crucial to regional growth.

DATA AND METHODOLOGY

Data and Variable

This study uses Indonesia and Malaysia as the unit of analysis with unbalanced panel data due to the different time spans available between the two countries. Indonesia is analyzed in the period 2019 – 2022, while Malaysia in the period 2016 – 2023. This difference is due to the limitation of zakat distribution data available in panel format between provinces in Indonesia only for the 2019 – 2022 time span. Instead of making adjustments in the data to achieve panel equilibrium by reducing observations, the researcher chooses to retain the entire existing data. This approach aims to improve estimation efficiency and enable more representative longitudinal analyses, particularly in research contexts where complete data is difficult to obtain. This study aims to analyze the relationship between poverty and the concentration level of zakat distribution in different regions, using poverty level as dependent variable and location quotient (LQ) of zakat as independent variable. The researcher modifies the conventional LQ method that is commonly used to analyze the concentration of economic sectors, and replaces it with an analysis of the concentration of zakat distribution. To obtain a more accurate estimation, the researcher adds three control variables, namely individual income, annual inflation rate, and unemployment rate. The selection of these control variables refers to previous research conducted by Samiani et al. (2024), Norassikin & Azhar (2024), and Affandi & Astuti (2013).

To analyze the difference in the concentration pattern of zakat distribution in poverty alleviation between Indonesia and Malaysia, the researcher also adds a control variable in the form of country dummy. Given the missing values in the data of poverty rate, unemployment rate, inflation rate, and zakat distribution in Malaysia, the researcher applies a linear interpolation method through Stata 17 to estimate the missing values. This interpolation process is done to maintain the number of observations available, so that the analysis conducted still reflects the relevant time period and produces more accurate estimates. In addition, due to the difficulty in obtaining consistent data between the two countries, researchers used several proxy variables between countries, which can be seen in Table 3.1. For the income variable, the analysis in Indonesia uses the average consumption of households with telecommunication expenditure by province, assuming that almost all households have telecommunication expenditure and that consumption is considered equivalent to income. Meanwhile, for the data from Malaysia, the average household income was used. Variables denominated in Malaysian Ringgit have been adjusted into Rupiah based on the average exchange rate of the last 90 days since this study was compiled.

Table 3.1. Variable Definitions and Operations

Variable Symbol	Definition	Unit of Measurement	Source
P0	Measures how much percentage of the population is below the poverty line	Percentage (%)	Badan Pusat Statistik, Department of Statistics Malaysia
Zakat	Represents the variable of zakat distribution. For Indonesia, the amount of	IDR	Badan Amil Zakat Nasional (BAZNAS), Jabatan Wakaf, Zakat & Haji (JAWHAR)

	ZIS-DSKL distribution in each province is used, while for Malaysia, the amount of zakat distribution in each state is used.		
PDRB	Total value of gross regional domestic product at constant prices with a base year of 2010.	IDR	Badan Pusat Statistik, Department of Statistics Malaysia
LQ_Zakat	The concentration value of zakat distribution in region <i>i</i> is compared with the concentration of zakat distribution at the national level.	Index	Calculations
DLQ_Zakat	The growth value of zakat distribution concentration in region <i>i</i> is compared with the growth of distribution concentration at the national level.	Index	Calculations
l_Income	Represents the total income variable. For Indonesia, the average consumption of households with telecommunication expenditure by province is used. While for Malaysia, household income is used.	Percentage (%)	Badan Pusat Statistik, Department of Statistics Malaysia
Inflation	Calculated based on the percentage change in the consumer price index from the previous period, which shows the average increase in the prices of goods and services consumed by households.	Percentage (%)	Badan Pusat Statistik, Department of Statistics Malaysia
Unem	The percentage of the population that is in the labour force but unemployed compared to the total labour force.	Percentage (%)	Badan Pusat Statistik, Department of Statistics Malaysia
n	The country dummy is 1 for Indonesia and 0 for Malaysia.	Dummy	

LQ_Zakat*n	Interaction between variable LQ_Zakat and variable dummy contries	Index
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Modified Location Quotient and Dynamic Location Quotient (LQ-DLQ)

As cited by Wheeler (2005), Location Quotient and Dynamic Location (DLQ) can also be defined as geographical indices used in measuring and mapping the concentration level of a geographical subarea compared to the whole area. Therefore, instead of using 17 economic sectors as the basis of calculation, this study modifies the LQ-DLQ concept by using the amount of zakat distribution in an area to measure its concentration level relative to the whole area at a higher level. Thus, the LQ equation that follows the Bendavid-Val formula (Kuncoro, 2004) is modified by replacing 17 economic sectors into zakat distribution, so that equation 1a will be obtained. Similarly, the DLQ equation according to Nazipawati (2009) is modified by the author so that it becomes equation 1b.

$$LQ_{it} = \frac{Zakat_{it} / GDRP_{it}}{Zakat_t / GDP_t} \tag{1a}$$

Where:

- LQ_{it} = The concentration value of zakat distribution in region *i* in year *t*
- $Zakat_{it}$ = Value of zakat distribution in region *i* in year *t*
- $GDRP_{it}$ = Total GRDP value in region *i* in year *t*
- $Zakat_t$ = Value of zakat distribution nationally in year *t*
- GDP_t = Total value of national GDP in year *t*

$$DLQ_{it} = \frac{(1 + g_{Zakat_{it}}) / (1 + g_{PDRB_{it}})}{(1 + G_{Zakat}) / (1 + G_{PDB})} \tag{1b}$$

Where:

- DLQ_{it} = Potential concentration index of zakat distribution in region *i* in year *t*
- $g_{Zakat_{it}}$ = Growth rate of zakat distribution concentration in region *i* in year *t*
- $g_{PDRB_{it}}$ = Average growth rate of GRDP in region *i* in year *t*
- G_{Zakat} = Growth rate of concentration of national zakat distribution
- G_{PDB} = Average growth rate of GRDP nationally

When the LQ_{it} value is greater than 1, it can be concluded that the concentration of zakat distribution in region *i* in year *t* is much higher than the concentration of zakat distribution nationally. Conversely, if LQ_{it} is less than 1, it means that region *i* in year *t* has a smaller concentration of zakat distribution when compared to the concentration of zakat distribution nationally. Similarly, with DLQ concept, if $DLQ_{it} > 1$, it means that the growth of zakat distribution concentration in region *i* in year *t* is higher than the national one. Conversely, if $DLQ_{it} < 1$, the growth of zakat distribution concentration in the region is lower or decreases compared to the national. Based on the LQ and DLQ values obtained, four categories can be mapped based on the growth rate of zakat distribution and the concentration level of zakat distribution.

Model Development

This study uses panel data analysis to determine the relationship between variables. This analysis is used because of the nature of the data that has many individuals and time (time series and cross

section data). So that there are at least two models that are likely to be used, namely fixed effect model (FEM) and random effect model (REM). According to Baltagi (2008), the Fixed Effects model is used when there is unobserved variability that is consistent across time within each unit (for example, differences between provinces or countries). This model is useful to control for unobservable factors that may affect the dependent variable, but are assumed to remain constant for each unit. So in the context of the study, it can be written:

$$P0_{it} = \alpha_{it} + \beta_1 LQ_Zakat_{it} + \beta_2 (LQ_Zakat * n)_{it} + \beta_3 Uner + \beta_4 Inflation_{it} + \beta_5 l_Income_{it} + \epsilon_{it}$$

Also according to Wooldridge (2010), the Random Effects model is used when differences between units are considered random and uncorrelated with the independent variables in the model. This model is more efficient than Fixed Effects if the assumptions regarding the correlation between independent variables and random effects are not violated, allowing for more precise estimation. So it can be written:

$$P0_{it} = \alpha_{it} + \beta_1 LQ_Zakat_{it} + \beta_2 (LQ_Zakat * n)_{it} + \beta_3 Uner + \beta_4 Inflation_{it} + \beta_5 l_Income_{it} + u_i + \epsilon_{it} \quad (3)$$

The control variables in this study include income measured in natural logarithm, inflation rate, unemployment rate, and country dummies. The application of three panel regression models aims to ensure the consistency and accuracy of the resulting estimates, and serves as a robustness check to test the reliability of the analysis results.

Hausman Test

Table 3.2. Hausman Test

Variabl e	FEM Coefisi en (b)	REM Coefisie n (B)	Different (b-B)	Std. Error
LQ_Za kat	-2.378	-2.290	-0.088	0.259
Unem	1.073	0.882	0.190	0.085

Inflatio n	-0.154	-0.134	-0.020	0.003
l_Inco me	0.902	0.228	0.673	0.283
LQ_Za kat*n	1.193	1.998	-0.805	1.095

To determine the better estimation model, a Hausman test is conducted. The results of the Hausman test for each variable are presented in Table 3.3. Based on the results, the test statistic (Chi-square) with 5 degrees of freedom is 28.48, and the probability value (Prob > Chi2) is less than 0.05 (Prob > Chi2: 0.0000). Thus, the null hypothesis (H0), which states that the coefficient differences are not systematic, is rejected. Consequently, the Fixed Effects Model (FEM) is deemed more appropriate than the Random Effects Model (REM). However, for robustness checks and to assess consistency, both FEM and REM are utilized in the analysis.

RESULT AND DISCUSSION

Descriptive Statistic and Correlation Matrix

The variable description shown in Table 4.1 shows that there is a high variation in the value of zakat distribution (Zakat) and the concentration of zakat distribution (LQ_Zakat). The average zakat distribution is recorded at IDR4.35 billion, with a high standard deviation of IDR703 billion, which indicates a considerable difference between regions.

This is also evident in the maximum value of zakat distribution which reached IDR4.19 trillion, while the minimum value was only IDR658 million. This difference may also reflect variation in the capacity and effectiveness of zakat distribution in different regions. In addition, the average value of LQ_Zakat is 0.88 which shows that in general, the concentration of zakat distribution in most of the observed areas is still below the national level. This indicates that the

distribution of zakat at the local level tends to be lower than the national level. However, there are some areas with LQ_Zakat that are far above 1 (maximum reaching 3.72), which indicates that zakat

has a more dominant role in the local economy of these areas.

Table 4.1. Variable Descriptive

Variable	P0 (%)	LQ_Zakat	Unem (%)	Inflation (%)	Income (IDR)	Zakat (IDR)
Mean	8,137	0,883	4,457	2,435	12.900.000	435.000.000.000
Std. dev.	5,547	0,807	1,735	1,910	10.200.000	703.000.000.000
Min.	0	0,02	0,9	-1,89	3.597.252	658.000.000
Max.	27,38	3,72	10,015	7,450	44.900.000	4.190.000.000.000
Observation	228	228	228	228	228	228

Table 4.2 shows a negative relationship between zakat variable and poverty level, which indicates that when poverty decreases, zakat allocation in the region tends to increase, or vice versa. In addition, the concentration level of zakat distribution, represented by the LQ_Zakat variable, also shows a negative relationship although it is small. However, the interaction variable between LQ_Zakat and country (LQ_Zakat*n) shows a positive correlation. This means that if the country analysed is Indonesia (Dummy =

1), then the concentration of zakat distribution has a positive correlation with poverty rate. In contrast, this relationship does not hold in Malaysia, where the concentration of zakat shows a different tendency towards poverty. In addition, zakat and LQ_Zakat have a positive correlation. This means that the distribution of zakat will have a positive correlation to the increase in the concentration of zakat distribution.

Table 4.2. Correlation Matrix

Variable	Poverty	LQ_Zakat	Unem	Inflation	Income	LQ_zakat*n	Zakat
Poverty	1,000						
LQ_Zakat	-0,0969	1,000					
Unem	0,270	-0,024	1,000				
Inflation	0,072	-0,152	0,131	1,000			
Income	-0,351	0,269	-0,400	-0,390	1,000		
LQ_Zakat*n	0,219	0,454	0,366	0,168	-0,460	1,000	
Zakat	-0,382	0,338	-0,062	-0,129	0,341	0,008	1,000

LQ-DLQ Results and Analysis

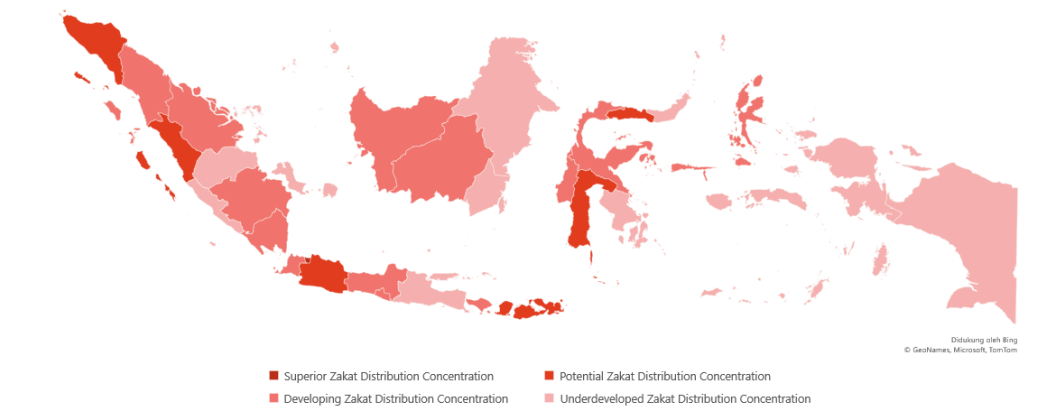


Figure 4.1 Map of Zakat Distribution in Indonesia Based on LQ-DLQ Values
 Source: Author's Processing, 2024

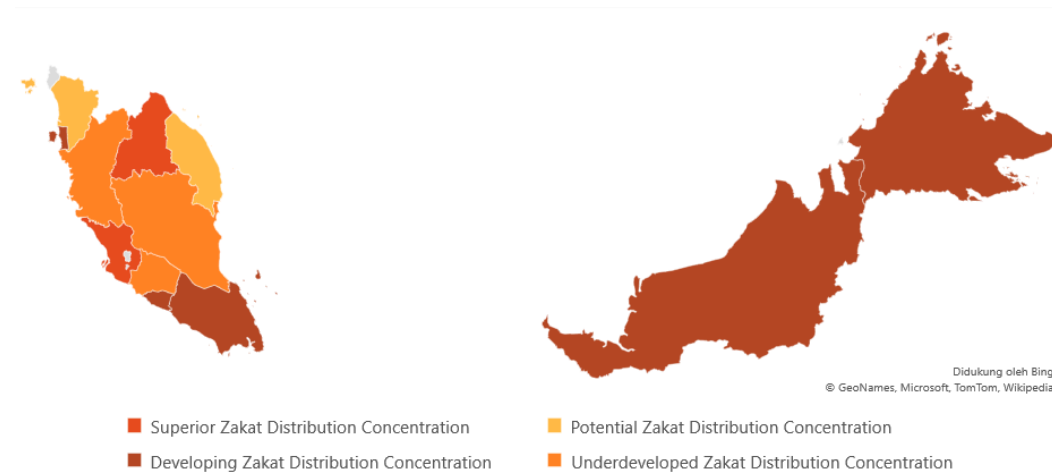


Figure 4.2 Map of Zakat Distribution in Malaysia Based on LQ-DLQ Values
 Source: Author's Processing, 2024

The maps above illustrate the distribution of zakat concentration in Malaysia and Indonesia, based on Location Quotient (LQ) and Dynamic Location Quotient (DLQ) values. The regions are classified into four categories: superior, potential, developing, and underdeveloped, reflecting varying zakat concentration levels. Darker shades indicate areas with higher zakat concentration and growth potential, while lighter shades show regions with lower zakat concentration and growth potential.

The superior sector (high LQ and DLQ) includes regions such as DKI

Jakarta, Kelantan, and Selangor, where zakat supports socio-economic projects that sustain growth. The potential sector ($LQ > 1, DLQ < 1$), including Sumatera Barat and Kedah, shows strong zakat management but slower growth. Here, zakat can revitalize economies and enhance resilience. In the developing sector ($LQ < 1, DLQ > 1$), such as Sumatera Utara and Johor, zakat can accelerate economic development and reduce poverty. The underdeveloped sector ($LQ < 1, DLQ < 1$), including Jambi and Negeri Sembilan, faces economic

challenges and requires targeted zakat to address disparities and stimulate growth.

Strategically directed zakat can enhance economic development, reduce poverty, and promote balanced growth by addressing regional needs and fostering long-term prosperity across both countries.

Panel Data Result

On the LQ_Zakat variable, the regression result shows a significant negative relationship with poverty rate. In the Fixed Effect Model (FEM), the coefficient of LQ_Zakat of -2.378 is significant at the 5% level (p = 0.036), which indicates that an increase in the concentration of zakat distribution (LQ_Zakat) in a region is associated with a decrease in poverty level. Similarly, in the Random Effect Model (REM), the coefficient of LQ_Zakat of -2.290 is significant at the 1% level (p = 0.001), supporting the same result. This means that overall, the higher the concentration of zakat distribution in a region, the lower the poverty rate. This result supports the role of zakat in poverty alleviation, as regions that receive higher zakat distribution tend to experience a decrease in poverty.

For the variable LQ_Zakat*n, which is the interaction between zakat

concentration (LQ_Zakat) and country variables (with 1 = Indonesia and 0 = Malaysia), the result is different between FEM and REM models. In FEM, the coefficient of LQ_Zakat*n of 1.193 is not significant (p = 0.332), which means that in this model, the interaction between zakat concentration and country does not show a significant effect on poverty rate. However, in REM, the coefficient of LQ_Zakat*n of 1.998 is significant at 10% level (p = 0.056), indicating a positive relationship between zakat concentration and poverty rate that differs across countries. With this result, we can interpret that, particularly in Malaysia (where the country variable is 0), an increase in zakat concentration is more effective in reducing poverty, whereas in Indonesia (where the country variable is 1), high zakat concentration may have less direct impact on poverty reduction. The significance of this interaction in REM indicates that there are differences in the context or implementation of zakat between the two countries, which may make the effect of zakat distribution on poverty different in Indonesia and Malaysia.

Table 4.3. Summary of Model

Dependent Variable	Poverty	
	Fixed Effect Model	Random Effect Model
LQ_Zakat	-2,378 (0,036)**	-2,290 (0,001)***
Unem	1,073 (0,031)**	0,882 (0,054)*
Inflation	-0,154 (0,002)***	-0,134 (0,001)***
l_Income	-0,154 (0,002)***	0,228 (0,663)
LQ_Zakat * n	1,193	1,998

	(0,332)	(0,056)**
C	-9,118 (0,575)	2,182 (0,803)

Note: ***(p -value < 0,01) **($0,01 \leq p < 0,05$) *($0,05 \leq p < 0,1$)

Panel Data Analysis

Referring to Table 4.3, the LQ_Zakat variable shows a significant negative relationship with the poverty rate in both Fixed Effect and Random Effect models. The consistency of this result indicates that the higher the concentration of zakat distribution in a region, the greater the impact in reducing poverty level in that region. That is, the distribution of zakat that is focused in the area of origin of zakat collection plays an important role in alleviating local poverty. This finding is in line with various previous studies that show that zakat can significantly reduce poverty rate (Choiriyah et al., 2020; Wahyuni, 2024; Azizah et al., 2021; Herianingrum et al., 2021; Pratama, 2023; Ayuniyyah et al., 2018; Setiawan, 2024).

Furthermore, this result strengthens the principle of locality in zakat distribution that is recommended in fiqh. In the view of zakat fiqh, the distribution should be done in the area of origin of zakat collection, so that the benefits are directly felt by the local community who may be more in need. The locality theory in zakat distribution emphasizes the importance of distributing zakat in the area where it is collected, so that the benefits are directly felt by local people in need. The significant negative relationship between the LQ Zakat variable and poverty rate supports this principle, indicating that the higher the concentration of zakat distributed in the region of origin, the greater the effect in reducing poverty. In other words, when zakat is distributed locally and focused, its impact in alleviating poverty becomes more effective, in line with the principle of locality in zakat fiqh.

The interaction variable (LQ_Zakat*n) shows a positive relationship with poverty rate, although the significance is only found in random effect model. This suggests that the concentration of zakat distribution in Indonesia tends to be positively correlated with poverty, while in Malaysia, zakat distribution has a negative correlation with poverty. This finding indicates that the effectiveness of zakat in reducing poverty may be higher in Malaysia compared to Indonesia. This difference may be caused by variations in the mechanism of zakat distribution and management in both countries, which potentially affect the effectiveness of zakat in reducing poverty. In addition, this difference may also be related to the higher realisation rate of zakat in Malaysia compared to Indonesia. In Malaysia, the zakat collection system is compulsory, which increases the compliance of the people in giving zakat. In contrast, in Indonesia, the zakat collection system is more voluntary, which may limit the scope and effectiveness of zakat distribution in overcoming poverty.

CONCLUSION

This study demonstrates that a higher concentration of zakat distribution (LQ_Zakat) is generally associated with a reduction in poverty levels. The findings indicate that localized zakat distribution tends to have a more pronounced impact on poverty alleviation, supporting the principle within zakat fiqh that emphasizes the importance of distributing zakat in the area of its collection. However, the relationship between zakat concentration and poverty differs between Indonesia and Malaysia. In Malaysia, zakat concentration is more effectively linked to poverty

reduction, likely due to the country's compulsory zakat collection system, which ensures greater compliance and more efficient distribution. In contrast, Indonesia's voluntary system may limit the scope and impact of zakat, leading to a weaker relationship between zakat concentration and poverty reduction. The results underscore the importance of optimizing zakat distribution based on regional needs and improving management systems to enhance its effectiveness. While zakat holds significant potential for poverty alleviation, its success is contingent upon both its concentration and the institutional mechanisms in place to ensure efficient and equitable distribution.

RECOMMENDATION

Based on the findings of this study, the following recommendations are proposed to enhance the effectiveness of zakat in poverty alleviation:

- *Localized Zakat Distribution*: The study supports the principle of distributing zakat in the area of collection, as it is more effective in reducing local poverty. Regional zakat management systems should focus on strengthening the targeting mechanisms to direct zakat resources to the areas with the greatest needs, particularly in underdeveloped regions.
- *Focus on Underdeveloped Regions*: Regions identified as underdeveloped, with weak zakat management based on the calculation of LQ-DLQ such as Jambi, Bengkulu, Bangka Belitung, Kepulauan Riau, Jawa Timur, Kalimantan Selatan, Kalimantan Timur, Kalimantan Utara, Sulawesi Utara, Sulawesi Tenggara, Maluku, Papua Barat, and Papua, as well as Pahang and Perak in Malaysia, should be prioritized for targeted zakat interventions. This includes investing in socio-economic

infrastructure and creating local social safety nets to address immediate needs and stimulate long-term growth.

- *Cross-country Collaboration*: This study strongly indicates the significance of zakat distribution to reduce poverty level in Malaysia and Indonesia. Future research should explore the effectiveness of zakat in a broader range of countries, particularly in Muslim-majority nations, to better understand how it influences poverty alleviation in varying socio-economic and cultural contexts. An example of such efforts is the World Zakat Forum held at the Indonesia Sharia Economic Festival (ISEF) in Jakarta, where representatives from OIC countries shared insights on zakat management. This forum highlighted the importance of international collaboration in improving zakat systems and expanding its impact on a global scale.

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