



RESEARCH ARTICLE

The Impact of Zakat, Infak, and Sedekah Distribution, Gross Regional Domestic Product, Open Unemployment Rate, and Gini Index on Poverty in 34 Provinces of Indonesia from 2015 to 2025

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Funding information

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Abstract

Poverty is a persistent multidimensional development issue in Indonesia. This study aims to analyze the impact of the distribution of Zakat, Infak, and Sedekah (ZIS), Gross Regional Domestic Product (GRDP), Open Unemployment Rate (OUR), and Gini Index on poverty in 34 provinces of Indonesia during the period of 2015–2025. Using secondary panel data (N = 338), all independent variables were transformed with a one-period lag (t-1) to capture the delayed effects of policies and to reduce (but not eliminate) potential endogeneity. Based on the testing results, the Fixed Effect Model (FEM) with a Robust Variance Covariance Estimator (Robust VCE) approach was chosen to address violations of classical assumptions. The findings indicate that the previous period's ZIS has a positive and significant effect on the number of poor people (coefficient 0.238; p = 0.000), while GRDP, OUR, and the Gini Index do not have a significant effect. These results should not be interpreted as evidence that ZIS causes poverty, but rather as an association reflecting the targeting effect (funds following the poverty map), the dominance of consumptive distribution patterns, and the small scale of ZIS collection compared to the magnitude of the problem. With these characteristics, and based on supporting data and previous research, ZIS is interpreted as a palliative instrument that alleviates the depth and severity of poverty but has not yet succeeded in lifting beneficiaries above the poverty line, resulting in no decrease in the number of poor people.

Keywords

Zakat; Infak; Sedekah; GRDP; Unemployment; Gini Index; Poverty; Panel Data; Fixed Effect Robust.

1 | INTRODUCTION

Poverty is one of the multidimensional issues faced by almost all developing countries, including Indonesia. The success of a country's development is measured, among other things, by its ability to reduce the number of poor people and improve income distribution. According to data from the Central Statistics Agency (BPS), as of March 2024, the number of poor people in Indonesia was recorded at 25.22 million or equivalent to 9.03% of the total population. Although this figure has decreased compared to previous years, it remains relatively high, especially in most provinces in Eastern Indonesia (Central Statistics Agency, 2024). A paradox of inclusive growth (pro-poor growth paradox) is evident in Indonesia. Despite consistent growth in Gross Regional Domestic Product (GRDP) over the past decade, the benefits of this growth have not necessarily impacted marginalized communities (trickle-down effect). This can be seen from the slow decline in the Gini Index and the high Open Unemployment Rate (OUR) in various provinces. The World Bank (2024) emphasizes that structural barriers in the trickle-down mechanism often slow the distribution of economic growth benefits to the lowest societal layers, thus the growth of GRDP is still insufficient to explain changes in poverty levels directly during the same period. This pattern is clearly illustrated in Figure 1 below, where the national GDP expansion of around 5% per year only results in an average poverty reduction of 0.2 to 0.5 percentage points per year.

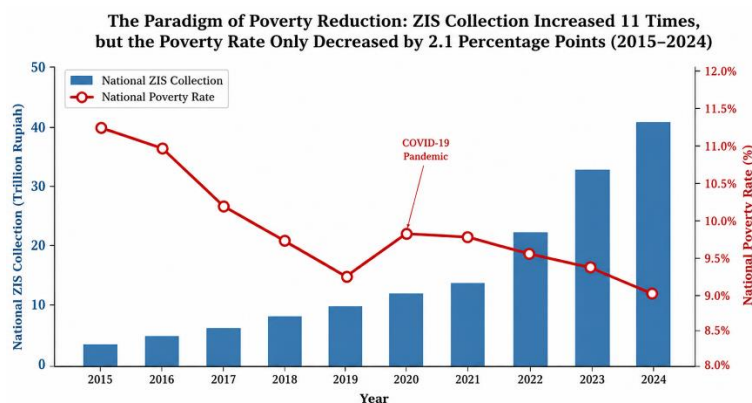


Figure 1. The Poverty Alleviation Paradox: ZIS Collection Grows 11-fold while Poverty Reduction is Only 2.1 Percentage Points (2015–2024). Source: BPS (2024) and BAZNAS (2024), processed by the researcher.

Figure 1 illustrates the paradox of inclusive growth, which serves as the main starting point for this research. Over the past decade, national ZIS (Zakat, Infak, and Sedekah) collection has surged more than elevenfold from IDR 3.65 trillion in 2015 to approximately IDR 41 trillion in 2024. This increase appears biased even amid economic disruptions caused by the COVID-19 pandemic, demonstrating the resilience of the Islamic economy's third sector during such a crisis. However, during the same period, the national poverty rate only decreased from 11.13% to 9.03%, which is a relatively minimal reduction compared to the significant expansion on the ZIS collection side. So, why has this surge in instruments still been unable to produce a proportional reduction in poverty?

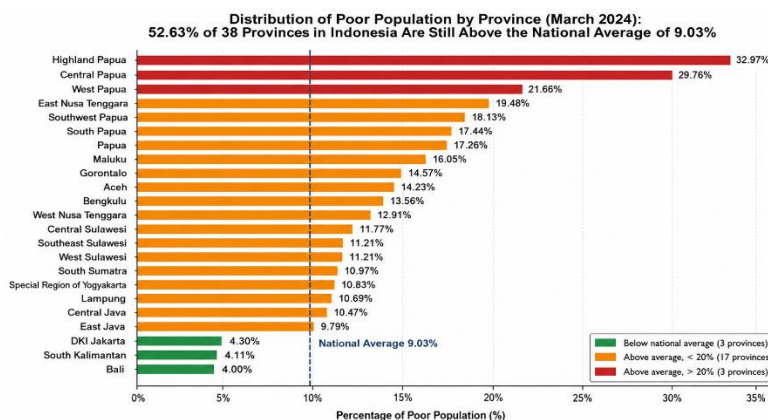


Figure 2. Percentage Distribution of Poor Population by Province (March 2024): 52.63% of 38 Provinces in Indonesia Remain Above the National Average of 9.03%. Source: BPS (2024), processed by the researcher.

Figure 2 shows us the reasons and strengthens the urgency of conducting this research and applying a panel data approach to this issue. Based on BPS data as of March 2024, out of a total of 38 provinces in Indonesia, 20 provinces or approximately 52.63% are still above the national average of 9.03%. Meanwhile, only a few provinces have succeeded in significantly reducing poverty rates well below the national average, such as Bali (4.00%), South Kalimantan (4.11%), and DKI Jakarta (4.30%). This extreme difference reaches more than eight times between Bali as the lowest province and Papua Mountains, which ranks highest with 32.97%. The high proportion of provinces above the national average emphasizes that poverty in Indonesia still shows significant spatial disparities that cannot be captured through time-series analysis alone. This condition necessitates that this research approach explicitly accommodates differences in characteristics among provinces (unobserved heterogeneity) through fixed effects models.

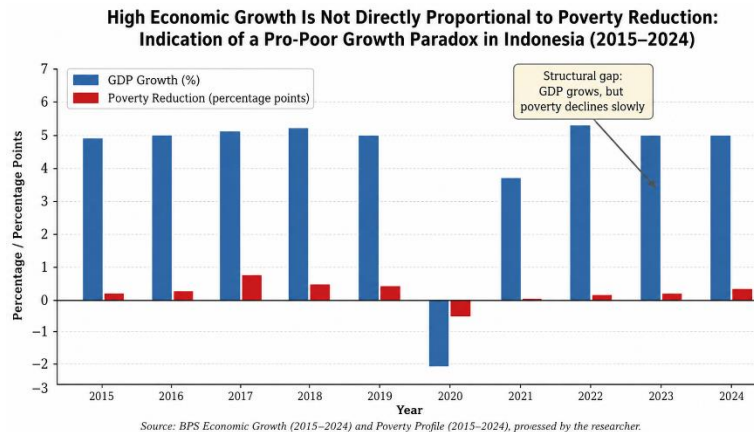


Figure 3. High Economic Growth Does Not Correlate with Poverty Alleviation: Indications of Pro-Poor Growth Paradox in Indonesia (2015–2024). Source: BPS (2015–2024), processed by the researcher.

Figure 3 clarifies the next dimension of the paradox, where despite Indonesia's GDP consistently growing around 5% per year outside the pandemic period, poverty reduction only ranges from 0.2 to 0.5 percentage points per year. The gap between macroeconomic dynamics and poverty dynamics indicates that the trickle-down mechanism has not worked optimally in this case, and poverty alleviation policies require more specific and varied instruments, including the role of Islamic economics that can function as a mechanism for channeling funds to marginalized communities and in remote, outer, and underdeveloped areas (3T).

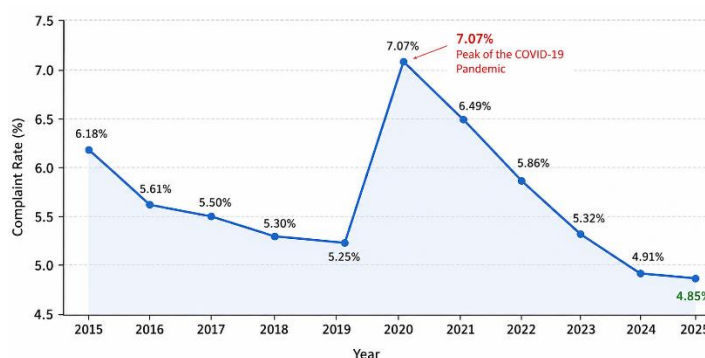


Figure 4. National Open Unemployment Rate Trends (August), 2015–2025: Post-Pandemic Recovery Does Not Immediately Erase Unemployment Scars. Source: BPS, Sakernas August (2015–2025), processed by the researcher.

Figure 4 displays the existing condition of the national Open Unemployment Rate (OUR) throughout the research period. The OUR shows a consistent downward trend from 6.18% in August 2015 to 5.23% in August 2019, before sharply rising to 7.07% in August 2020 due to the shock of the COVID-19 pandemic. Post-pandemic, the OUR gradually decreased to 4.85% in August 2025, the lowest level in the last decade. However, this aggregate recovery conceals two important notes for this research. First, the spike in OUR in 2020 and its recovery process taking several years indicate that labor market shocks are not entirely resolved in the same year, leaving subsequent scarring effects on household income in the following periods, making it relevant to analyze with a one-period lag approach. Second, national figures hide wide variations among provinces, where some provinces record OUR far above the national average while others are significantly below it, reaffirming the need for a panel data approach.

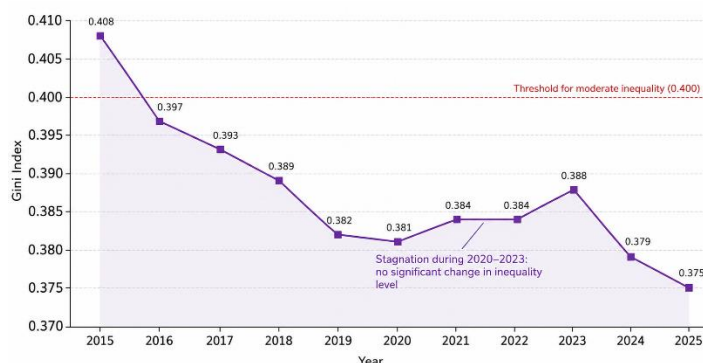


Figure 5. National Gini Index Trends (March), 2015-2025: Inequality Decreases Slowly and Stagnates During the Pandemic Period. Source: BPS, Susenas March (2015-2025), processed by the researcher.

Figure 5 illustrates the existing condition of expenditure distribution inequality measured by the Gini Index. Throughout 2015-2025, the national Gini Index only decreased from 0.408 to 0.375, or an average reduction of less than 0.004 points per year. Even during the 2020-2023 period, the decline in inequality nearly halted and even rose to 0.388 in March 2023, indicating that the post-pandemic economic recovery was first enjoyed by the upper-middle class.

The slow and persistent movement of the Gini Index aligns with the poverty-growth-inequality triangle framework (Bourguignon, 2003); as long as inequality remains high, the elasticity of poverty reduction to economic growth will be blunt, thus consistent GRDP growth does not automatically translate into proportional poverty reduction. This sticky (persistent) nature of inequality also justifies the empirical use of the previous period's Gini Index ($t-1$) in the research model. What factors actually determine the alleviation of poverty reduction in Indonesia, and why have existing instruments, including those based on Islamic Social Finance such as ZIS, still been unable to substantially close the poverty gap? This question serves as the starting point for this research.

The instruments of Zakat, Infak, and Sedekah (ZIS) show an exponentially increasing collection trend, even during the COVID-19 pandemic. According to data from the Indonesian Zakat Outlook (BAZNAS, 2023), the realization of national ZIS distribution continues to rise year after year, but its impact on poverty alleviation at the provincial level remains varied. Nurherlina (2024) found that ZIS collection positively contributes to macroeconomic stability and wealth redistribution, while Muttaqin & Safitri (2021) assert that ZIS is effective in reducing the depth and severity of poverty. The soaring collection but slow poverty reduction illustrates that ZIS operates as a parallel social safety net complementing conventional fiscal instruments, yet requires a lengthy transmission time for its macro-level impact to be measurable at the provincial level.

Thus, this is a structural issue that requires a time-lag perspective. The policy of ZIS distribution, fluctuations in GRDP, and dynamics of the unemployment rate (OUR) this year will only be reflected in the social status of marginalized households in the following year (Puskas BAZNAS, 2020). Additionally, the distribution of ZIS funds and the highly uneven economic structure among the 34 provinces, as shown in Figure 2, create significant heterogeneity, necessitating the projection of panel data. Inconsistencies in previous research findings also reinforce the urgency of this research. For instance, Wibowo (2023) and Imsar et al. (2023) found that ZIS has a significant negative effect, while Islami & Fitrianto (2023) and Mubarakah & Pimada (2024) found that ZIS does not have a significant effect. These conflicting findings indicate a research gap that needs to be further examined with a more comprehensive regional and temporal scope.

Based on this background, this study aims to analyze how and to what extent the distribution of ZIS, GRDP, OUR, and the Gini Index affects poverty in 34 provinces of Indonesia during the period of 2015-2025 using a lagged panel data regression approach. The novelty of this research lies in three aspects. First, a broader geographical scope, encompassing all 34 provinces of Indonesia. Second, a relatively longer observation period covering the pre-post pandemic period (2015-2025). Third, the use of lag transformation on all independent variables to more accurately capture the effects of policy transmission. The results of this study are expected to provide practical contributions to the government, BAZNAS, and other stakeholders in formulating poverty alleviation policies based on integrated Islamic Social Finance instruments with macroeconomic policies.

2 | BACKGROUND THEORY

2.1 Welfare Economics and Capability Approach

The philosophical foundation of this research is built on Welfare Economics and the Capability Approach developed by Amartya Sen. This approach emphasizes that poverty is not merely a matter of income deprivation but also the loss of basic capabilities for individuals, such as the ability to obtain education, health, and social

contributions. This framework encompasses all the variables in the research, namely GRDP and ZIS as instruments aiming to restore economic capabilities, while the unemployment rate and Gini Index reflect the degree of capability loss (Sen, 1999 in Bourguignon, 2003). Thus, efforts to alleviate poverty through ZIS are not only meaningful as monetary transfers but also as efforts to restore sustainable capabilities for beneficiaries. Modern developments of the capability approach continue to enrich the literature on development economics. For instance, Peter (2025) deepens the ethical dimensions of Sen's approach by placing human dignity at the center of social inequality analysis. He also warns that reductive poverty measurements based solely on income figures lose the philosophical essence of capability deprivation itself. In line with this, Miharsih (2026) expands this perspective into more empirical realms by examining the relationship between human development and inclusive growth in Indonesia, affirming that redistributive instruments like ZIS need to be evaluated not just by the amount of funds transferred but by how much they expand welfare for beneficiaries. At the operational level, Bakri (2026), through a systematic literature review, documents how access to finance in various forms, including microfinance and zakat, serves as a bridge from mere financial assistance to the expansion of sustainable capabilities for vulnerable groups, particularly female heads of households.

2.2 Neoclassical Growth Theory

The Neoclassical Growth Theory developed by Solow-Swan provides a framework to position GRDP as a representation of aggregate economic output in regions. In this framework, the accumulation of physical capital and technological growth play a major role in driving national output growth. This research develops this perspective by positioning ZIS as a form of social capital and alternative financial capital that has the potential to accelerate inclusive growth beyond conventional paths. However, as shown by Dollar & Kraay (2002), the impact of GRDP growth on the income of poor groups often experiences delays, justifying the use of lagged GRDP variables in this research model. It can be seen that the neoclassical growth framework has undergone significant theoretical deepening in facing the challenges of the 21st century. Carter & Vance (2026) reconceptualize the Solow-Swan model in the context of automation and artificial intelligence, showing that the economic alignment predicted by classical models can be hindered or even reversed when asset values focus on regions with high-quality human resources. Ramirez (2025) develops the Green Solow Model, integrating environmental costs into the production function, a highly relevant expansion for developing countries with dominant primary sectors, as seen in various provinces in Indonesia. Wijaya & Saputra (2026) test the neoclassical convergence hypothesis in the post-pandemic era and find that structural differences among provinces, particularly regarding access to capital and infrastructure, are actually widening, a finding that justifies the use of fixed effects to control for unobserved heterogeneity among provinces.

2.3 Pro-Poor Growth Theory

The Pro-Poor Growth Theory serves as a conceptual bridge linking GRDP (X2), Gini Index (X4), and Poverty (Y) in this research. This theory states that economic growth will only effectively reduce poverty if the level of income distribution inequality (Gini Index) is controlled. Ravallion (2001) demonstrates that the impact of growth on poverty heavily depends on the initial inequality condition, where higher inequality results in lower elasticity of poverty reduction to economic growth. In the context of Indonesia, with 34 provinces having highly diverse economic structures, this theory underpins why the Gini Index needs to be analyzed alongside GRDP as determinants of poverty reduction. The relevance of pro-poor growth in the increasingly varied economic context of Indonesia is evident. Mubarakah & Pimada (2024) in their research in Yogyakarta show that regional GRDP growth not accompanied by equitable income distribution fails to substantially reduce poverty, confirming Ravallion's thesis that the elasticity of growth to poverty is highly sensitive to initial inequality conditions. As noted by Arzaqi & Astuti (2024), this understanding is deepened by identifying the interrelationship among three aspects: unemployment, inequality, and poverty at the provincial level in Indonesia, where high unemployment rates not only directly impact poverty but also worsen the Gini Index, dulling the economic growth effects on poverty alleviation. Bakri (2026) expands this perspective into the realm of inclusive finance, emphasizing that access to financial services that are friendly to lower groups, including social instruments like zakat, is a prerequisite for growth to genuinely be pro-poor.

2.4 Okun's Law

Okun's Law connects the Open Unemployment Rate (OUR) (X3) with the loss of potential output, ultimately leading to structural poverty. When OUR rises, the loss of household income sources can decrease aggregate consumption and push more individuals below the poverty line. Arulampalam et al. (2001) further introduce the concept of scarring effects, explaining why past unemployment (lagged OUR) still impacts current poverty, as prolonged unemployment depreciates human capital permanently, reduces the bargaining power of job seekers, and traps individuals in a difficult-to-break poverty cycle. Recent studies reinforce the foundation of Okun's Law in the context of contemporary Indonesian economics. Padmono (2025) shows that post-pandemic, Indonesia's labor

market has undergone a structural transformation where OUR is not only an indicator of excess labor but also a reflection of mismatches between workforce skills and industry needs, a condition that intensifies pressure on structural poverty. Arzaqi & Astuti (2024) find that in provinces with OUR above the national average, income distribution inequality is consistently higher, indicating that unemployment acts as a mechanism reinforcing inequality rather than merely a consequence of weak macroeconomic conditions. Additionally, Imsar et al. (2023) document through their multidimensional analysis that in many provinces in Indonesia, conventional fiscal policies are less effective in reaching structurally unemployed groups, thus creating significant space for third-sector Islamic economics like productive zakat as a complement to social safety nets.

2.5 Mechanism of Islamic Social Finance Transmission

In its application, the transmission mechanism of Islamic social finance explains how ZIS transforms from mere short-term consumption into long-term productive capital. ZIS funds channeled in the form of consumptive zakat (relief zakat) have a direct impact on increasing basic consumption for beneficiaries and reducing the poverty gap in the short term (Beik *et al.*, 2016). Meanwhile, productive zakat manifested in the form of business capital assistance, skills training, and educational scholarships requires at least one program cycle before its impact on reducing headcount poverty ratio is measurable (Puskas BAZNAS, 2020). The process of transforming fund receipt into the establishment of micro-enterprises and sustainable income increases conceptually strengthens the need for the use of a one-period lag ($t-1$) for the ZIS variable in this research model. Several recent studies enrich the understanding of this transmission mechanism. Nurherlina (2024) documents the contribution of ZIS collection to national macroeconomic stability and wealth redistribution, a finding that positions ZIS not merely as an individualistic microeconomic instrument but as a relevant macro variable in econometric analysis. Huda (2022) explores optimal patterns of zakat management for poverty alleviation and identifies that the effectiveness of zakat is heavily determined by the quality of institutional governance, where capacity limitations become a major structural barrier that hampers the transmission of funds to tangible impacts on the ground. In line with this, Imsar et al. (2023) find that zakat funds interact significantly with state fiscal instruments (APBN) and the Human Development Index, emphasizing the position of ZIS as a complementary instrument rather than a substitute for conventional fiscal policies in multidimensional poverty alleviation efforts.

2.6 Scarring Effect of Unemployment and Savings Depletion

The Scarring Effect and Savings Depletion theories provide a logical justification for why the previous period's OUR (lag 1) affects poverty in the current year. When someone is unemployed in year $t-1$, they do not immediately fall into poverty because they still have savings or severance pay as a buffer (financial buffer). However, if unemployment persists, those savings will deplete, and assets must be liquidated. As a result, households that were initially not poor will fall below the poverty line in year t (Saunders, 2002). This mechanism emphasizes that measuring the impact of OUR on poverty is more valid using previous period data compared to the same period. Currently, this can be observed in Indonesia's labor market, confirming the concepts of scarring effect and savings depletion. Padmono (2025) shows that prolonged unemployment post-COVID-19 in Indonesia creates a cohort of workers who find it structurally difficult to return to the formal labor market, consistent with the thesis of human capital depreciation (Arulampalam *et al.*, 2001). Arzaqi & Astuti (2024) reinforce this finding by showing that regions experiencing spikes in OUR during crises tend to maintain higher levels of inequality even after macroeconomic recovery, indicating that the "scarring" of unemployment is not erased by aggregate growth alone. In the context of households, Mubarakah & Pimada (2024) highlight that areas with stronger access to Islamic social finance demonstrate better household resilience against unemployment shocks, suggesting that ZIS can function as a substitute for the financial buffer depleted due to savings depletion.

2.7 Concepts and Typology of Poverty in Research

Conceptually, poverty can be typologized into several approaches. First, absolute poverty, which refers to the inability of individuals to meet certain minimum basic needs expressed in a poverty line. Second, relative poverty, which defines poverty based on an individual's position relative to the income distribution of the surrounding community. Third, multidimensional poverty, which expands measurement to non-monetary dimensions such as education, health, and living standards, as developed from Amartya Sen's capability approach framework. This research adopts the typology of absolute monetary poverty as measured by the Central Statistics Agency through the basic needs approach. In this approach, poverty is viewed as the economic inability to meet basic food needs (equivalent to 2,100 kcal per capita per day) and non-food needs (housing, clothing, education, and health) measured from the expenditure side. Individuals are categorized as poor if their average monthly per capita expenditure is below the poverty line (Central Statistics Agency, 2024). Thus, the dependent variable in this research, namely the number of poor people in provinces, represents the monetary dimension of poverty (headcount) and does not include the multidimensional poverty dimension. This choice of monetary typology remains coherent with the

philosophical framework of the capability approach underlying the research, which posits that consumption expenditure is the most basic material prerequisite for capability recovery, thus making monetary indicators serve as an initial measurable proxy that is consistently available across provinces and over time, and can be compared within a panel data framework. The limitations of this measurement's non-monetary dimension coverage are acknowledged and noted as research limitations.

2.8 Development of Research Hypotheses on the Relationship Between ZIS and Poverty

In the realm of Islamic economics, zakat, infak, and sedekah (ZIS) are not merely rituals of worship but are instruments of redistribution that contain their own economic logic. Unlike taxes, which are coercive based on state authority, ZIS is rooted in the theological awareness of muzakki to purify wealth while fulfilling the rights of beneficiaries. This dual characteristic serves as both a divine obligation and a social mechanism that places ZIS in a unique position within the architecture of poverty alleviation in predominantly Muslim countries like Indonesia. Shirazi (2014) argues that if zakat and waqf are systematically integrated into poverty alleviation strategies, IDB member countries could substantially close the poverty gap. This argument is well-supported by Beik et al. (2016) through the CIBEST model, which proves that targeted zakat distribution reduces poverty in both material and spiritual dimensions. In the context of Indonesia, Khasandy & Badrudin (2019) find a significant negative effect of ZIS on poverty at the provincial level, while research by Suprayitno et al. (2017) confirms the relationship of Islamic social finance with macroeconomic variables in the framework of aggregate poverty reduction. Johari et al. (2015) add an important dimension that the effectiveness of zakat is heavily determined by the appropriateness of the distribution scheme, not just by the amount of funds collected.

However, this optimism needs to be balanced with clearer academic caution. Studies by Mubarokah & Pimada (2024) in Yogyakarta and Islami & Fitrianto (2023) find no significant effect of ZIS on poverty. The inconsistency in this case stems from two interconnected factors. First, the dominance of consumptive zakat oriented towards short-term direct assistance that alleviates rather than heals, compared to productive zakat that builds beneficiaries' capabilities sustainably. Second, there is a targeting effect, where zakat institutions rationally allocate more funds to areas with high poverty, leading to a spurious positive correlation in contemporary estimates that do not account for time lags. Furthermore, data from Puskas BAZNAS (2020) and research by Widiastuti & Robani (2021) underline that productive zakat in the form of business capital, skills training, and educational scholarships requires at least one program cycle before its impacts are captured in poverty statistics. The process of supporting micro-enterprises, skill maturation, and household income consolidation is not instantaneous. There is a demand for time that spans across budget years. This conceptual logic justifies, even necessitates, the use of a one-period lag transformation ($t-1$) for the ZIS variable in this research model. Based on this argumentation, the first hypothesis is formulated as follows:

H1: ZIS has a negative and significant effect on poverty in 34 provinces of Indonesia.

2.9 Relationship Between GRDP and Poverty

The question of the relationship between economic growth and poverty alleviation is one of the classic debates that has never truly been resolved in the economic literature. The central question is simple yet fundamental: does the expansion of economic output automatically trickle down to the lowest groups, or does growth actually widen the gap between the wealthy and the poor? Adams (2004) provides a relatively optimistic answer in his literature. By analyzing the elasticity of poverty to growth in several developing countries using panel data, he finds that every increase in GRDP is followed by a significant reduction in poverty. Dollar & Kraay (2002) strengthen this concept with the statement that became a classic reference: "growth is good for the poor," although they acknowledge significant variations between countries and periods. In the context of Indonesia, the Central Statistics Agency consistently reports a negative correlation between regional GRDP growth and provincial poverty levels, a pattern that seems to confirm the classical trickle-down mechanism. Unfortunately, the reality in Indonesia is not that simple. Fosu (2017) reminds us that what determines the impact of growth on poverty is not just its quantity but also its quality. Is the growth inclusive? Does it create productive jobs? Does it reach the outermost, frontier, and underdeveloped areas (3T)? In Indonesia, the phenomenon of the pro-poor growth paradox is clearly seen in Figure 3: GDP grows consistently around 5% per year, but poverty reduction only ranges from 0.2 to 0.5 percentage points per year. Some provinces, such as Papua Mountains, Central Papua, and East Nusa Tenggara, still grapple with double-digit poverty amidst reports of consistently positive national economic growth. The World Bank (2024) explains that the root of the problem lies in structural barriers such as inadequate infrastructure, educational access gaps, and the dominance of the informal sector, which slow the transmission of growth benefits to the lowest layers of society.

Furthermore, the impact of growth is not instantaneous. Investments made in year $t-1$ only yield production capacity expansion and labor absorption by the end of that year, and spillover effects to the income of lower groups are only detected in subsequent periods (Stock & Watson, 2024). In other words, today's GRDP explains tomorrow's

poverty, not today's poverty. This is the conceptual basis that justifies the use of lagged GRDP $t-1$ as a predictor of poverty, underpinning the use of lag data in this second hypothesis.

H2: GRDP has a negative and significant effect on poverty in 34 provinces of Indonesia.

2.10 Relationship Between Open Unemployment Rate and Poverty

Unemployment and poverty are two sides of the same coin; at least that is what Okun's Law teaches us. When the Open Unemployment Rate (OUR) rises, potential output in the economy is lost, and along with it, household income sources that form the foundation of livelihoods. This mechanism may seem simple on the surface, but it conceals interesting complexities when we closely examine how unemployment transmits its effects on poverty. Padmono (2025) finds that labor market instability significantly increases poverty levels in Indonesia, while Arzaqi & Astuti (2024) show that regions with high OUR tend to have wider income inequality. These findings are consistent with basic economic intuition, but they have not answered one important question: why does someone who is unemployed today not immediately fall into poverty today as well? The answer lies in the concepts of financial buffer and scarring effect. Saunders (2002) observes that when someone loses their job, they do not immediately plunge into poverty, at least not right away. Savings, severance pay, household assets, and family support act as financial cushions that delay the fall into poverty. However, if unemployment persists beyond the capacity of these buffers, savings deplete, assets must be liquidated, and households eventually cross the poverty line. This transition process from unemployment to poverty generally takes about one budget period, a temporality that is crucial to accommodate in empirical models.

Arulampalam et al. (2001) add a more troubling dimension through the concept of unemployment scarring. They prove that the experience of unemployment leaves "scars" on a person's career. Skills that have gone unused become obsolete, professional networks weaken, and the stigma of being a former unemployed person reduces bargaining power in the job market. As a result, individuals who have been unemployed have a higher probability of poverty in the future, even after they regain employment. This mechanism justifies the use of lagged OUR $t-1$, as last year's unemployment is not an event that ended last year but rather an economic trauma whose effects shadow households in the following years. Based on this argumentation, it serves as the foundation for this third hypothesis. H3: OUR has a positive and significant effect on poverty in 34 provinces of Indonesia.

2.11 Relationship Between Gini Index and Poverty

High economic growth is a necessary condition for a country to prosper its people, but it is not a sufficient condition for poverty alleviation. If the fruits of growth are concentrated among a handful of people at the top of the economic pyramid, then poverty reduction will be slow, even if GRDP grows in double digits. This is the essence of the argument formulated by Ravallion (2001) in his study, which later became a classic reference, stating that the level of initial inequality determines how much economic growth can reduce poverty. Bourguignon (2003) formalizes this idea through the framework of the poverty-growth-inequality triangle. In this framework, the elasticity of poverty reduction to economic growth decreases drastically as the Gini Index increases. The implications are quite clear: two regions with the same GRDP growth can produce very different trajectories of poverty reduction, depending on how the results of that growth are distributed. In the context of Indonesia, which has diverse economic structures across 34 provinces, as shown in Figure 2, which illustrates a gap of more than eight times between the poorest and richest provinces, this framework becomes increasingly relevant.

Several empirical studies confirm this pattern. Islami & Fitrianto (2023) found that the Gini Ratio significantly affects the depth of poverty in a decade-long analysis in Indonesia. Arzaqi & Astuti (2024) confirm this relationship at the provincial level, while Mubarakah & Pimada (2024) identify income distribution inequality as one of the main determinants of regional poverty in Yogyakarta Province. Interestingly, the persistent nature of structural inequality justifies the conceptual use of the lag $t-1$ for the Gini Index. Inequality formed in year $t-1$ creates barriers to entry that are difficult to penetrate in the short term; lower groups lack adequate access to credit for entrepreneurship, children from poor households enter schools with inferior quality education, and limited social capital locks in cross-generational vertical mobility. The accumulation of these barriers makes poverty a sticky phenomenon, where this year's economic stimulus will not immediately lift those who have long been trapped in the poverty cycle. Ravallion (2001) refers to this mechanism as self-perpetuating inequality, where failures in credit markets, educational segregation, and limited social capital reinforce each other. Based on this, it serves as the foundation for the fourth hypothesis of this research.

H4: The Gini Index has a positive and significant effect on poverty in 34 provinces of Indonesia.

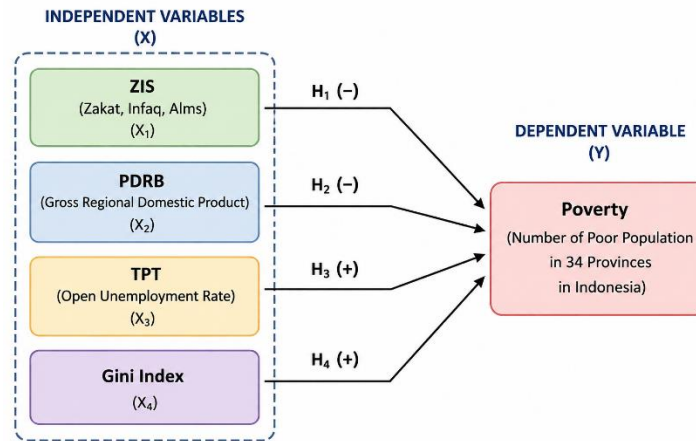


Figure 6. Research Framework

3 | METHOD

The population in this study consists of all provinces in Indonesia. The sample used includes 34 provinces that have been administratively consistent throughout the period from 2015 to 2025, excluding the four newly formed provinces in Papua in 2022 (South Papua, Central Papua, Mountain Papua, and Southwest Papua) to maintain a balanced panel. Thus, the initial number of observations is 34 provinces $\times$ 11 years = 374 observations. After applying a one-period lag transformation ($t-1$) on the independent variables, the effective dependent variable covers the period from 2016 to 2025, resulting in a maximum number of observations of 340 (34 provinces $\times$ 10 years); of this total, 338 observations are used in the analysis.

Table 1. Operational Definitions of Research Variables

Variable	Operational Definition	Unit	Source
Poverty (Y)	Number of poor people in province i in year t .	Thousands of people (ln)	BPS
ZIS (X1)	Amount of Zakat, Infak, and Sedekah funds distributed by BAZNAS in province i in year $t-1$.	Billion Rupiah (ln)	BAZNAS
GRDP (X2)	Gross Regional Domestic Product in province i in year $t-1$.	Billion Rupiah (ln)	BPS
OUR (X3)	Percentage of the workforce that is unemployed in province i in year $t-1$.	Percent (%)	BPS
Gini Index (X4)	Measure of income distribution inequality in province i in year $t-1$.	Index (0-1)	BPS

Source: Processed by the researcher, 2026.

The analysis method employed is panel data regression analysis, which combines time series data from 2015 to 2025 and cross-sectional data from 34 provinces in Indonesia. In panel data regression, there are three approaches to estimating the model: Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The selection of the best model is conducted through the Chow Test, Hausman Test, and Lagrange Multiplier (LM) Test. After the model is selected, classical assumption tests relevant to panel data are performed, including tests for normality, multicollinearity, heteroskedasticity, and autocorrelation. If there are violations of classical assumptions, particularly regarding heteroskedasticity and autocorrelation, the model is estimated using the Robust Variance Covariance Estimator (Robust VCE) or cluster-robust standard errors. This step is taken following the recommendations of Wooldridge (2023) and Angrist & Pischke (2025) to ensure that statistical inference remains valid and consistent despite the presence of an imperfect error structure. Furthermore, hypothesis testing is conducted through simultaneous testing (F Test), partial testing (t Test), and evaluating the predictive power of the model through the coefficient of determination (R^2) as developed in modern econometric literature (Stock & Watson, 2024).

4 | RESULTS AND DISCUSSION

4.1 Results

4.1.1 Descriptive Statistics

Descriptive statistical analysis is conducted to provide an overview of the characteristics of the data from all research variables, with a total of 338 observations from 34 provinces over the analysis period of 2016–2025 (from a maximum of 340 observations after lag transformation on the independent variables). A summary of the descriptive statistics is presented in Table 2.

Table 2. Descriptive Statistics of Research Variables

Variable	N	Mean	Std. Dev.	Min	Max
Poverty (people)	338	582,639.87	544,203.01	39,689	4,789,120
ZIS (billion Rp)	338	412.79	1,226.02	1.88	12,854.22
GRDP (trillion Rp)	338	500.53	724.91	26.64	3,926.15
OUR (%)	338	5.08	1.75	1.40	10.95
Gini Index	338	0.35	0.043	0.222	0.449

Source: Stata Output, processed by the researcher (2026).

Table 2 shows significant heterogeneity among provinces. The number of poor people ranges from approximately 39.7 thousand to 4.79 million, while the distribution of ZIS ranges from Rp1.88 billion to Rp12.85 trillion, and GRDP ranges from Rp26.64 trillion to Rp3,926 trillion. The standard deviation of ZIS, which is nearly three times its mean, indicates a highly unequal distribution concentrated in a small number of provinces. This wide range and distribution inequality justify the use of natural logarithm transformations on the variables of Poverty, ZIS, and GRDP, while also reinforcing the justification for a fixed effects panel data approach to accommodate differences in characteristics among provinces.

4.1.2 Selection of the Panel Data Regression Model

The selection of the best model is conducted in stages through the Chow Test and Hausman Test. The Chow Test compares the Common Effect Model (CEM) with the Fixed Effect Model (FEM) by testing the significance of individual province effects. The FEM estimation results yield an F-statistic for the hypothesis that all individual effects are equal to zero of $F(33, 300) = 2.50$ with $\text{Prob} > F = 0.0000$. Since the probability value is less than $\alpha = 0.05$, H_0 is rejected, indicating significant individual province effects, making FEM more appropriate than CEM. Next, the Hausman Test compares FEM with the Random Effect Model (REM). The testing results yield a chi-square statistic of $\chi^2(4) = 40.95$ with $\text{Prob} > \chi^2 = 0.0000 < 0.05$, leading to the rejection of H_0 and confirming that the consistent model is FEM. Since both the Chow Test and Hausman Test point to FEM, the Lagrange Multiplier Test is no longer necessary. A summary of the model selection results is presented in Table 3.

Table 3. Summary of Model Selection Results

Test	Statistic	Prob.	Decision	Model
Chow (CEM vs FEM)	$F(33, 300) = 2.50$	0.0000	Reject H_0	FEM
Hausman (FEM vs REM)	$\chi^2(4) = 40.95$	0.0000	Reject H_0	FEM

Source: Stata Output, processed by the researcher (2026).

4.1.3 Classical Assumption Tests

The normality test of residuals using the Shapiro-Wilk test yields a W statistic of 0.627 with $\text{Prob} > z = 0.0000 < 0.05$ (Table 4), indicating that the residuals are not normally distributed. However, with a large number of observations ($n = 338$), the Central Limit Theorem ensures that the sampling distribution of the coefficient estimators approaches normality, thus making the statistical inference asymptotically valid (Wooldridge, 2023; Stock & Watson, 2024). The non-normality of the residuals is noted as one of the limitations of the study.

Table 4. Results of Residual Normality Test (Shapiro-Wilk)

Variable	Obs (n)	W Statistic	Prob > z	Description
Residual (e)	338	0.627	0.0000	Not normally distributed (Prob < 0.05)

Source: Stata Output, processed by the researcher (2026).

The multicollinearity test using the Variance Inflation Factor (VIF) shows that all independent variables have VIF values well below the threshold of 10, with an average VIF of 2.04 (Table 5). Thus, the model is free from multicollinearity issues, which also indicates that the lag transformation has helped mitigate correlations among independent variables.

Table 5. Results of Multicollinearity Test (VIF)

Variable	VIF	1/VIF	Description
ln GRDP (t-1)	3.05	0.328	Free of multicollinearity
ln ZIS (t-1)	2.91	0.343	Free of multicollinearity
OUR (t-1)	1.15	0.870	Free of multicollinearity
Gini Index (t-1)	1.04	0.961	Free of multicollinearity
Mean VIF	2.04	-	Free of multicollinearity

Source: Stata Output, processed by the researcher (2026).

The heteroskedasticity test on the panel data using the Modified Wald test for groupwise heteroskedasticity has the null hypothesis of homoskedasticity across groups (uniform residual variance across provinces). The results of the test are presented in Table 6.

Table 6. Results of Heteroskedasticity Test (Modified Wald Test for Groupwise Heteroskedasticity)

Test Statistic	Value	Prob	Criteria ($\alpha=5\%$)	Description
χ^2 (34)	103,761.78	0.0000	Prob < 0.05	H_0 rejected
Conclusion	-	-	-	There is heteroskedasticity among provinces

Source: Stata Output, processed by the researcher (2026).

Based on Table 6, the statistic $\chi^2(34) = 103,761.78$ with Prob > $\chi^2 = 0.0000 < 0.05$ leads to the rejection of H_0 . This means that the residual variance significantly differs across provinces, indicating the presence of heteroskedasticity among groups. This finding is indeed consistent with the heterogeneous characteristics of the cross-provincial panel data, as seen from the wide range of variable values in Table 2. Next, the autocorrelation test on the panel data using the Wooldridge test for autocorrelation in panel data has the null hypothesis that there is no first-order autocorrelation (AR-1) in the residuals. A summary of the testing results is presented in Table 7.

Table 7. Results of Autocorrelation Test (Wooldridge Test for Autocorrelation in Panel Data)

Test Statistic	Value	Prob	Criteria ($\alpha=5\%$)	Description
F (1, 33)	17,216.31	0.0000	Prob < 0.05	H_0 rejected
Conclusion	-	-	-	There is first-order autocorrelation (AR-1)

Source: Stata Output, processed by the researcher (2026).

Based on Table 7, the statistic $F(1, 33) = 17,216.31$ with Prob > F = 0.0000 < 0.05 results in the rejection of H_0 . This indicates that there is first-order autocorrelation in the model's residuals, suggesting that the poverty condition of a province in the current year is correlated with its poverty condition in the previous year. This finding is substantively reasonable because poverty is a persistent phenomenon (state dependence) and does not change abruptly from year to year. The overall summary of the classical assumption test results shows two simultaneous violations: heteroskedasticity among groups (Table 6) and first-order autocorrelation (Table 7). In the context of panel data regression, these two violations do not cause the Fixed Effect Model (FEM) coefficient estimators to be biased; however, they render the conventional standard errors invalid (underestimated or overestimated), meaning that t-tests and F-tests could provide misleading conclusions if classical OLS standard errors are still used.

As a remedy for these classical assumption violations, the final model in this study is estimated using the Robust Variance Covariance Estimator (Robust VCE) in the form of cluster-robust standard errors at the provincial level (using the option `vce(cluster id_prov)` in Stata). This approach is chosen for three main considerations. First, Robust VCE simultaneously corrects standard errors for both heteroskedasticity and intra-cluster (provincial) autocorrelation, eliminating the need to apply two separate remedies. Second, Robust VCE does not alter the unbiased and consistent coefficient estimates of FEM; rather, it only corrects the variance-covariance matrix, making statistical inference (t-tests, F-tests, and confidence intervals) valid. Third, this approach is standard practice in modern econometric literature for short-wide panel data (small T, large N), as recommended by Wooldridge (2023) and Angrist & Pischke (2025), especially when the units of observation have heterogeneous characteristics, such as the provinces in Indonesia. Thus, all statistical inferences in the final model (Table 8) are robust against the classical assumption violations found.

2.1.4 Hypothesis Testing

The simultaneous test (F Test) yields $F(4, 33) = 6.19$ with Prob > F = 0.0008 < 0.05, indicating that together, ZIS, GRDP, TPT, and the previous period's Gini Index significantly affect the number of poor people. The within R^2 value of 0.1817 shows that 18.17% of the variation in the number of poor people within each province over time can be explained by the four independent variables, while the remainder is explained by other factors outside the model, such as government

social protection programs, inflation, and structural characteristics of the regions. The results of the partial test (t Test) are summarized as follows. First, $\ln ZIS (t-1)$ has a coefficient of 0.2378 with a p-value of $0.000 < 0.05$, indicating that ZIS has a positive and significant effect on the number of poor people; since the research hypothesis posits a negative direction, H1 is rejected. In terms of elasticity, a 1% increase in ZIS distribution in the previous year is associated with a 0.238% higher number of poor people in the current year, *ceteris paribus*. Second, $\ln GRDP (t-1)$ has a coefficient of -0.0016 with a p-value of $0.988 > 0.05$, indicating that GRDP has a negative but insignificant effect, leading to the rejection of H2. Third, $TPT (t-1)$ has a coefficient of -0.0198 with a p-value of $0.495 > 0.05$, indicating that TPT does not have a significant effect, and H3 is rejected. Fourth, the Gini Index ($t-1$) has a coefficient of 0.8970 with a p-value of $0.319 > 0.05$; its positive direction aligns with theory, but since it is not significant, H4 is rejected. The interpretation of these findings is elaborated in the Discussion section.

4.2 Discussion

Within the framework of Islamic Social Finance, Zakat, Infak, and Sedekah are positioned as redistribution instruments that transfer some wealth from the capable group (*muzakki*) to the vulnerable group (*mustahik*). Theoretically, this transfer is expected to reduce the number of poor people through two complementary pathways: fulfilling basic needs in the short term and strengthening productive capabilities in the medium term. Based on this logic, the research hypothesis (H1) posits that an increase in ZIS distribution in one period will decrease the number of poor people in the following period, thus the expected direction of the effect is negative.

Second, the distribution pattern on the ground is dominated by charitable-consumptive programs, so its impact on the poverty line is indeed limited. Official reports from BAZNAS note that humanitarian fields are the largest distribution area, with the poor and destitute as the most frequent recipients, reaching around Rp8.65 trillion in 2024, mostly in the form of consumptive aid to sustain life, while the economic or productive empowerment fields rank much lower (BAZNAS, 2024). This orientation aligns with the preferences of *muzakki*, who prefer humanitarian programs (48.9%) over productive economic programs (12.2%) (Puskas BAZNAS, 2022), as summarized in Table 9. From the perspective of the Capability Approach (Amartya Sen), consumptive aid does raise the utility and purchasing power of *mustahik* in the short term, but it does not create productive capabilities in the form of business capital, skills, and access to economic opportunities needed for *mustahik* to truly escape poverty (Peter, 2025; Bakri, 2026). As a result, aid recipients remain below the poverty line in the following year and continue to be counted as poor in the headcount measure (P0), which is the dependent variable of this study. Third, the scale of ZIS is too small to move the aggregate poverty figures. National ZIS collection of around Rp41 trillion per year is still far below the estimated potential of zakat, which reaches Rp327 trillion, and only about 8% of the government's social protection budget, which amounts to Rp496.8 trillion in 2024 (BAZNAS, 2024; Ministry of Finance, 2025).

As an illustration, if all these funds were distributed evenly among 25.22 million poor people, the value would only be around Rp1.6 million per person per year or about Rp136 thousand per person per month, which is less than a quarter of the poverty line in March 2024, which is Rp582,932 per capita per month (Central Statistics Agency, 2024). This means that even in the most ideal scenario, arithmetically, ZIS cannot cover the consumption deficit of *mustahik* to surpass the poverty line. Therefore, the dynamics of the number of poor people in provinces are more driven by government fiscal instruments, while ZIS stands as a complementary safety net, not a substitute (Imsar *et al.*, 2023).

Aggregate evidence reinforces these three facts. The impact of ZIS empirically more strongly suppresses the dimensions of depth and severity of poverty rather than the number of poor people: nationally, the Poverty Depth Index (P1) fell from 1.364 in September 2024 to 1.290 in September 2025, and the Poverty Severity Index (P2) dropped from 0.322 to 0.303 during the same period (Central Statistics Agency, 2025), while the decrease in the number of poor people (P0) occurs much more slowly. This pattern aligns with findings from Beik *et al.* (2016) and Muttaqin & Safitri (2021), which indicate that ZIS effectively reduces the depth and severity indices of poverty, although it does not necessarily reduce the absolute number of poor people. Thus, the econometric results, BAZNAS distribution data, and BPS poverty indicators point in the same direction: ZIS works, but it works on dimensions not measured by the headcount.

The series of facts above leads to one interpretation that most accurately reflects the reality on the ground: in practice today, ZIS functions as a palliative instrument, not a curative one. The term palliative is borrowed from the medical field, referring to actions that relieve symptoms and suffering without curing the underlying disease. In the context of poverty, the symptoms are daily consumption deficits, such as food shortages, inability to purchase medicine, and the risk of children dropping out of school; while the disease is the structure that gives rise to poverty itself, namely the absence of productive assets, low skills and education, limited infrastructure and market access, and vulnerability to price shocks. ZIS distributed in the form of consumptive aid directly addresses these symptoms: it prevents *mustahik* from falling deeper into poverty, but does not change the structural position that made them poor in the first place.

The statistical consequences are evident in the differences in poverty measures. The palliative effect is captured in the Depth Index (P1) and Severity Index (P2) of poverty, which are sensitive to changes in consumption below the poverty line, but not captured in the headcount measure (P0), which only changes when *mustahik*'s consumption truly exceeds the poverty line. A *mustahik* whose expenditure rises from Rp400 thousand to Rp500 thousand per capita per month

clearly experiences a real improvement in welfare, yet remains classified as poor because they are still below the line of Rp582,932. This is the fundamental reason why the ZIS variable does not show a negative sign in models that use the number of poor people as the dependent variable: the instrument works, but it works on dimensions not measured by the dependent variable of this study. The palliative interpretation also explains why the role of ZIS is temporary and recurring. Consumptive aid is exhausted in one consumption cycle, so the same mustahik needs assistance again in the following year. Without a transformation towards productive zakat in the form of business capital, skills training, micro-enterprise mentoring, and market access, ZIS will continue to serve as a painkiller that alleviates suffering without curing the underlying causes of poverty. This interpretation does not diminish the value of ZIS. The palliative function remains important and holds high humanitarian value, especially for asnaf who are no longer physically productive, such as the elderly and persons with disabilities, and the findings of this study affirm that ZIS has succeeded in preventing the poor from further decline. However, the hope that ZIS in its current form will reduce the aggregate number of poor people, as formulated in the research hypothesis, is unrealistic as long as its distribution patterns, collection scales, and program designs have not shifted from charitable to empowering.

This section addresses the paradox displayed in Figure 1: national ZIS collection has grown about elevenfold throughout the research period and its distribution continues to expand, yet the number of poor people has only decreased slowly and remains recorded at 25.22 million or 9.03% of the population as of March 2024 (Central Statistics Agency, 2024). The estimation results and field data described provide five interrelated explanations, and all five should be read as a unity, not as standalone reasons. First, there is a scale imbalance between the instrument and the problem it faces. National ZIS collection of around Rp41 trillion per year is only about 12% of the estimated national zakat potential of Rp327 trillion, and it does not even reach a quarter of the poverty line when distributed to all poor people (BAZNAS, 2024; Central Statistics Agency, 2024). Second, the limited funds are distributed in a form that does not change the productive capacity of the recipients. Consumptive aid is exhausted in one cycle, so the same mustahik becomes a recipient again the following year and remains counted as poor. This condition is exacerbated by the fragmentation of zakat institutions and the lack of integration of mustahik data with the government's social assistance recipient database, which opens up opportunities for overlapping targeting while leaving groups of poor people unserved.

Fifth, the poverty line is a moving target. The national poverty line rose by about 5.9% to Rp582,932 per capita per month in March 2024, with about 74% of its components being food commodities whose prices are easily volatile (Central Statistics Agency, 2024). When the line moves upward, near-poor households just above the line are easily pushed back down, replacing those who manage to escape, resulting in the number of poor people decreasing much more slowly than expected. The combination of these five factors explains why the rapid growth of ZIS collection and statistically significant coefficients do not correspond to the reality of still high poverty levels on the ground: a small-scale palliative instrument is facing a large-scale structural disease.

In traditional Neoclassical Growth Theory, economic growth is believed to be the main engine of poverty alleviation through the trickle-down effect: aggregate output expansion is assumed to trickle down to all layers of society through job creation and income increases, thus reducing poverty (Carter & Vance, 2026; Wijaya & Saputra, 2026). Following this logic, the research hypothesis (H2) posits that an increase in GRDP in one period will decrease the number of poor people in the following period, thus the expected direction of the effect is negative. First, economic growth in Indonesia has not been inclusive enough to produce a pro-poor growth paradox: output grows, but the benefits are not proportionally enjoyed by the lowest groups. As emphasized by Fosu (2017), what determines the effectiveness of growth in reducing poverty is its quality, not just its quantity. Structural barriers such as infrastructure limitations, educational access gaps, and the dominance of the informal sector hinder the transmission of growth benefits to the poor (World Bank, 2024), resulting in low poverty elasticity to growth (Adams, 2004). Second, within the fixed effects framework, the GRDP coefficient is identified from variations within provinces over time. The observation period of this study includes the contraction of the pandemic in 2020 and the subsequent recovery, where the decline in GRDP was accompanied by a massive expansion of social assistance that kept poverty from rising. As a result, the short-term relationship between growth and poverty becomes blurred and difficult to detect statistically. This finding aligns with Mubarakah & Pimada (2024), who also found no substantial GRDP effect on poverty alleviation when income distribution does not improve.

Indonesia's macroeconomic structure reinforces the above two arguments. BPS data for 2024 indicates that capital-intensive sectors contribute significant added value but absorb little labor from the lower class: the mining and quarrying sector contributes about 9.3% of GDP while recording the highest average worker wages of around Rp5.23 million per month, while the manufacturing sector, the largest contributor to GDP with a share of about 19%, only absorbs around 13.8% of the workforce (Central Statistics Agency, 2025). Conversely, the agricultural sector, which employs the majority of workers, accounting for about 28.2% of the workforce, contributes only about 11.6% to GDP. The disparity between the concentration of added value and labor absorption is what makes GRDP expansion not automatically translate into income increases for the lower groups, resulting in a weak and insignificant statistical footprint of GRDP on the number of poor people in the short term.

Theoretically, the relationship between unemployment and poverty is explained by Okun's Law and labor market logic: high unemployment eliminates household income sources and pushes them below the poverty line (Arulampalam

et al., 2001). Based on this logic, the research hypothesis (H3) posits that an increase in the Open Unemployment Rate (TPT) in one period will increase the number of poor people in the following period, thus the expected direction of the effect is positive. The estimation results show that the previous period's TPT does not have a significant effect on the number of poor people, even with a negative coefficient direction that contradicts Okun's Law, leading to the rejection of H3. Two structural explanations underlie this seemingly counterintuitive finding. Second, as explained through the mechanisms of financial buffer and savings depletion (Saunders, 2002), the transition from unemployment to poverty takes time and heavily depends on household financial buffer ownership. The effects become heterogeneous among individuals and provinces and are difficult to capture at the aggregate provincial level with a one-year lag. This finding differs from Padmono (2025), who found the effect of labor market instability on poverty, but this difference can be explained by differences in the poverty measures and units of analysis used. BPS employment data supports both explanations. Regarding the first argument, it is the low-educated group that is most vulnerable to poverty that records the lowest unemployment: as of August 2025, the TPT for those with primary education or lower is only 2.30%, far below that of vocational school graduates (8.63%), high school graduates (6.88%), and college graduates (5.39%) (Central Statistics Agency, 2025). This means that TPT is more borne by educated unemployment, who are generally still financially supported by their families, rather than by the poorest groups.

5 | CONCLUSIONS AND FUTURE WORK

This study analyzes the impact of Zakat, Infak, and Sedekah (ZIS), Gross Regional Domestic Product (GRDP), Open Unemployment Rate (TPT), and Gini Index on the number of poor people in 34 provinces of Indonesia from 2015 to 2025. Using panel data regression with a one-period lag transformation on all independent variables ($n = 338$), the Fixed Effect Model was selected based on Chow and Hausman tests. The results show that simultaneously, the four variables significantly affect the number of poor people, explaining 18.17% of within variation. However, only ZIS has a significant positive effect, leading to the rejection of H1, while GRDP, TPT, and Gini Index do not significantly affect poverty, resulting in the rejection of H2, H3, and H4. This positive association does not imply that ZIS increases poverty but reflects three factual conditions: ZIS distribution follows the poverty map, is dominated by consumptive aid, and is small compared to needs and social protection budgets. Thus, ZIS functions as a palliative instrument, reducing poverty depth and severity without addressing structural causes. The study reveals why ZIS collection continues to grow while poverty remains high. The scale of ZIS is insufficient compared to the problem, its consumptive distribution leads to recurring aid needs, and poverty is structural. Furthermore, economic growth has not been inclusive, and the poverty line is a moving target. Limitations include non-normal residuals and a focus on absolute poverty measures. Future research should consider integrating social assistance data and exploring alternative poverty measures. For BAZNAS and the government, gradual expansion of productive zakat is recommended to optimize ZIS's role in poverty alleviation.

REFERENCES

- Adams Jr, R. H. (2004). Economic growth, inequality and poverty: estimating the growth elasticity of poverty. *World development*, 32(12), 1989-2014. <https://doi.org/10.1016/j.worlddev.2004.08.006>
- Angrist, J. D., & Pischke, J. S. (2014). *Mastering'metrics: The path from cause to effect*. Princeton university press.
- Arulampalam, W., Gregg, P., & Gregory, M. (2001). Unemployment scarring. *The Economic Journal*, 111(475), F577-F584.
- Badan Pusat Statistik. (2024). *Profil kemiskinan di Indonesia Maret 2024*.
- Bakri, A. N., herawati, F., & samsir, aziza. (2026). From Financial Access to Capability Expansion: A Structured Systematic Literature Review on Women, Microfinance, and Poverty Reduction. *Al-Kharaj: Journal of Islamic Economic and Business*, 8(2). <https://doi.org/10.24256/kharaj.v8i2.10106>
- Beik, I. S., & Arsyianti, L. D. (2016). Measuring zakat impact on poverty and welfare using CIBEST model. *Journal of Islamic Monetary Economics and Finance*, 1(2), 141-160. <https://doi.org/10.21098/jimf.v1i2.524>.
- Bourguignon, F. (2003). The growth elasticity of poverty reduction: explaining heterogeneity across countries and time periods. *Inequality and growth: Theory and policy implications*, 1(1), 1-26.

- Carter, J., & Vance, L. (2026). Revisiting the neoclassical growth model in the age of artificial intelligence and automation. *Journal of Macroeconomics and Digital Policy*, 8(1).
- Dollar, D., & Kraay, A. (2002). Growth is good for the poor. *Journal of Economic Growth*, 7(3), 195–225.
- Fosu, A. K. (2017). Growth, inequality, and poverty reduction in developing countries: Recent global evidence. *Research in Economics*, 7(2), 306–336.
- Huda, N., A. D., A. K. M., M. Y., & R. N. (2022). Optimization of zakat management for poverty alleviation. *International Journal of Islamic Economics*.
- Imsar, I., Sitompul, F. A., & Nasution, J. (2023). Pengaruh dana zakat, pembiayaan syariah, anggaran penerimaan dan belanja negara (APBN) terhadap tingkat kemiskinan dengan indeks pembangunan manusia sebagai variabel intervening. *OIKONOMIKA: Jurnal Kajian Ekonomi Dan Keuangan Syariah*, 4(1), 1–13. <https://doi.org/10.53491/oikonomika.v4i1.557>
- Islami, & Fitrianto, A. R. (2023). Pengaruh penyaluran dana ZIS, inflasi, dan gini ratio terhadap tingkat kedalaman kemiskinan satu dekade. *Jurnal Ilmiah Ekonomi Islam*, 9(1), 1–13.
- Johari, F., Mohd Ali, A. F., & Ab. Aziz, M. R. (2015). The role of zakat in mending the shortfall in the poverty line income. *Journal of Islamic Accounting and Business Research*, 6(2), 175–191.
- Khasandy, E. A., & Badrudin, R. (2019). The influence of zakat, macroeconomic variables and provincial minimum wage on poverty in Indonesia. *Jurnal Ekonomi & Keuangan Islam*, 5(1), 10–19.
- Miharsih, A. (2026). The relationship between human development and inclusive economic growth. *Journal of Regional Economics Indonesia*.
- Mubarokah, M. N., & Pimada, L. M. (2024). Pengaruh penyaluran zakat, PDRB dan pendidikan terhadap pengentasan kemiskinan di provinsi Yogyakarta tahun 2016–2022. *Jurnal Ilmiah Ekonomi Islam*, 10(3), 2580–2590.
- Muttaqin, & Safitri. (2021). Analisis efektivitas zakat, infak, dan sedekah (ZIS) dalam mengurangi indeks kedalaman dan keparahan kemiskinan. *Al-Tijary: Jurnal Ekonomi Dan Bisnis Islam*, 6.
- Nasional, B. A. Z. (2023). Outlook Zakat Indonesia 2023. *Jakarta: Puskas BAZNAS*.
- Nurherlina. (2024). Analisis dampak penghimpunan zakat, infak, dan sedekah (ZIS) terhadap stabilitas makroekonomi dan redistribusi kekayaan. *Jurnal Ilmiah Ekonomi Islam*, 10(1).
- Padmono, O. A. D. (2025). Analisis pengaruh kondisi ekonomi dan ketidakstabilan pasar kerja terhadap tingkat kemiskinan. *Jurnal Ekonomi Dan Kebijakan Publik*.
- Peter, O. M. (2025). Human dignity, social inequality, and the capability approach in Amartya Sen's philosophy. *Journal of Leadership and Development*, 1(3).
- Puskas BAZNAS. (2020). *Laporan Indeks Pendayagunaan Zakat (IPZ) 2020*.
- Ramirez, M. G. (2025). Green Solow model: Evaluating sustainable growth pathways in developing economies. *Environmental and Resource Economics Review*, 14(4).
- Ravallion, M. (2001). Growth, inequality and poverty: Looking beyond averages. *World Development*, 29(11), 1803–1815.
- Saunders, P. (2002). The direct and indirect effects of unemployment on poverty and inequality. *Australian Journal of Labour Economics*, 5(4), 507–529.
- Simalango, M., & Setiawati, R. I. S. (2024). Analisis Faktor yang Mempengaruhi Ketimpangan Pendapatan di Kawasan Gerbangkertosusila. *Jambura Economic Education Journal*, 6(2), 433–442.

<https://doi.org/10.37479/jeej.v6i2.24911>

Stock, J. H., & Watson, M. W. (2024). *Introduction to econometrics* (5th ed.). Pearson.

Suprayitno, E., Aslam, M., & Harun, A. (2017). Zakat and macroeconomic variables in Malaysia. *Journal of Islamic Accounting and Business Research*, 8(3), 293–313.

Wibowo, A. A. (2023). Pengaruh distribusi dana ZIS, TPT dan IPM terhadap tingkat kemiskinan di DIY periode 2016–2022. *UIN Syarif Hidayatullah*.

Widiastuti, T., & Robani, A. et al. (2021). Determining the efficiency of zakat institutions in Indonesia. *Journal of Islamic Marketing*.

Wijaya, H., & Saputra, A. (2026). Analisis konvergensi pertumbuhan ekonomi regional: Pengujian hipotesis neoklasik di era pasca-pandemi. *Jurnal Ekonomi Dan Pembangunan Indonesia*.

Wooldridge, J. M. (2023). *Introductory econometrics: A modern approach* (8th ed.). Cengage Learning.

World Bank. (2024). *Poverty and shared prosperity 2024: Correcting course*.

How to cite this article: Laksana, R. B., & Pimada, L. M. (2026). The Impact of Zakat, Infak, and Sedekah Distribution, Gross Regional Domestic Product, Open Unemployment Rate, and Gini Index on Poverty in 34 Provinces of Indonesia from 2015 to 2025. *Indonesian Journal Economic Review (IJER)*, 6(3), 1168–1183. <https://doi.org/10.59431/ijer.v6i3.942>.