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Original Article

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Can Government Expenditure and Investment Drive Poverty Alleviation in Aceh Through Economic Growth?

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Abstract

Poverty continues to be a significant challenge in economic development, attracting widespread attention globally. In response, various initiatives are being implemented to reduce poverty. This study explores the indirect effects of investment and government expenditure on poverty alleviation through economic growth in Aceh Province. Using quantitative methods, including path analysis and multiple panel regression models, and drawing on data from 23 districts and cities in Aceh, the findings reveal that investment and government expenditure have direct, positive, and statistically significant effects on economic growth. However, these variables do not have a direct impact on poverty levels. Specifically, government expenditure is negatively and significantly correlated with poverty, while investment shows a negative but statistically insignificant relationship. Economic growth also has a positive, yet statistically insignificant, relationship with poverty. Additionally, the analysis shows that economic growth does not mediate the effect of investment and government expenditure on poverty in Aceh. These results highlight that achieving high growth rates and large investment volumes alone is insufficient. It is essential to focus on the quality of growth, emphasizing creating a multiplier effect, fostering inclusive investment, improving infrastructure, and investing in human capital. Such efforts can ensure that economic growth effectively contributes to poverty reduction.

1. Introduction

Poverty remains one of the most significant global challenges (United Nations, 2016). Approximately 10 percent of the world's population lives in extreme poverty (Concern Worldwide, 2022). Various factors contribute to poverty, including insufficient government attention, population pressure, conflict, lack of fertile land, drought, and regional topography. Governments undertake various efforts to reduce poverty rates. One of the key roles of the government in poverty alleviation is through allocative policies, which involve developing effective budget allocation strategies that can stimulate economic growth to reduce poverty (Miar & Yunani, 2020).

In the short term, government spending has been shown to reduce poverty rates in several countries, such as Nigeria (Chude et al., 2019). The World Bank defines poverty as a pronounced deprivation of well-being, and poor people as those who do not have sufficient income or consumption to place them above the minimum threshold (World Bank, 2020). In Indonesia, poverty is a critical issue not only because of its increasing tendency but also due to its consequences, which extend beyond the economic sphere to include social problems and domestic political instability. The effects of poverty are not limited to societal misery but can also exacerbate difficulties in people's lives, leading to hunger, ignorance, and other related impacts.

Currently, the poverty rate in Indonesia stands at 9.54 percent, or 26.16 million people, out of a total population of 272.6825 million across 38 provinces. Aceh, one of Indonesia's provinces, is identified as the poorest province in Sumatra, with a poverty rate of 14.64 percent, or 806.82 thousand people, out of a total population of 5.459114 million. This figure is significantly higher than the national poverty rate of 9.54 percent.

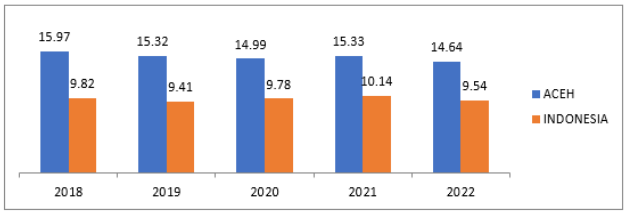

Figure 1. Percentage of Poor Population in Aceh and Indonesia (2018-2022)

Figure 1 shows that the percentage of Aceh's poor population is relatively higher than the national average. Nationally, the percentage of the poor population has decreased from 9.82 percent in 2018 to 9.54 percent in 2022, or approximately 26.16116 million people spread across 34 provinces. In Aceh, the percentage of the poor population has fluctuated, increasing in 2021 to 834.24 thousand people. These individuals are distributed across the regencies and cities within the Province of Aceh. The regency with the highest number of poor residents is North Aceh Regency, with 109.49 thousand people, while the area with the fewest poor residents is Sabang City, with 5.33 thousand people. The percentage and number of poor residents in the regencies/cities of Aceh Province are shown in Figure 2.

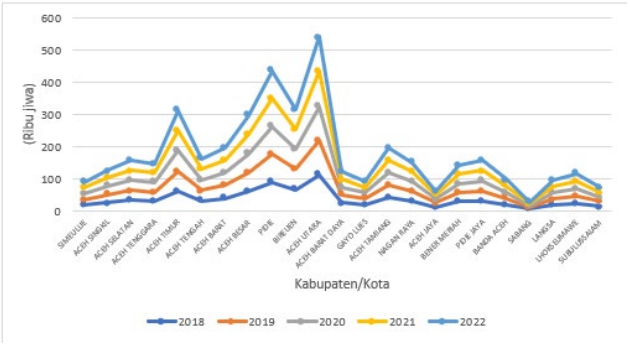

Figure 2. Number of Poor Population in Regencies/Cities in Aceh Province (2018-2022)

The poverty situation in the Province of Aceh is primarily due to the insufficient availability of jobs compared to the number of people seeking employment, leading to high unemployment. Additional contributing factors include the lack of preparedness among individuals in Aceh to embrace progress, the social structure of the Acehnese society, and low levels of investment in the province (Andiny & Mandasari, 2017). Poverty arises from the inability of a segment of the population to sustain a standard of living deemed humane. This condition is exacerbated by the uneven distribution of income and the varied responses of different income groups to poverty alleviation policies. Poverty is a multidimensional issue involving cause-and-effect relationships, preferences, values, and politics (Purnama, 2016).

Economic growth is a crucial factor influencing poverty. High economic growth and gains across all business sectors are essential for reducing poverty. Therefore, policies aimed at poverty reduction must focus on enhancing economic growth. In other words, accelerating economic growth is necessary to reduce poverty (Purnama, 2017).

Economic growth is an indicator used to assess the economic development of a region. In developing countries like Indonesia, economic growth is often accompanied by increased population below the poverty line (Jonnaidi, 2012). Regional development involves the management of resources and potential by the government and its citizens, in collaboration with the private sector, to create new job opportunities and stimulate local economic growth (Pratama & Utama, 2019). Economic growth can be defined as the expansion of economic activities that increase the production of goods and services within a society (Sukirno, 2016).

The measurement of economic growth achieved by a country is conducted by examining the development of the national income, which is the sum of consumption, investment, government expenditure, and net exports (Sukirno, 2011). Economic growth is influenced by various macroeconomic variables such as capital, labor, foreign investment, and investment in human resources (Rahman & Alam, 2021; Windasari et al., 2021). If all these sources of economic growth are fulfilled, the economy will remain stable.

The Province of Aceh comprises 23 regencies/cities, each with distinct characteristics. Although Aceh's economic growth rate has increased, it has not ensured equitable development and welfare for the population, as evidenced by the high percentage of poor residents (Purba, 2020). Income inequality among the regencies/cities needs to be addressed to enhance the economy (Ginting & Dewi, 2019). Economic development indicates economic growth and reflects economic activity during a specific period as community income. The following Figure 3 presents the economic growth rate of Aceh Province and nationally (Indonesia) over the period 2018-2022.

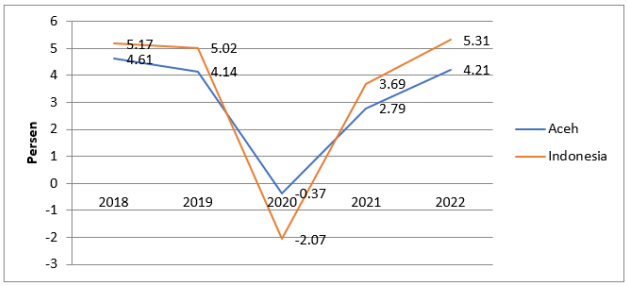

Figure 3. Economic Growth Rate of Aceh and Indonesia (2018-2022)

Figure 3 illustrates that Aceh's economic growth experienced a significant contraction in 2020, with a rate of -0.37 percent due to the COVID-19 pandemic, a trend seen across almost all provinces. This contraction was less severe than the national rate, which reached -2.07 percent. Aceh's economy began to recover post-

pandemic, achieving a growth rate of 2.79 percent in 2021. Although this growth rate was below the national average, Aceh's economic growth continued to increase, reaching 4.21 percent in 2022.

According to data from BPS Aceh in 2023, the economic growth rate by regency/city in the Province of Aceh, based on constant price Gross Regional Domestic Product (GRDP), has fluctuated over the past five years (2018-2022). North Aceh Regency has the highest GRDP among the regencies/cities in Aceh, reaching 17,587,158.96 million rupiahs, followed by Banda Aceh City with 15,454,371.48 million rupiahs. In contrast, the other 21 regencies/cities have GRDP figures below those of North Aceh Regency and Banda Aceh City, indicating an uneven income distribution among the regencies/cities in Aceh Province.

In developing Keynesian economic theory, the economic growth model emphasizes the crucial roles of savings and investment in determining regional economic growth. High levels of investment enhance economic growth and increase employment. Greater employment absorption significantly reduces poverty (Yustitia et al., 2022). The government's limited funds are a key reason for promoting economic growth through investment, whether from foreign direct investment (FDI) or domestic investment (Asiyan, 2013).

In poverty alleviation, investment emerges as a pivotal driver for economic development, modernization, income augmentation, and employment generation, necessitating earnest consideration. The recognition of investment's pivotal role in fostering economic growth is firmly grounded in empirical reality (Suprapto et al., 2022). Particularly for developing nations grappling with constrained fiscal budgets, investment assumes heightened significance in propelling economic progress (Ocolișanu et al., 2022). While prior research has explored the individual impacts of economic growth, investment, and macroeconomic variables on poverty rates, these studies have often overlooked their interconnectedness and have been conducted in disparate geographical contexts. This study aims to fill this gap by investigating the mediating influence of economic growth on the relationship between investment, government expenditure, and poverty levels within the regencies and cities of Aceh Province.

By scrutinizing the mediating role of economic growth, this research endeavors to unravel the intricate interplay between investment, government spending, and poverty dynamics. Such an approach not only offers a nuanced comprehension of the underlying mechanisms driving poverty but also holds promise for informing more targeted and effective policy interventions tailored to the socio-economic landscape of Aceh. Furthermore, this study contributes to the scholarly discourse by bridging theoretical frameworks with empirical evidence, enriching our understanding of the multifaceted determinants of poverty and paving the way for evidence-based policy formulation in poverty alleviation.

2. Literature Review

2.1. Relationship of Investment, Government Expenditure, and Economic Growth

The government's role is crucial in regulating the economy, primarily through the implementation of fiscal policies. By allocating government expenditure to build necessary infrastructure and facilities, the government intervenes in the economy effectively. Government spending is considered the most effective tool for economic intervention, and its effectiveness is closely tied to the regional revenue and expenditure budget (APBD), which directly influences economic growth.

A positive relationship exists between investment and economic growth, as proposed in economic growth models derived from Keynesian theory (Arsyad, 2014). This theory emphasizes the critical role of savings and investment in regional economic growth. The assumptions of this theory include: 1) the economy operates at full employment, and capital goods are fully utilized; 2) the economy consists of only two sectors, households, and businesses, excluding government and foreign trade sectors; 3) the level of community savings is proportional to national income, meaning the savings function starts from zero; and 4) the marginal propensity to save (MPS) remains constant.

Investment is an inherently unstable component of aggregate spending and a significant source of economic fluctuations. The level of corporate investment can be explained through its relationship with interest rates: lower interest rates lead to increased investment, while higher interest rates result in reduced investment.

2.2. Relationship of Investment, Government Expenditure, and Poverty

Government expenditure is a key component of fiscal policy aimed at stimulating investment, creating job opportunities, and ensuring economic stability and income equality. In macroeconomic theory, the augmentation of government spending, advocated by scholars, is pivotal in reducing poverty.

Both central and local governments are tasked with addressing poverty. The Regional Revenue and Expenditure Budget (APBD), geared toward the community's welfare, serves as a policy instrument for local governments to elevate residents' well-being and achieve public service benchmarks, thereby mitigating local poverty through judicious APBD allocation (Mulyati & Yusriadi, 2018). Equitable income distribution among the populace and judicious government policy allocation manifest in government revenue and expenditure budgets oriented toward impoverished segments (pro-poor budgeting). Consequently, implementing apt poverty reduction policies at the grassroots level enhances local inhabitants' living standards (Panji & Indrajaya, 2016).

2.3. Relationship Between Economic Growth and Poverty

According to Rostow's theory on economic growth and poverty, Rostow contends that the initial stages of economic growth require significant government investment in infrastructure, such as education, healthcare, transportation, and others, as the government must prepare the groundwork for economic development. The positive impacts of robust economic growth can enhance infrastructure quality, ultimately reducing poverty (Amala, 2022).

Tambunan, as cited in Elviani et al. (2018), asserts that economic growth without a corresponding increase in job opportunities will lead to disparities in income distribution (ceteris paribus), thereby creating conditions where economic growth coincides with heightened poverty levels. Economic growth and poverty exhibit a strong correlation, as during the early stages of development, poverty tends to increase, whereas nearing the final stages of development, the number of impoverished individuals gradually diminishes (Tambunan, 2014). Based on the relationship between the variables above, the framework in this study can be seen in Figure 4.

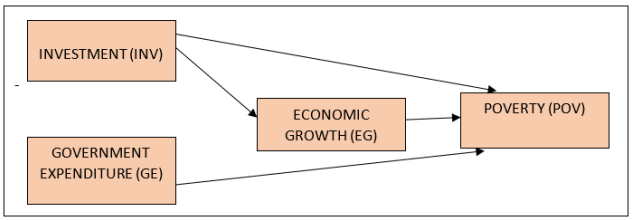

Figure 4. Research Framework

Thus, the hypothesis that can be derived based on the framework of this research is as follows:

- Ha1: There is a positive effect of investment and government spending on district/city economic growth in Aceh Province.
- Ha2: There is a negative effect of investment, government expenditure, and economic growth on district/city poverty in Aceh Province.
- Ha3: There is an indirect effect of investment and government spending on poverty through district/city economic growth in Aceh Province.

3. Materials and Methods

The study utilizes panel data analysis, combining cross-sectional and time-series data on poverty, GRDP, direct regional expenditure (APBK), and investment across 23 districts in Aceh from 2018 to 2022. Panel data analysis offers several advantages. Firstly, it captures individual and time-related variations, crucial for understanding poverty dynamics and addressing regional disparities and economic fluctuations. Secondly, it provides more efficient parameter estimates, enhancing statistical power and result reliability compared to traditional methods. Thirdly, it facilitates the study of causal relationships and mediation effects essential for comprehending the dynamics between economic growth and poverty reduction, employing rigorous tests like the Sobel test for mediation assessment.

In panel data estimation, three approaches are commonly employed to select the best model: (a) the Least Squares Common Effect Model (CEM), utilizing the Chow test to compare the common effect model against the fixed effect model; (b) the Fixed Effect Model (FEM), employing the Hausman test to compare the fixed effect model with the random effect model; and (c) the Random Effect Model (REM), utilizing the Lagrange-Multiplier test to compare the common effect model with the random effect model if necessary. The panel data equation in this study can be formulated as follows:

$$LogPOV_{it} = \beta_{01it} + \beta_{11}LogINV_{it} + \beta_{12}LogGE_{it} + \varepsilon_{1it} \quad (1)$$

$$LogEG_{it} = \beta_{02it} + \beta_{21}LogINV_{it} + \beta_{22}LogGE_{it} + \varepsilon_{2it} \quad (2)$$

$$LogPOV_{it} = \beta_{03it} + \beta_{31}LogEG_{it} + \varepsilon_{3it} \quad (3)$$

Where EG_{it} is Economic Growth of District/City *i* period *t*; INV_{it} is Investment of District/City *i* period *t*; GE_{it} is Government Expenditure of District/City *i* period *t*; POV_{it} is Poverty of District/City *i* period *t*; *Log* is Logarithm; $\beta_{01,02,03}$ is Constant; $\beta_{11,12,13,21,31,32,33,}$ is Regression coefficient; $\varepsilon_{1,2,3\ it}$ is Error term in district/city *i* period *t*.

4. Results and Discussions

4.1. Descriptive Statistics Analysis

Table 1. Result of Descriptive Statistics Analysis

	POV	EG	GE	INV
Mean	35782.17	5631658.	604.1357	293243.5
Median	29080.00	4241408.	556.2000	81745.01
Max	111270.0	17702778	1725.300	5207719.
Min	5140.000	543850.3	287.7000	40.32000
Std. Dev.	24446.38	4161618.	235.2453	629644.4
Obs	115	115	115	115

Table 1 displays that the poverty variable has a minimum value of 5140, a maximum value of 111270, and a mean value of 35782.17, with a standard deviation of 24446.38. It indicates that the mean value exceeds the standard deviation, implying a relatively even distribution of values. The Gross Regional Domestic Product variable exhibits a minimum value of 543850.3, a maximum value of 17702778, and a mean value of 5631658, with a standard deviation of 4161618. Similar to the poverty variable, the mean value of PDRB surpasses its standard deviation, suggesting a uniform distribution of values.

Government Expenditure variable shows a minimum value of 287.70, a maximum value of 1725.300, and a

mean value of 604.1357, with a standard deviation of 235.2453. Again, the mean value exceeds the standard deviation, indicating a uniform spread of values. Meanwhile, the Investment variable has a minimum value of 40.32, a maximum value of 5207719, and a mean value of 293243.5, with a standard deviation of 629644.4. Unlike the previous variables, the mean value of investment is smaller than its standard deviation, suggesting an uneven distribution of values.

4.2. Model Selection Test

In this study, there are three equation models (1), (2), (3). Estimation and testing are conducted for each equation to obtain the best model.

Table 2. Result of Chow Test for Model I

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1765.278593	(22,90)	0.0000

From Table 2, the test result of the Chow model I shows that the Prob. cross-section F value is less than the 5 percent significance level, specifically 0.000 < 0.05. Therefore, the null hypothesis (Ho) is rejected. Thus, it can be concluded that the best model to use is the Fixed Effect Model (FEM) approach rather than the Common Effect Model (CEM).

Table 3. Result of the Hausman Test for Model I

Effects Test	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	52.986364	2	0.0000

Based on Table 3, the Hausman test results for model I indicate that the Prob. Cross-section Random value is less than the 5 percent significance level, specifically 0.000 < 0.05. Consequently, the null hypothesis (Ho) is rejected. Therefore, it can be concluded that the best model to use is the Fixed Effect Model (FEM) approach rather than the Random Effect Model (REM).

Table 4. Result of Chow Test for Model II

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1885.363737	(22,89)	0.0000

From Table 4, the Chow model II test result shows that the Prob. Cross-section F value is less than the 5 percent significance level, specifically 0.000 < 0.05. Therefore, the null hypothesis (Ho) is rejected. Thus, it can be concluded that the best model to use is the Fixed Effect Model (FEM) approach rather than the Common Effect Model (CEM).

Table 5. Result of Hausman Test for Model II

Effects Test	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	74.810239	3	0.0000

Based on table 5, the Hausman test results for model II indicate that the Prob. Cross-section Random value is less than the 5 percent significance level, specifically 0.000 < 0.05. Consequently, the null hypothesis (Ho) is rejected. Therefore, it can be concluded that the best model to use is the Fixed Effect Model (FEM) approach rather than the Random Effect Model (REM).

Table 6. Result of Hausman Test for Model III

Effects Test	Statistic	d.f.	Prob.
Cross-section F	692.175050	22	0.0000

Table 6 shows the Chow model III test result indicates that the Prob. cross-section F value is less than the 5 percent significance level, specifically 0.000 < 0.05. Therefore, the null hypothesis (Ho) is rejected. Thus, it can be concluded that the best model to use is the Fixed Effect Model (FEM) approach rather than the Common Effect Model (CEM).

Table 7. Result of the Hausman Test for Model III

Effects Test	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	43.959127	1	0.0000

Table 7 shows the Hausman test results for model III, showing that the Prob. Cross-section Random value is less than the 5 percent significance level, specifically 0.000 < 0.05. Therefore, the null hypothesis (Ho) is rejected. Thus, it can be concluded that the best model to use is the Fixed Effect Model (FEM) approach rather than the Random Effect Model (REM). After conducting estimation on each equation I, II, and III in both Common Effect Model, Fixed Effect Model, and Random Effect Model forms, the results of the Chow and Hausman tests indicate that the best model is the Fixed Effect Model (FEM).

4.3. Panel Data Estimation

4.3.1. Relationship of Investment and Government Expenditure on Economic Growth

The estimation results in Table 8 for structural equation I concerning the economic growth function can be elucidated as in Table 8. Table 8 captures the t-test results indicating that the investment variable's P-value is smaller than the 5 percent significance level, specifically 0.000 < 0.05. It suggests that investment significantly affects economic growth, with a positive coefficient of 0.008629. It implies that a 1 percent increase in investment will reduce poverty by 0.86 percent, ceteris paribus. Investment's pivotal role in driving economic growth is evident in Aceh Province, where heightened investment levels significantly contribute to economic expansion, consistent with economic growth models.

However, research findings on the direct impact of investment on economic growth vary across regions,

highlighting the complexity of factors at play. While strategic investments in sectors like education and healthcare are emphasized in some studies, others note diminishing returns from foreign direct investment beyond certain thresholds. Nonetheless, investments remain crucial for revitalizing sluggish economies and attracting domestic and foreign investors. Aceh Province's improving investment climate underscores its growing appeal to investors, promising further economic development and prosperity (Sadono, 2008; Ramadhania, 2018; Supratiyoningsih & Yuliarmi, 2022; Bagus et al., 2020; Mulyaputri & Kartika, 2018; Rabnawaz & Jafar, 2016; Osei & Kim, 2020; Anwar & Nguyen, 2010; Makuyana & Odhiambo, 2019; Yang et al., 2021; Du et al., 2022; Malahatie et al., 2022; Sukirno, 2019).

Table 8. Result of Panel Data Estimation for Model I

Variables	Coefficient	SE	t-Stat	Prob
C	14.42362	0.072049	200.1924	0.0000
LOG_X1_INV	0.008629	0.001353	6.379317	0.0000
LOG_X2_GE	0.272436	0.02526	10.78529	0.0000
R-squared	0.998734		F-statistic	2959.37
Adjusted R-squared	0.998397		Prob(F-statistic)	0.00000
Eq:	LOGZ_EG = 14.42362 + 0.008629*LOGX1_INV + 0.272436*LOGX2_GE			

Similarly, for the government expenditure, the P-value is smaller than the 5 percent significance level, specifically 0.000 < 0.05. It indicates that government expenditure significantly influences economic growth, with a positive coefficient of 0.272436. It can be interpreted as a 1 percent increase in government expenditure leading to a reduction in poverty by 27.24 percent, ceteris paribus. The analysis reveals that Government Expenditure significantly influences economic growth, corroborating findings by Mahara (2023), Mandala (2020), Maingi (2017), and Poku et al. (2022), which suggest that increased government spending fosters economic growth.

Rahman et al. (2023) intriguingly find that governmental roles play a crucial part in the economic growth of Asian countries. However, misaligned government spending with economic needs can negatively impact society. Arfiyansyah (2018) study also underscores the positive and significant influence of government expenditure allocation on economic growth, while Fouladi (2010) demonstrates through a different approach that increased spending in productive sectors like mining, oil, and public services can enhance economic growth and private investment in Iran, despite infrastructure expenditure not contributing to economic growth.

Conversely, Buthelezi (2023) notes that in many African countries, increased government spending does not necessarily lead to economic growth. This trend is mirrored in Southeast Asian countries like Malaysia, where Gifari (2015) observes a negative correlation between government spending and economic growth. Despite the mixed findings, it is evident that government expenditure can have a negative short-term impact but a significant long-term effect on economic growth (Amusa & Oyinlola, 2019). The F-test results yield a Prob (F-statistic) value smaller than the 5 percent significance level, specifically 0.000 < 0.05. This indicates that the independent variables, investment and government expenditure, jointly and significantly affect economic growth. The coefficient of determination (R2) is obtained as 0.9983, suggesting that the independent variables in this model explain 99.83 percent of the variation in the poverty variable. Other variables outside the scope of this study explain the remaining 0.17 percent.

4.3.2. Relationship of Investment, Government Expenditure, and Economic Growth on Poverty

Table 9. Result of Panel Data Estimation for Model II

Variables	Coefficient	SE	t-Stat	Prob
C	10.35333	0.112031	92.41528	0.0000
LOG_X1_INV	-0.0008	0.0011	-0.727181	0.4690
LOG_X2_GE	-0.08663	0.018936	-4.574786	0.0000
LOG_Z_EG	0.011335	0.007079	1.601127	0.1129
R-squared	0.999198		F-statistic	4436.422
Adjusted R-squared	0.998973		Prob(F-statistic)	0.0000
Eq	LOGY_POV = 10.35333 – 0.000800*LOGX1_INV - 0.086630*LOGX2_GE + 0.011335*LOGZ_EG			

The estimation results in Table 9 for structural equation II concerning the poverty function can be explained in Table 9. The t-test results indicate that the P-value for the investment variable is greater than the 5 percent significance level, specifically 0.4690 > 0.05. It suggests that investment does not significantly affect poverty directly, with a negative coefficient implying that an increase in investment will decrease poverty, ceteris paribus. The analysis reveals that investment does not significantly affect poverty levels, aligning with studies by Amar and Arkum (2023) indicating that domestic and foreign investments do not significantly impact poverty in Bangka Regency.

Similarly, research by Hidayati et al. (2022) finds no influence of FDI on poverty in West Java Province, echoed by Suharlina (2020) shows insignificant and positive effects of investment on poverty in West Kalimantan Province, as well as by Kalibu et al. (2017) in North Sulawesi, where increased investment exacerbates poverty. Conversely, contrary to these findings, investment's impact in Western Balkan countries proves effective in poverty reduction, although the timing and location of investment allocation are crucial (Topalli et al., 2021). Ucal (2014) also notes a significant relationship between FDI and poverty reduction, indicating FDI's poverty-alleviating role in several developing countries. Meanwhile, Khan et al. (2019) find short-term causality between investment and poverty in Pakistan.

Additionally, Pompi (2017) demonstrates significant effects of both foreign and domestic investments on

poverty in West Kalimantan, while in Portugal, increased FDI leads to income redistribution and reduced poverty rates (Teixeira & Loureiro, 2019). However, foreign investment's impact on poverty varies; in Asia and Latin America, FDI positively and significantly affects poverty (Dhrifi, Jaziri & Alnahdi, 2020), while Aloui, Hamdaoui & Maktouf (2024) find significant poverty reduction due to FDI in Sub-Saharan Africa and Latin America but negative effects in Eastern Europe and insignificant effects in Asian countries. The underperformance of investments in Aceh in reducing poverty is attributed to uneven distribution, primarily benefiting the middle and upper classes and failing to reach the impoverished (Mustamin et al., 2015).

According to Adam Smith, investments are made with profit expectations, contingent upon the present investment climate and real returns. Policy redirection is essential to ensure investments benefit the impoverished and are integrated with poverty-alleviation strategies. Effective governmental policies are imperative to bolster Aceh's economic growth through domestic and foreign investments, thereby mitigating poverty. The P-value for the government expenditure variable is smaller than the 5 percent significance level, specifically 0.000 < 0.05, indicating that government expenditure significantly influences poverty directly, with a negative coefficient of -0.086630. It implies that a 1 percent increase in government expenditure will reduce poverty by 0.086630 percent, ceteris paribus.

The analysis reveals that Government Expenditure significantly affects poverty levels, consistent with Wu et al. (2022), who found that government spending reduces poverty in China. Similarly, government expenditure proves capable of poverty reduction in African countries (Nkambnebe, 2023; Omodero, 2019). Moreover, Nigeria's economic growth impacts poverty reduction significantly (Oyewale & Musiliu, 2015). Conversely, Sari (2018) indicates that government spending in the education and health sectors significantly reduces poverty, while expenditure in public works has no significant effect. Conversely, Widodo et al. (2011) find that government spending in the public sector does not directly influence poverty; public sector spending and the Human Development Index collectively affect poverty.

Similarly, Ramdani (2015) finds that government spending on poverty alleviation has no significant effect in Indonesia. Government spending on poverty alleviation requires more time for effective absorption. It only temporarily lifts the poor above the poverty line, making them vulnerable to external shocks such as inflation, leading to a return to poverty during economic crises. It aligns with Keynesian economic theory, which views government spending as a tool to stimulate economic growth and reduce unemployment. In this approach, government expenditure on social programs, infrastructure, education, and healthcare can help reduce poverty by creating jobs and increasing household incomes.

Additionally, public investment in infrastructure and human resources development is essential for long-term poverty reduction in economic growth theory. Adequate infrastructure, such as transportation and energy networks, can open up new economic opportunities in remote or poor regions, while investment in education and training can enhance workforce skills and enable social mobility. Government expenditure also plays a role in income redistribution through programs like food subsidies, unemployment benefits, education assistance, and social housing, aiming to provide direct assistance to individuals or families in need and reduce income inequality.

However, the t-test results for the economic growth variable show that the P-value is greater than the 5 percent significance level (0.1129 > 0.05), indicating that economic growth does not significantly affect poverty directly. The analysis reveals that economic growth does not substantially impact poverty levels. It contradicts the findings by Ruch & Geyer (2017), who underscore the crucial role of economic growth in poverty reduction at the municipal level in South Africa. However, the generalized assumption that economic growth reduces poverty does not always hold, as it may have a negative and significant impact only on middle-income countries. At the same time, its effect is not significant in low-income countries (Leow & Tan, 2019).

Similarly, Ijaiya et al. (2011) suggest that initial economic growth rates are not conducive to poverty reduction in Nigeria. The Kuznets Curve theory posits that income inequality increases alongside economic growth in the early stages of economic development. Economic growth in Aceh post-pandemic has not yet been instrumental in poverty reduction. Moreover, it has failed to generate employment opportunities, enhance productivity, or increase incomes across all social strata, primarily benefiting only a small portion of the population, particularly those already in better economic positions. Income distribution disparities have widened, with the rich getting richer while the poor remain impoverished or even worsen.

Economic growth predominantly benefits urban areas or specific sectors, neglecting rural areas and traditional sectors prevalent among the impoverished population. For instance, benefits from the mining and gas sectors are unevenly distributed among the population, with many still engaged in traditional agriculture with low productivity and income levels. Economic growth has not been accompanied by improved job quality, decent wages, or favorable working conditions, primarily relying on extractive sectors or industries with low-value additions. Furthermore, inadequate infrastructure and access to basic services hinder communities from capitalizing on better economic opportunities in many areas.

The F-test results yield a Prob (F-statistic) value smaller than the 5 percent significance level, specifically 0.000 < 0.05, indicating that the independent variables,

investment, government expenditure, and economic growth, jointly and significantly affect poverty. The coefficient of determination (R2) is obtained as 0.9989, suggesting that the independent variables in this model explain 99.89 percent of the variation in the poverty variable. Other variables outside the scope of this study explain the remaining 0.11 percent.

4.3.3. The Mediating Effect of Economic Growth on Poverty

Table 10. Result of Panel Data Estimation for Model III

Variables	Coefficient	SE	t-Stat	Prob
C	10.19159	0.117099	87.03385	0.0000
LOG_Z_EG	0.005735	0.007669	0.747838	0.4565
R-squared	0.999007		F-statistic	3979.765
Adjusted R-squared	0.998756		Prob(F-statistic)	0.0000
Eq:	LOGY_POV = 10.19159 + 0.005735*LOGZ_EG			

The estimation results in Table 13 for structural equation III indicate that the P-value is greater than the 5 percent significance level, specifically 0.4565 > 0.05. This implies that the economic growth variable (Z) does not significantly affect poverty, with a positive coefficient suggesting that an increase in economic growth will increase poverty, ceteris paribus. The coefficient of determination (R2) is obtained as 0.9989, indicating that the independent variables in this model explain 99.98 percent of the variation in the poverty variable. Other variables outside the scope of this study explain the remaining 0.02 percent.

4.3.4. Relationship between Investment and Poverty Mediated by Economic Growth

Figure 5 illustrates the first mediation, examining the extent to which economic growth mediates the influence of investment on poverty in Aceh Province.

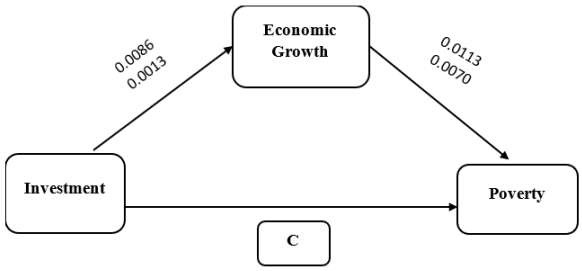

Figure 5. Path Analysis Model of Investment Variables

From Figure 5, the calculation results of the Sobel test for the effect of the investment variable on the economic growth variable yield a p-value of 0.12043, greater than the 5 percent significance level (0.05). Therefore, it can be concluded that the effect of investment on poverty through the mediating variable of economic growth is insignificant.

4.3.5. Government Expenditure and Poverty Mediated by Economic Growth

Figure 6 depicts the second mediation, examining the extent to which economic growth mediates the influence of government expenditure on poverty in Aceh Province.

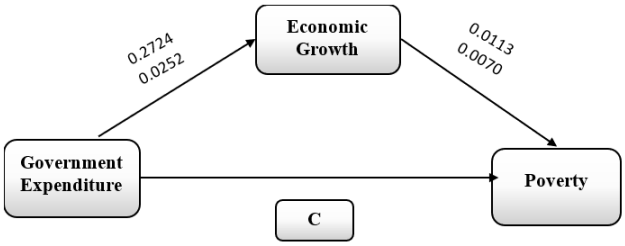

Figure 6. Path Analysis Model of Government Expenditure

From 6, the Sobel test results yield a p-value of 0.1132, greater than the 5 percent significance level (0.05). Therefore, it can be concluded that the effect of government expenditure on poverty through the mediating variable of economic growth is not significant

5. Conclusions

The estimation results lead to several important conclusions regarding the economic dynamics in Aceh Province. Investment and government expenditure both positively and significantly affect economic growth, indicating that these variables can be effective instruments for promoting growth. However, other factors also influence economic outcomes. When examining the relationship between economic growth and poverty, it is found that investment and economic growth do not directly affect poverty levels in Aceh. In contrast, government expenditure has a significant negative impact on poverty.

Moreover, economic growth does not mediate the influence of investment or government expenditure on poverty. These findings reflect the current economic situation in Aceh, where economic growth remains relatively weak despite substantial investments and adequate government spending, and poverty rates remain among the highest in Sumatra. This suggests that growth is concentrated in sectors with limited employment absorption, while sectors with greater potential for job creation have not contributed significantly to economic development.

Additionally, the uneven distribution of economic growth, where benefits are largely confined to wealthier segments of society, may perpetuate or even worsen poverty. Addressing poverty and fostering sustainable economic growth in Aceh requires attention to factors such as income inequality, limited access to resources, economic instability, and social disparities. While investment and government expenditure play crucial roles, broader policies must support these efforts to ensure that the benefits of growth reach marginalized communities.

A more inclusive approach is necessary, with policies focused on directing investment to labor-intensive

sectors like agriculture, fisheries, and SMEs, improving access to relevant education and vocational training, developing infrastructure in underdeveloped areas, implementing income redistribution programs, and empowering local communities in decision-making processes to ensure that they directly benefit from economic initiatives.

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