Jurnal Bisnis dan Kajian Strategi Manajemen
Volume 10 Nomor 1, April 2026
ISSN : 2614-2147 (Printed), 2657-1544 (Online)

Public Budget and Economic Growth as Determinants of Unemployment Reduction in Post-Conflict and Post-Tsunami Aceh Province (Evidence from Aceh, 2005-2024)

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ABSTRACT
This study aims to examine the role of the Aceh Regional Budget (APBA) and economic growth in reducing unemployment in Aceh Province following the armed conflict and the tsunami disaster at the end of 2004. The observation period covers 2005–2024, which represents a crucial phase of reconstruction, rehabilitation, and long-term development in Aceh. This research adopts a quantitative approach using time series regression analysis. Secondary data are obtained from Statistics Indonesia (BPS), official APBA budget reports, and other relevant government publications. The empirical results show that the Aceh Regional Budget (APBA) has a negative and statistically significant effect on the unemployment rate, indicating that increased public spending contributes effectively to employment creation in Aceh. Conversely, economic growth exhibits a positive but statistically insignificant relationship with unemployment, suggesting the presence of jobless or less inclusive growth during the post-disaster and post-conflict period. This finding implies that economic expansion alone does not automatically translate into higher labor absorption. The study highlights the importance of improving the quality and allocation of public expenditure, particularly toward labor-intensive sectors. In conclusion, reducing unemployment in post-conflict regions such as Aceh requires sustained fiscal capacity and inclusive employment-oriented growth strategies. The results provide valuable policy insights for regional governments in designing future development policies for areas recovering from conflict and natural disasters.

Keywords: Public budget, economic growth, unemployment.

Citation:
Syahril, S. (2026). Public Budget and Economic Growth as Determinants of Unemployment Reduction in Post-Conflict and Post-Tsunami Aceh Province (Evidence from Aceh, 2005-2024). *Jurnal Bisnis dan Kajian Strategi Manajemen*, 10(1), 224 - 241.

INTRODUCTION

Unemployment is a structural issue that continues to pose a significant challenge to development across various regions in Indonesia, including Aceh Province. According to data from Statistics Indonesia (BPS) Aceh, the open unemployment rate in the province has remained stagnant, and in some recent years, has even increased despite continued increases in the realization of the Aceh Regional Budget (APBA) ((BPS Aceh, 2023). This phenomenon raises a fundamental question: why have rising regional expenditure and economic growth failed to significantly reduce unemployment?

Theoretically, increases in regional government budgets if managed effectively should drive infrastructure development, expand employment opportunities, and strengthen productive regional sectors (Todaro & Smith, 2020). Furthermore, positive economic growth is expected to produce a spillover effect that leads to greater labor absorption. However, in Aceh, field observations reveal a disconnect between the scale of regional spending and improvements in labor welfare indicators, including unemployment.

Previous studies have attempted to investigate the impact of regional spending and economic growth on unemployment, yielding mixed results. Some findings support classical economic theory, while others diverge due to regional structural or institutional factors.

For instance, a study by Huda (2021) found that regional capital expenditures had a significant and negative impact on unemployment in several provinces across Sumatra. This aligns with Keynesian theory, which emphasizes that government spending particularly capital expenditure can generate a multiplier effect on the economy and stimulate job creation. In this context, public investment in infrastructure was shown to directly and indirectly absorb labor.

Meanwhile, Fitriani and Maulida (2020), in a study focused specifically on Aceh Province, found that economic growth had only a limited effect on reducing unemployment. They argued that Aceh's economic structure, which remains reliant on the primary sector and lacks diversification in labor-intensive industries, is the main obstacle. This finding contrasts with the predictions of classical growth models, which assume that increases in aggregate output are always accompanied by higher labor demand.

A separate study by Saragih (2019) revealed that regional government spending significantly affected unemployment reduction in Central Java. However, the effect was more pronounced when the spending was directed toward education and job training sectors. This suggests that the effectiveness of public expenditure depends not only on its magnitude but also on its allocation. In other words, long-term, productivity-oriented spending is more effective in reducing unemployment.

Conversely, research by Yuliani and Prasetyo (2018) in several regencies and municipalities in Kalimantan found no significant relationship between regional spending and unemployment. They highlighted issues such as inefficient budget utilization, weak local bureaucratic capacity, and a tendency toward routine (non-productive) expenditures as key reasons for the failure of public spending to stimulate job creation.

Additionally, Rizki (2022) conducted a panel data analysis across ten provinces in Indonesia and found that economic growth only affected unemployment when accompanied by improvements in human capital. This indicates that economic growth that is not inclusive or not accompanied by labor market reforms may fail to reduce unemployment levels.

From these various studies, it is evident that research findings on the effects of regional spending and economic growth on unemployment are inconsistent. These discrepancies are influenced by differences in regional structural contexts especially in areas affected by disasters such as the 2004 earthquake and tsunami, the effectiveness of budget implementation, and the quality of regional institutions. This is the gap that the present study seeks to address: in the specific context of Aceh Province with a budget heavily dominated by Special Autonomy Funds and fluctuating economic growth do APBA and economic growth have a measurable impact on unemployment, as suggested by economic theory?

This study aims to empirically analyze how APBA and economic growth jointly influence unemployment in the post tsunami and post-earthquake Aceh. Through this approach, the research hopes to offer a more comprehensive understanding of the effectiveness of regional fiscal policies in addressing unemployment, while also contributing to the relatively limited literature on regional economic development in the context of Aceh.

LITERATURE REVIEW

Theories of Unemployment in Macroeconomics

This study is grounded in the theories of unemployment, economic growth, and government expenditure. In the classical approach, unemployment is viewed as a temporary condition that can be resolved through wage adjustments, leading the labor market to always move toward full equilibrium (Mankiw, 2021). However, the Keynesian approach argues that in situations of weak aggregate demand, unemployment can be involuntary, thus requiring fiscal intervention through government spending to create jobs (Keynes, 1936). On the other hand, structural unemployment theory explains that unemployment can also result from a mismatch between workers' skills and market needs, or from structural changes in the economy (Blanchard & Johnson, 2013).

Unemployment can be caused by low economic growth. While economic growth is expected to increase labor absorption, the phenomenon of "jobless growth" shows that not all growth is inclusive of labor (Todaro & Smith, 2015). In the context of regional fiscal policy, revenue and expenditure budgets such as the Aceh Regional Budget (APBA) function as government intervention tools that can accelerate development and reduce unemployment, especially when directed toward productive spending such as infrastructure (Musgrave & Musgrave, 1989; Bappenas, 2020).

The Effect of Regional Government Expenditure on Unemployment

Regional government expenditure is part of fiscal policy aimed at promoting economic growth and public welfare. According to Keynesian theory, government spending plays a vital role in stimulating aggregate demand, especially during periods of economic downturn. In this context, increased public spending such as infrastructure development and the provision of public services can raise the demand for labor and reduce unemployment (Keynes, 1936).

Specifically, Musgrave and Musgrave (1989) state that one of the main functions of government expenditure is the allocation function, which is to provide public goods and services that are not efficiently delivered by the market. If local governments allocate budgets effectively to productive sectors, a multiplier effect on local economic growth can be generated, which in turn lowers unemployment levels.

However, the effectiveness of government spending in reducing unemployment heavily depends on the type of expenditure. Capital expenditure tends to be more productive than routine expenditure, as it creates long-term assets and absorbs more labor in the process (Bappenas, 2020).

Therefore, in analyzing the relationship between government spending and unemployment, it is important to consider the structure of the expenditure itself.

Various studies have been conducted to examine the effect of regional government spending on unemployment levels, with mixed results. Generally, these findings relate to two main factors: the type of spending undertaken and the effectiveness of budget allocation.

Huda (2021), in his research in Sumatra, found that regional capital expenditure had a significantly positive impact on reducing unemployment. This research aligns with Keynesian theory, which posits that government spending focused on infrastructure projects can stimulate the local economy and create jobs. Increased spending on labor-intensive projects has proven effective in lowering unemployment, particularly in the construction and infrastructure sectors.

However, contrary findings were reported by Amalia and Rachmawati (2020) in East Kalimantan, who found that regional government spending had no significant impact on unemployment. They noted that although there was an increase in local spending, most of the budget was absorbed by non-productive routine expenditures. This contradicts Keynesian theory, which expects government spending to stimulate aggregate demand and generate new employment, as routine spending tends to create little added value in terms of labor absorption.

In line with these findings, Purba et al. (2017) argued that different types of spending have different impacts on unemployment levels. Short-term goods and services expenditures, according to them, do not significantly contribute to reducing unemployment. In contrast, capital expenditure focused on long-term infrastructure development has a more noticeable impact on job creation and unemployment reduction. This supports Musgrave and Musgrave's (1989) view that government expenditure concentrated on capital spending tends to be more productive and can drive inclusive economic growth.

In Aceh, however, a study by Fitriani and Maulida (2020) found that despite an increase in regional spending particularly through the APBA the impact on unemployment remained limited. They identified that a larger portion of the budget was absorbed by routine expenditure, while spending on sectors with job-creating potential such as small industries and labor-intensive sectors remained relatively low. This finding contradicts the Keynesian view that regional government spending should reduce unemployment by increasing aggregate demand, especially in labor-intensive sectors.

On the other hand, Dewi and Maulana (2022) used a non-linear regression approach to analyze the relationship between regional government spending and unemployment. They found that in the initial stages of increased spending, the impact on unemployment was quite significant. However, beyond a certain threshold, the impact began to decline, indicating that government spending has limited effects unless supported by policies that enhance public sector productivity. These findings highlight the importance of effective budget management and the sustainability of government programs.

These findings indicate the complexity of the relationship between government spending and unemployment levels. While studies like those by Huda (2021) and Wulandari and Siregar (2019) support the Keynesian theory that capital expenditure positively affects unemployment reduction, other studies such as Amalia and Rachmawati (2020) and Fitriani and Maulida (2020) show that unproductive or poorly targeted spending yields no significant impact. This suggests that the type of expenditure and the effectiveness of budget allocation are key determinants of how far government spending can reduce unemployment.

Economic Growth and Its Relationship with Unemployment

Economic growth refers to the increase in a country or region's production capacity over a certain period, typically measured by the growth of Gross Domestic Product (GDP). Positive economic growth is expected to create job opportunities and reduce the unemployment rate. In the context of the relationship between economic growth and unemployment, several theories explain their interconnection.

One foundational theory is Okun's Law. Okun (1962) proposed that there is a negative relationship between the unemployment rate and the rate of economic growth. In other words, when the economy grows more rapidly, unemployment tends to decline; conversely, when economic growth slows, unemployment rises. Okun suggested that for every 1% decrease in unemployment, the economy must grow by more than 2% in the long run.

In addition, Keynesian Theory also provides insight into this relationship. According to Keynes (1936), unemployment can arise from insufficient aggregate demand in the economy, causing firms to hire fewer workers. From the Keynesian perspective, economic growth driven by increased government spending whether on infrastructure or consumption can stimulate aggregate demand and thus reduce unemployment.

However, the Structuralist Theory argues that rapid economic growth in the short term does not always lead to a direct reduction in unemployment, especially if that growth is not accompanied by structural changes that generate new job opportunities. Some developing countries experience so-called *jobless growth*, where the economy expands, but unemployment remains high.

Several previous studies have examined the relationship between economic growth and unemployment, with varying results, some supporting classical economic theories and others contradicting them. According to Okun's Law (1962), there is a negative relationship between economic growth and unemployment. A study by Huda (2021) in Sumatra supports this theory, showing that high economic growth in several provinces contributed to a reduction in unemployment, especially in labor-intensive sectors like construction. This finding aligns with Keynesian Theory, which emphasizes the role of economic growth in creating employment through increased aggregate demand.

However, contradictory findings were presented by Fitriani and Maulida (2020) in Aceh. They found that despite positive economic growth, unemployment in Aceh remained high. They explained that Aceh's economic structure, which heavily relies on sectors such as plantations and mining industries that are not labor-intensive, limits the impact of economic growth on reducing unemployment. This finding challenges the Keynesian assumption that economic growth directly reduces unemployment, suggesting that this may not hold true in regions with specific economic structures like Aceh.

Furthermore, Dewi and Maulana (2022) also found that although economic growth contributed to lowering unemployment, the impact was not always statistically significant. They argued that even if the economy grows, this growth does not necessarily translate into new jobs unless it is supported by labor-intensive sectors. Their findings highlight the relevance of Structuralist Theory, where the effect of economic growth on unemployment is heavily dependent on economic structure and the nature of the sectors driving growth.

Another study by Purba et al. (2017) showed that growth driven by capital- and technology-intensive sectors does not always absorb large amounts of labor. Therefore, even when the economy grows, unemployment can remain high. This finding critiques Okun's Law, which assumes a linear relationship between economic growth and declining unemployment without accounting for sectoral labor absorption.

Meanwhile, Wulandari and Siregar (2019) found that although there is a positive relationship between economic growth and unemployment reduction in several regions, development inequality significantly influences this outcome. Regions with greater inequality find it more difficult to reduce unemployment despite economic growth, emphasizing the importance of equity in economic development.

In conclusion, although some studies support Okun's Law and Keynesian Theory in asserting that economic growth can reduce unemployment, other research suggests that this relationship is highly dependent on economic structure and sectoral development. These findings reinforce the importance of Structuralist Theory, which emphasizes that to effectively reduce unemployment, economic growth must be accompanied by structural changes that foster employment in labor-intensive sectors.

Special Context of Aceh

The Province of Aceh has unique economic characteristics that affect the relationship between the regional government budget (APBA), economic growth, and the unemployment rate. A deeper literature review on Aceh considers several specific factors that need to be analyzed, including the impact of the Special Autonomy Fund (DOK), the natural resource-based economic structure, and challenges in the implementation of regional fiscal policy.

Since the implementation of the Special Autonomy Fund (DOK) in 2008, Aceh Province has received a substantial allocation of funds from the central government. The DOK aims to accelerate post-conflict and post-tsunami economic recovery to promote regional development. Literature examining the impact of DOK in Aceh shows that although these funds have contributed to infrastructure development and other sectors, their effectiveness in reducing unemployment remains limited. For example, Ariyanti & Adnan (2017) indicate that while the DOK increased infrastructure spending, its effect on lowering unemployment was limited because the development focused more on the construction sector and was not accompanied by job creation in more labor-intensive sectors. Furthermore, the funds are often underutilized in programs that directly affect employment opportunities for the community.

Aceh's economic structure heavily depends on natural resource sectors, especially plantations, agriculture, and mining. Although these sectors contribute significantly to Aceh's GDP, they tend to have low labor intensity compared to other sectors such as manufacturing or tourism. This causes the impact of economic growth on reducing unemployment to be limited, because the sectors growing in Aceh are more oriented toward jobless growth. Research by Fitriani & Maulida (2020) highlights that despite Aceh's economic growth, existing sectors are less able to absorb a large workforce, resulting in persistently high unemployment.

Regional fiscal policy, particularly in managing the Aceh Revenue and Expenditure Budget (APBA), also presents major challenges in creating broader employment opportunities. Inefficient or non-transparent management of APBA can hinder the effectiveness of government spending in sectors that should generate jobs. Several studies, such as Siregar (2019), note that a greater portion of the budget is allocated to routine expenditures and infrastructure that is less integrated with the development of more labor-intensive sectors. The lack of coordination between fiscal policy and sectors with employment potential causes these policies to be ineffective in reducing unemployment.

Additionally, Aisyah & Taufik (2021) emphasize that implementing development programs based on local data, which considers the specific potentials and needs of the Acehnese community, is crucial for improving the effectiveness of APBA. Without the use of accurate and relevant data, development programs tend to miss the main issue, which is unemployment.

The use of accurate and relevant local data is also a critical concern in this study. (BPS Aceh, 2021) records that many development policies are ineffective due to the lack of data reflecting the real needs of the Acehnese people. Therefore, it is important to formulate policies based on more comprehensive local data analysis, with the aim not only of driving economic growth but also of creating employment that matches the characteristics and needs of the local labor force.

RESEARCH METHODOLOGY

This study begins by identifying the research problem, which is to determine how the Aceh Regional Revenue and Expenditure Budget (APBA) and economic growth affect the unemployment rate in Aceh Province. The primary objective of this research is to assess the extent to which APBA, and economic growth contribute to reducing unemployment in Aceh.

The data used in this study are entirely secondary and were obtained from official and credible institutions. Information regarding the unemployment rate, Gross Regional Domestic Product (GRDP), and other socioeconomic indicators were sourced from publications by the Central Statistics Agency (BPS) of Aceh Province. Meanwhile, data related to the Aceh Regional Revenue and Expenditure Budget (APBA) were collected from the Aceh Regional Government Financial Reports. Additionally, economic growth data were gathered from regional annual economic reports published by BPS and relevant agencies. All data cover a period of the last five years, from 2005 to 2024, to provide a sufficiently representative trend for empirical analysis. This longitudinal approach allows the researcher to identify patterns in the relationships among variables more comprehensively.

To analyze the relationship between the Aceh Regional Revenue and Expenditure Budget (AREB), economic growth, and the unemployment rate in Aceh Province, this study employs a multiple linear regression model. This model is chosen because it can explain the simultaneous influence of more than one independent variable on a single dependent variable, in this case, the unemployment rate. This approach is relevant for testing the relative contribution of each economic factor to the dynamics of unemployment in the region.

Jurnal Bisnis dan Kajian Strategi Manajemen
Volume 10 Nomor 1, April 2026
ISSN : 2614-2147 (Printed), 2657-1544 (Online)

The multiple linear regression model used in this study is formulated as follows:

$$URAP_{it} = \beta_0 + \beta_1 AREB + \beta_2 EGAB + \varepsilon_{it}$$

Where URAP is the Unemployment Rate of Aceh Province; AREB/APBA represents the Aceh Revenue and Expenditure Budget; EGAP is the Economic Growth of Aceh Province; β_0 is the intercept; β_1 and β_2 are the regression coefficients; and ϵ_it is the error term.

Next, a series of hypothesis tests were conducted to evaluate the significance of the influence of independent variables on the unemployment rate in Aceh Province. The statistical tests used included the t-test, F-test, and coefficient of determination (R-squared/R^2). The t-test aimed to measure the partial effect of each independent variable on the dependent variable, namely the unemployment rate, to determine whether APBA and economic growth individually have a significant impact. Then, the F-test was used to test the overall significance of the model, specifically whether the two independent variables together significantly affect the unemployment rate. Meanwhile, the coefficient of determination (R^2) was used to assess how much of the variation in the unemployment rate can be explained by the regression model, indicating how well the model represents the relationship between the variables studied.

Finally, after calculating the regression model, the next step was to analyze the results obtained from the t-test, F-test, and R^2. Interpretation was conducted by examining the p-values, regression coefficients, and statistical significance of each variable. Through this analysis, conclusions could be drawn about the influence of APBA and economic growth on the unemployment rate in Aceh Province.

RESULT AND DISCUSSION

Development of AREB, Economic Growth, and Unemployment in Aceh Province

The development of three main indicators Aceh Provincial Revenue and Expenditure Budget), Economic Growth of Aceh Province, and Unemployment Rate of Aceh Province over the last two decades. Figure 1 shows that AREB experienced a very significant upward trend, increasing from IDR 2.5 trillion in 2005 to peak at IDR 11.7 trillion in 2024. This increase was most likely influenced by fiscal decentralization policies and special autonomy fund transfers from the central government to Aceh following the Helsinki peace agreement in 2005 (Bappenas, 2015).

In contrast, EGAP showed a more fluctuating trend. Although it grew consistently until 2019, there was an economic contraction in 2020 of -0.37%, very likely due to the impact of the COVID-19 pandemic, which paralyzed economic activities both nationally and regionally (BPS Aceh, 2021). However, after 2020, EGAP began to recover slowly, though not as strongly as before the pandemic

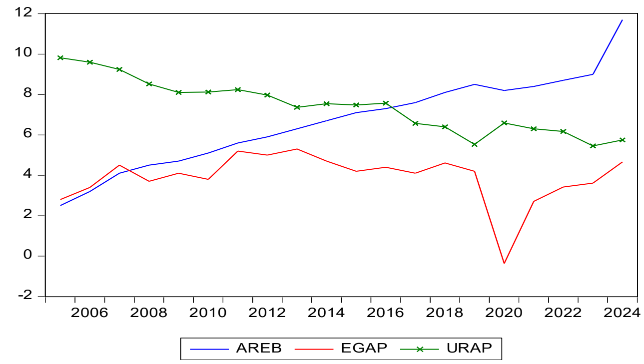

Figure 1. Trends in the Aceh Revenue and Expenditure Budget (REB),
Economic Growth (EGAB), and Unemployment Rate (URAP) in Aceh Province, 2005–2024

Meanwhile, URAP (Unemployment Rate of Aceh Province) shows a gradual downward trend, from 9.82% in 2005 to around 5.75% in 2024. This decline generally indicates an improvement in the labor market; however, stagnation around 5–6% since 2017 may suggest structural challenges in creating quality employment, especially for young graduates (ILO, 2023).

The interrelationship among these three indicators can also be critically analyzed. For instance, although AREB (Aceh Regional Budget) has increased sharply, it is not always followed by improvements in EGAP (Economic Growth of Aceh Province) or a significant decline in URAP. This raises questions about the effectiveness of regional government spending in driving economic growth and absorbing labor. The gap between fiscal input (AREB) and development outcomes (EGAP and URAP) may indicate problems in budget allocation efficiency or the quality of regional development planning (World Bank, 2020).

The trend of increasing AREB, which has nearly quintupled over two decades (from IDR 2.5 trillion in 2005 to IDR 11.7 trillion in 2024), highlights the central role of Special Autonomy funds and fiscal transfers from the central government. According to a study by Bappenas (2015), the rise in AREB following the Helsinki MoU was expected to accelerate reconstruction and economic development in Aceh.

However, empirical research by Siregar and Wahyuni (2019) shows that the fiscal surge in Aceh has not been proportionate to improvements in macroeconomic performance. The high dependency on consumptive spending, bureaucratic budget management, and weak institutional capacity at the regional level have limited the impact of increased AREB on the real sector.

Economic growth in Aceh (EGAP) remained relatively stable at around 4–5% before 2020. However, during the pandemic year (2020), EGAP contracted to -0.37%, reflecting the region's weak resilience to external shocks. Research by Lubis et al. (2021) found that Aceh's economic structure remains reliant on the primary sector, which is vulnerable to price volatility and distribution disruptions.

Post-pandemic, EGAP has slowly recovered but has yet to show signs of structural recovery. According to the World Bank (2020), regions like Aceh require greater investment in high value-added service sectors and infrastructure connectivity to boost long-term productivity.

The unemployment rate in Aceh (URAP) declined from 9.82% in 2005 to 5.75% in 2024, but this data should be interpreted with caution. A study by the (ILO, 2023) notes that falling unemployment figures in some regions of Indonesia are not always due to the creation of productive jobs, but rather due to a rise in informal and underemployment.

Moreover, the decline in URAP in Aceh since 2015 has not been accompanied by accelerated economic growth. This indicates the presence of "jobless growth" a condition in which the economy grows but does not proportionally create decent employment opportunities (Todaro & Smith, 2020).

Results of the Classical Assumption Tests

Classical assumption tests were conducted, including the normality test to ensure that the residuals of the regression model are normally distributed. Based on the Anderson-Darling test, the resulting p-value was 0.736, which is well above the 0.05 significance threshold. This indicates that the residuals are normally distributed, meaning the normality assumption is satisfied in this regression model.

Next, a multicollinearity test was conducted to assess whether there is a high linear correlation between the independent variables. The Variance Inflation Factor (VIF) values for AREB and EGAP were both 1.001, which is far below the common tolerance limit of 10. This suggests that no multicollinearity exists in the model, and both variables can be used simultaneously without excessive mutual influence.

Subsequently, a heteroscedasticity test was conducted to determine whether the variance of the residuals is constant. The Breusch-Pagan test produced a p-value of 0.0197, which is below 0.05. This indicates that heteroscedasticity is present in the model, meaning the residual variance is not constant. This issue may affect the efficiency of coefficient estimates, and thus adjustments are needed, such as using robust standard errors.

Finally, an autocorrelation test (Durbin-Watson test) was performed to check for the presence of autocorrelation (i.e., correlation between residuals of sequential observations). The Durbin-Watson statistic was 1.87, which is close to the ideal value of 2. This indicates that no significant autocorrelation is present in the model, and the residuals are independent.

Results of Multiple Linear Regression Analysis

The regression results can be formulated as follows:

$$URAP=11.1697-0.5479AREB+0.0421EGAP$$

This equation indicates that AREB has a negative effect on the unemployment rate in Aceh Province. Specifically, every one-unit increase in AREB, such as one trillion rupiah, is associated with a 0.5479% decrease in the unemployment rate, assuming economic growth remains constant. This suggests that increases in regional budget allocations have a significant impact in reducing unemployment in the province.

Conversely, the positive coefficient of EGAP, amounting to 0.0421%, implies that higher economic growth is associated with a slight increase in the unemployment rate, although this effect is not statistically significant. This finding suggests the possibility of *jobless growth*, in which economic growth does not effectively translate into employment creation. Overall, the model underscores the importance of productive management and utilization of AREB in efforts to generate employment and reduce unemployment in Aceh.

Based on the partial significance test (t-test), the AREB variable is found to have a statistically significant impact on the unemployment rate in Aceh Province, with a coefficient of -0.5479 and a p-value of less than 0.0001. This confirms that each one-unit increase in AREB is associated with a 0.5479% decline in the unemployment rate, demonstrating that increased regional revenue and expenditure budgets can make a tangible contribution to unemployment reduction.

In contrast, the EGAP variable, representing economic growth, has a positive coefficient of 0.0421 but a p-value of 0.627, indicating statistical insignificance. This suggests that, although economic growth is occurring, its effects are not directly reflected in reduced unemployment. This is likely due to the non-inclusive nature of the growth or its failure to create sufficient employment, a phenomenon known as *jobless growth*. Therefore, these findings highlight the importance of effectively distributing and utilizing AREB in programs that directly influence job absorption.

Furthermore, the simultaneous significance test (F-test) shows that AREB and EGAP jointly have a statistically significant effect on the unemployment rate in Aceh Province, with an F-value of 69.14 and a very small p-value (6.83×10^{-9}). This indicates that the regression model used is capable of explaining variations in the unemployment rate in a statistically meaningful way, and that both independent variables included in the model are relevant in explaining the phenomenon.

Although the partial test previously indicated that only AREB was individually significant, the F-test confirms that the combined influence of both variables remains important in constructing a representative model. These findings support the argument that regional fiscal policy (i.e., AREB) and macroeconomic dynamics such as economic growth need to be analyzed together to gain a comprehensive understanding of employment conditions.

Additionally, the coefficient of determination (R^2) of 0.891 indicates that 89.1% of the variation in the unemployment rate (URAP) can be explained by the combination of AREB and EGAP. This shows that the regression model has a very high level of predictive accuracy. However, since the model includes more than one independent variable, the Adjusted R^2 is a more appropriate metric for evaluating its performance. The Adjusted R^2 value of 0.878 remains high, indicating that the inclusion of EGAP in the model does not significantly reduce its quality even though EGAP's individual contribution is statistically insignificant based on the t-test.

Analysis of the Effect of AREB on Unemployment

This study finds that every one trillion rupiah increase in AREB (Regional Revenue and Expenditure Budget) contributes to a 0.5479% reduction in the unemployment rate, assuming economic growth remains constant. This finding suggests that regional public budgets, if managed and allocated effectively, can significantly drive labor absorption.

This result is consistent with the findings of Todaro and Smith (2015), who argue that government spending particularly on infrastructure and labor-intensive programs has a multiplier effect on job creation, especially in developing regions. In the context of Aceh, where the informal sector is dominant and there is a high dependence on central government transfers, public expenditure can act as a key catalyst for absorbing local labor.

ISSN : 2614-2147 (Printed), 2657-1544 (Online)

A study by Fadli and Irwansyah (2019) supports this, showing that capital expenditure components of AREB are negatively correlated with unemployment rates, particularly in the construction and services sectors. In other words, local government spending not only affects the macroeconomy but also directly stimulates the real sector.

However, several studies highlight that increases in regional budgets do not automatically translate into lower unemployment. Research by Amri and Yusuf (2017) in South Sulawesi found that despite significant increases in regional budgets, unemployment rates remained stagnant. They concluded that bureaucratic inefficiencies, corruption, and projects lacking in economic value-added undermined the employment impact of public spending.

A similar study by Mardiasmo and Yani (2020) noted that regional expenditures are often dominated by indirect spending, such as salaries and civil servant allowances, which do not directly contribute to new job creation. This suggests that the composition of spending is more critical than the total amount of expenditure.

Moreover, a World Bank (2020) study highlighted that in post-conflict regions such as Aceh, increased public budgets are often absorbed by short-term projects that lack sustainability and fail to address the root causes of unemployment such as skill mismatches and limited labor market access.

This study assumes that increases in AREB are allocated efficiently and directed toward productive sectors. However, this assumption requires further scrutiny. If budget increases are instead absorbed by routine spending or are not accompanied by well-designed labor-intensive programs, the impact on unemployment could be negligible or even negative in the long term (e.g., through the crowding out of private sector activity).

Furthermore, by controlling economic growth, this study isolates the effect of AREB. However, this may obscure the reality that economic growth and public spending often move together, meaning the real effect of the budget may be mediated by other macroeconomic dynamics, such as private investment, political stability, and consumer purchasing power.

Alternatively, an approach based on public expenditure efficiency may better explain the variation in AREB's effect on unemployment. Not all public spending has the same impact. Therefore, the distribution, transparency, and effectiveness of budget oversight are crucial to translating expenditure into real employment outcomes.

Currently, most AREB allocations are still concentrated in routine and personnel expenditures. To create a meaningful impact on unemployment, budget composition must be reoriented toward labor-intensive sectors such as basic infrastructure, MSMEs, and modern agriculture based on local technologies. Projects like irrigation development, village road construction, or revitalization of traditional markets can generate both direct and indirect employment (World Bank, 2020, p. 45). Furthermore, every AREB-funded project should undergo an employment impact assessment before approval. Local governments should also strengthen performance-based monitoring and evaluation systems to ensure that AREB-funded programs deliver tangible results in labor absorption (Mardiasmo, 2018).

To further expand the fiscal impact, partnerships with the private sector should be pursued through Public-Private Partnership (PPP) schemes. These can accelerate infrastructure development and broaden employment opportunities while reducing overreliance on public budgets (Bappenas, 2021, p. 67).

Lastly, AREB will not be effective if the people of Aceh lack the capacity or skills needed to fill newly created jobs. Therefore, there must be an integration of vocational training, industrial internships, and entrepreneurship incubation programs directly funded by the regional budget (ILO, 2019). Additionally, corruption and budget mismanagement are major obstacles to policy implementation. Transparency in procurement, fund distribution, and project outcome documentation must be improved. Strengthening public participation and the role of independent oversight institutions is also essential (Transparency International, 2020).

Analysis of the Effect of Economic Growth on Unemployment

The regression analysis results on data from Aceh Province show that the coefficient of EGAP (Economic Growth in Aceh Province) is 0.0796 with a p-value of 0.753. Econometrically, this indicates that every 1% increase in economic growth is correlated with a slight increase in the open unemployment rate (URAP), although this relationship is not statistically significant. This finding challenges the conventional assumption rooted in Okun's Law, which states that economic growth should have a negative effect on unemployment. This phenomenon is known as jobless growth, where economic growth fails to create jobs proportionally.

Several previous studies support this finding. Research in Binjai City (2018-2022) and national studies in Indonesia during the same period show that economic growth does not significantly affect open unemployment. Another study in Aceh Province (1989-2018) also found that although the relationship was negative, the influence of economic growth on unemployment was not significant, reinforcing that Okun's Law does not effectively apply in this region (ETD UGM; Warunayama).

However, these results are not entirely universal. A study conducted by Syahril (2014), in West Aceh Regency from 2002 to 2011 found that growth had a significant impact on unemployment. Furthermore, a study in South Sumatra (2002–2019) showed a significant negative effect of economic growth on unemployment, contributing 31.19% to the variation in unemployment (Unbara Journal). Similarly, a cross-country study in ASEAN (1991–2017) confirmed the validity of Okun's Law in the region (ETD UGM). These differing results indicate that structural and institutional contexts play a crucial role in influencing the relationship between growth and unemployment.

There are several alternative explanations for these findings. First, Aceh's economy tends to be capital-intensive, such as in mining and oil and gas sectors, which often generate growth without meaningful job creation. Second, a skills gap between the workforce and industry needs causes structural unemployment that remains unresolved despite economic growth. Third, weak public policies in stimulating labor-intensive sectors and workforce training further reinforce the jobless growth phenomenon.

Thus, it can be concluded that economic growth in Aceh during the analyzed period was not sufficiently inclusive to address unemployment issues. Therefore, policy recommendations should focus on economic diversification toward labor-intensive sectors, improving workforce quality through education and training, and formulating development policies that not only target GDP figures but also real job absorption.

To address jobless growth in Aceh, the provincial government needs to shift development focus from capital-intensive sectors like oil and gas to labor-intensive sectors such as light manufacturing, agribusiness, and the creative economy. These sectors have proven more capable of absorbing large numbers of workers, especially those with mid-to-low skill levels (Tambunan, 2011).

Furthermore, the mismatch between workforce skills and industry needs causes structural unemployment. Therefore, vocational education programs and competency-based training aligned with local and global labor markets need to be developed (World Bank, 2019). The local government should also be selective in attracting foreign and domestic investment by offering incentives to investors who create direct employment rather than merely boosting GDP. Fiscal and non-fiscal policy evaluations should ensure that incoming investments yield inclusive socio-economic impacts (OECD, 2019).

Micro, Small, and Medium Enterprises (MSMEs) in Aceh have significant potential to create both informal and formal employment. Support in capital access, digitalization, and simplified licensing is needed so that MSMEs can grow and absorb more labor effectively (Ministry of Cooperatives and SMEs, 2021). Additionally, the government should not only pursue macroeconomic growth but use it as an instrument to achieve social goals, including unemployment reduction. Cross-sectoral synergy is essential between the Labor Office, Education Office, and Industry Office (UNDP, 2020).

CONCLUSION AND RECOMMENDATION

Conclusion

1. The t-test results show that AREB has a negative effect on the unemployment rate in Aceh Province. This means the findings indicate that an increase in regional budget expenditure significantly contributes to reducing the unemployment rate in Aceh. Conversely, economic growth has a positive effect on unemployment in Aceh Province, suggesting that an increase in economic growth is associated with a slight rise in the unemployment rate, although this effect is not statistically significant. This finding indicates the possibility of jobless growth, where economic growth does not necessarily absorb labor effectively. Overall, the model emphasizes the importance of productive management and utilization of AREB to create jobs and reduce unemployment in Aceh.
2. The results of the simultaneous significance test (F-test) show that together, the variables AREB and EGAB have a significant effect on the unemployment rate in Aceh Province. This indicates that the regression model used is able to explain the variation in the unemployment rate significantly, and both independent variables included are relevant in explaining this phenomenon.
3. This analysis is supported by several previous studies, both local and national, which also demonstrate the weak influence of economic growth on reducing unemployment. This suggests that Aceh's economic structure tends to be non-inclusive, likely dominated by capital-intensive sectors that do not directly contribute to job creation. Furthermore, the low quality and

mismatch of workforce skills with market needs are major obstacles to reducing unemployment.

4. The development policy in Aceh must transform from merely pursuing economic growth figures into a more inclusive strategy focused on job creation. Diversifying labor-intensive sectors, improving workforce quality, and strengthening Micro, Small, and Medium Enterprises (MSMEs) need to be top priorities to address the challenge of jobless growth and to create fair and sustainable growth.

Recommendation

1. Policies to strengthen the impact of AREB on unemployment should not only focus on increasing the budget amount but must also be accompanied by reforms in spending structure, governance, and community involvement. With integrated and evidence-based policies, regional budgets can become a strategic instrument in reducing structural unemployment and promoting inclusive growth in Aceh.
2. The Aceh Provincial Government should shift the focus of economic development to sectors with high labor absorption capacity, such as modern agriculture, light manufacturing, and the creative economy. Fiscal policies and investment incentives need to be directed to support the growth of these sectors and promote the creation of real jobs.
3. The Education Office and the Labor Office need to collaborate in developing job training programs that align with market needs. Vocational curricula should be regularly updated with input from industry players to ensure graduates' skills are truly relevant.
4. The local government must provide access to microfinancing, business mentoring, and digitalization for Micro, Small, and Medium Enterprises (MSMEs) so that this sector can grow faster and absorb more workers, especially in rural areas.
5. Investor selection should be more stringent, prioritizing investments that generate local added value and employment. The local government can offer incentives to investors who provide job training and employ local residents.
6. The growth of Gross Regional Domestic Product (GRDP) should not be the sole indicator of regional economic success. A comprehensive evaluation of development policies is needed to ensure they are more inclusive and focused on reducing unemployment, not just on economic output

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