

Determinants of Economic Growth in South Buru District

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Keywords:

Determinants, Economic Growth

Abstract

Economic growth is a complex phenomenon influenced not only by conventional economic factors, such as investment and labor availability, but also by non-economic determinants, including education levels, health conditions, and other social variables. This study aims to analyze the effects of labor, regional government expenditure, and electricity production on economic growth in South Buru Regency. An explanatory quantitative research method was employed in this study. Data were collected through a literature review of relevant secondary sources. The data were analyzed using multiple linear regression analysis. The results indicate that labor has a positive and statistically significant effect on economic growth. Regional government expenditure also has a positive and statistically significant effect on economic growth. Likewise, electricity production has a positive and statistically significant effect on economic growth. Simultaneously, labor, regional government expenditure, and electricity production are shown to be key factors influencing the dynamics of economic growth in South Buru Regency.

INTRODUCTION

Economic growth serves as an indicator of the level of social welfare in a region or country (Zhafira et al., 2025). A region's economic growth is generally proxied by changes in Gross Regional Domestic Product (GRDP). However, in regions still in the development stage, growth between sectors often does not occur simultaneously and harmoniously. This condition is partly due to limited development budgets, which in turn necessitates prioritization. The focus is shifted to economic sectors deemed potential to act as leading sectors or primary drivers of economic growth (Sukirno, 2007; Rohmini et al., 2025).

Economic growth is a complex phenomenon determined not only by conventional economic factors, such as investment and labor availability, but also by non-economic determinants, including education levels, health, and other social variables. Based on various empirical studies, a comprehensive analytical approach is needed that simultaneously integrates both economic and non-economic dimensions to measure their respective impacts on economic growth performance.

Theoretically, workforce growth is a fundamental component in increasing a region's economic output, as explained in the framework of the endogenous growth model (Romer, 1990). In the context of South Buru Regency, the development of the quantity and quality of the workforce is significantly correlated with the dynamics of the regional economy, which still relies on the agriculture, fisheries, and basic services sectors. A recent empirical study by Asia et al. (2025) in the context of an archipelagic region confirmed that the addition of a productive-age workforce, if accompanied by adequate absorption, can be a driving force for increasing Gross

Regional Domestic Product (GRDP). In South Buru Regency, the demographic transition marked by an increase in the proportion of the working-age population has the potential to form a demographic dividend, but its realization is highly dependent on the capacity of local economic sectors to create sustainable employment. The growth of the workforce in South Buru Regency can have both positive and negative impacts on overall economic growth. On the one hand, it provides the human resource base necessary for output expansion. On the other hand, without being accompanied by improvements in quality, spatial equality, increased TPAK, and adequate capital accumulation, the quantitative increase in the workforce has the potential to cause a decline in average productivity and pressure on the labor market.

Another factor contributing to the economic growth of South Buru Regency is regional spending. Regional spending plays a crucial role as the primary fiscal instrument of local governments in driving economic growth, including in island regions such as South Buru Regency. Empirical studies confirm that the effectiveness of regional spending is largely determined by the composition and quality of its management, not simply its nominal value. Simanjuntak et al. (2025) showed that capital spending on basic infrastructure (such as roads, ports, and electricity networks) has the highest multiplier effect on local economic activity, particularly in underdeveloped areas. In South Buru, which is geographically dispersed, increasing the allocation of capital spending for inter-island and village connectivity infrastructure is expected to directly reduce logistics costs, improve market access for local commodities, and attract new investment, thus serving as a fundamental stimulus for growth.

The availability of reliable electrical energy is a fundamental prerequisite for regional economic growth. Electricity production by PLN serves as an enabling factor that boosts business sector productivity, expands economic operating hours, and improves the community's quality of life. Sihombing and Suwarno (2021) emphasized that increasing the capacity and reliability of electricity supply in underdeveloped areas has a significant positive elasticity to Gross Regional Domestic Product (GRDP), primarily through the stimulation of the manufacturing, trade, and modern service sectors. In the context of South Buru, increased electricity production is strongly suspected to be correlated with economic activity in fisheries production centers, plantations, and administrative centers. In this study, electricity infrastructure is proxied by the amount of electricity produced (kWh) by PLN. Production reflects electricity consumption by the community for various purposes. In South Buru Regency, electricity infrastructure has increased from year to year in terms of production.

The aim of this study is to analyze the influence of labor, regional spending, and electricity production on economic growth in South Buru Regency. This study uses the method Explanatory quantitative research. Data collection was conducted through a literature review, namely quantitative secondary data published by competent government institutions such as the Central Statistics Agency (BPS) of Maluku Province, the Central Statistics Agency (BPS) of South Buru Regency, and other relevant agencies. Secondary data includes various economic data, especially Gross Regional Domestic Product (GRDP), workforce, regional spending, and electricity production. To test the hypothesis, the data were analyzed using multiple linear regression analysis. However, the data were previously tested using Classical assumption tests were conducted to ensure the equality of the tested data, including normality, multicollinearity, heteroscedasticity, and autocorrelation. Furthermore, to test for significant relationships between variables, partial tests (t-test), simultaneous tests (F-test), and the coefficient of determination (R²) were used

METHODS

Types and Approaches of Research

This study uses a qualitative approach with descriptive-analytical methods to analyze the effectiveness of regional policies in reducing stunting in South Buru Regency. A qualitative approach was chosen because it allows for an in-depth understanding of the policy formulation and implementation process, the roles of policy actors, cross-sector coordination mechanisms, and the factors influencing the success and obstacles to implementing stunting reduction policies.

Location and Time of Research

This research was conducted in South Buru Regency, Maluku Province. The location was selected based on the high prevalence of stunting, the island characteristics of the region, limited access to basic services, and the implementation of stunting reduction policies aligned with national policies. These conditions make South Buru Regency a suitable location for a study on the effectiveness of regional policies.

The study covers the period 2022–2024, a crucial phase in strengthening stunting reduction policies in the regions, including stunting-based budgeting and the implementation of eight convergence actions. Primary data collection was conducted in August 2025, while secondary data was obtained from official documents and publications during the study period.

Data Sources and Types

This study used both primary and secondary data. Primary data were obtained through in-depth interviews with stakeholders directly involved in stunting reduction policies and through field observations. Secondary data were obtained from regional policy documents, government performance reports, stunting and socioeconomic statistics from the Central Statistics Agency (BPS), and relevant scientific publications.

Data Collection Techniques

Data collection techniques included in-depth interviews, documentation studies, and field observations. Semi-structured interviews were conducted to gather information on policy implementation, cross-sector coordination, and obstacles and strategies for addressing stunting.

Research Informants

Research informants were selected purposively based on their involvement and knowledge of stunting reduction policies. Informants included local government officials and staff, policy implementers in the field, village governments, community leaders, and other relevant parties. The number of informants was not strictly determined but adjusted according to data needs until data saturation was reached.

Data Analysis Techniques

Data analysis was conducted qualitatively and descriptively through the stages of data reduction, data presentation, and drawing and verifying conclusions. Data were obtained from interviews and observations.

RESULTS AND DISCUSSION

Descriptive Statistical Analysis.

The aim of this analysis is to provide an initial overview of the characteristics of the data distribution of each variable, including measures of central tendency and dispersion, as a basis for further econometric analysis.

Table 1.
Descriptive Statistics

	N	Min.	Max.	Mean	Std. Dev.
Var1	14	560,886,950	1,069,470,000	806,607,272.14	172,123,456.78*
Var2	14	19,803	40,191	26,969.64	7,123.45*
Var3	14	306,600,869,000	866,035,384,400	584,234,234,485.71	175,432,098,765.43*
Var4	14	2,318,648	15,262,353	9,197,004.64	4,123,456.78*
Valid N	14				

Source: processed data

Descriptive statistical analysis was conducted on four research variables which included regional economic growth, number of workers, amount of regional spending, and electricity production in South Buru Regency with the following results:

1. Economic growth (Y) shows a minimum value of 560,886,950 and a maximum value of 1,069,470,000 with an average of 806,607,272.14. The relatively high standard deviation of 172,123,456.78 indicates significant variation in economic growth over time. The wide range between the minimum and maximum values indicates fluctuating economic growth dynamics during the observation period.
2. The number of workers (X1) had the lowest value of 19,803 people and the highest was 40,191 people. The average number of workers during the study period was 26,969.64 with a standard deviation of 7,123.45. The variation in the number of workers data was moderate, indicating an increase in labor absorption from year to year, although with not too extreme fluctuations.
3. The regional expenditure variable (X2) recorded a minimum value of 306,600,869,000 and a maximum value of 866,035,384,400. The average regional expenditure was at the level of 584,234,234,485.71 with a very high standard deviation of around 175,432,098,765.43. The high standard deviation reflects significant volatility in the regional expenditure budget, possibly caused by changes in fiscal policy or special programs that require large allocations of funds.
4. Electricity production (X3) varies from 2,318,648 KWh to 15,262,353 KWh. The average electricity production is 9,197,004.64 with a standard deviation of 4,123,456.78. The variation in electricity production data shows a consistent increase over time, although there are some fluctuations in the middle of the period. The increase in electricity production capacity can be an indicator of the development of the industrial and household sectors in the region.

The varying characteristics of the data, particularly for regional spending and economic growth, suggest that both variables may be highly responsive to policies or external factors. Meanwhile, employment and electricity production tend to be more stable, although both show an upward trend. This provides insight that economic growth in South Buru Regency is supported by increases in regional spending, labor absorption, and electricity supply, albeit with varying dynamics.

Multiple Linear Regression Analysis

Table 2
Regression Calculation Results

Dependent Variable: Y				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.544994	0.081321	6.701784	0.0001
X2	0.131193	0.048926	2.681465	0.0230
X3	0.117027	0.042830	2.732332	0.0211
C	9.528563	1.102104	8.645791	0.0000
R-squared	0.972798	Prob(F-statistic)		0.000000
Adjusted R-squared	0.964637	Durbin-Watson stat		1.588991
F-statistic	119.2060			

Source: processed data

Based on the results of the multiple linear regression estimation carried out, the interpretation of the influence of each independent variable on economic growth (Y) in South Buru Regency can be described as follows:

$$Y = 9,529 + 0,545X_1 + 0,1331X_2 + 0,117X_3 + \varepsilon \dots\dots\dots (3)$$

Classical Assumption Test

A. Normality Test

The results of the normality test using the Jarque – Bera test can be seen in the following figure.

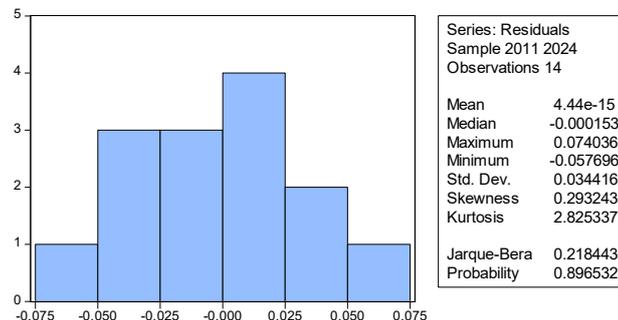


Figure 1
JB Test

The image above shows that the probability value is 0.897, which means $> \alpha$ by 5%, so it can be concluded that the research data is normally distributed.

B. Data Linearity Test

Linearity test using Ramsey RESET test, the results are shown in the following table.

Table 3
Ramsey RESET Test

F-statistic	3.147748	Prob. F(1,9)	0.1098
Log likelihood ratio	4.198870	Chi-Square Prob.(1)	0.0405

Source: processed data

The table above shows that the F-Statistic probability value is 0.1098 where $> \alpha$ is 5% so it is concluded that the independent variable is linearly related to the dependent variable.

C. Multicollinearity Test

The results of the analysis show that the calculation results between the independent variables show that none of the VIF values are greater than 10, which indicates that the results of the regression analysis obtained are free from multicollinearity Rahmanta (2009).

D. Heteroscedasticity Test

Table 4
Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.577120Prob. F(3,10)	0.6431
Obs*R-squared	2.066176Chi-Square Prob.(3)	0.5588
Scaled explained SS	0.962109Chi-Square Prob.(3)	0.8104

Source: processed data

The table above shows that the probability values of all variables are greater than the α value, so it can be concluded that there is no heteroscedasticity in the results of the regression model.

E. Autocorrelation Test

The results of the autocorrelation test are shown in table 4.5 as follows.

Table 5
Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.158009Prob. F(2,8)	0.8564
Obs*R-squared	0.532017Chi-Square Prob.(2)	0.7664

Source: processed data

The table above shows that the probability value is $0.7664 > \alpha$, so it can be said that there is no autocorrelation.

From all the testing techniques used to test the model found, it can be concluded that the regression model is included in the BLUE (Best Linear Unbiased Estimator) so it is good to use for estimation or forecasting.

Statistical Test

A. Partial Significance Test (t-Test)

The calculation results in Table 2 show that the labor force variable has a probability value of 0.000. If α is set at 5 percent, then the probability is smaller than α . Therefore, it is concluded that the labor force has a positive and significant effect on economic growth. This means that if there is a 1% change in the number of workers, economic growth will experience a change of 0.545%, assuming that regional spending and electricity infrastructure do not change.

The regional spending variable has a probability value of 0.023. If α is set at 5 percent, then the probability is less than α . Therefore, it is concluded that regional spending has a positive and significant effect on economic growth. This means that a 1% change in regional spending will result in a 0.131% change in economic growth, assuming the workforce and electricity infrastructure remain unchanged.

The electricity production variable has a probability value of 0.021. If α is set at 5 percent, then the probability is less than α . Therefore, it is concluded that electricity infrastructure has a positive and significant effect on economic growth. This means that a 1% change in the amount

of electricity infrastructure will result in a 0.117% change in economic growth, assuming the workforce and regional spending remain unchanged.

B. Simultaneous Test (F Test)

Based on the calculation results in Table 2, the F value is 119.206 and the probability value is 0.000. If α is set at 5 percent, the probability is smaller than α , so it is concluded that the three independent variables, namely labor, regional spending, and electricity production, together have a positive and significant effect on economic growth at α of 5 percent.

C. Coefficient of Determination (R²)

The calculation results in table 2 show that the R² value is 0.9728 or 97.28 percent. It can be concluded that the variables of labor, regional spending and electricity production have the ability to explain the variation in the rise and fall of the economic growth variable by 97.28%, while the remaining 2.72% is determined by other variables outside the analysis model.

DISCUSSION

The Influence of Labor on Economic Growth

Table 2 shows that the coefficient of the number of workers (X1) is 0.545 and is statistically significant at the 5% alpha confidence level (probability of 0.000), indicating that each additional unit of workers will increase economic growth by 0.545 units, assuming other variables remain constant. This finding confirms the important role of labor as a factor of production in driving economic activity in the region, in line with the endogenous growth theory that emphasizes the accumulation of human resources. This study proves that labor plays an important and positive role in driving economic growth. This finding is in line with economic growth theories that state labor as a major determinant. Its influence occurs primarily through productivity; when labor productivity increases, the economy's ability to produce goods and services also increases. This study's findings are consistent with research conducted by Chung and Hung (2020) and Ul Haque et al. (2019) which also concluded a significant positive relationship between labor and economic growth.

Overall, the transformation of South Buru Regency's workforce from a simple production factor into a productive human capital asset with strong purchasing power is inevitable. Integrated policies, combining increased productivity through education and training with expanded employment in high-value-added sectors, will create a double impact: boosting production capacity while expanding the domestic demand base. Therefore, improving the quality of the workforce is not only a social investment, but also a fundamental strategy for achieving inclusive and sustainable economic growth in South Buru Regency.

The Influence of Regional Spending on Economic Growth.

Table 2 shows that regional spending (X2) has a coefficient of 0.131 and is significant at the 5% alpha confidence level (probability 0.023). This means that a one-unit increase in regional spending will increase economic growth by 0.131 units, all other things being equal. This reflects the effectiveness of regional spending (through infrastructure spending, public services, and stimulus programs) as a fiscal instrument that has a positive impact on aggregate demand and local

economic capacity. This condition indicates that regional spending has a positive and significant contribution to economic growth.

These findings align with previous research, such as that conducted by Putri (2018), Fitriyani et al. (2020), and Fitriani et al. (2025), which emphasized that proper regional financial management, particularly the allocation of spending to productive sectors, can significantly contribute to economic growth. Thus, regional spending can be viewed as a form of strategic public investment. In the context of South Buru Regency, where private sector investment is still relatively limited, regional spending is the primary driver of economic activity. Therefore, the regional government is expected to act as a driving force through appropriate spending allocations oriented toward increasing production capacity and regional connectivity.

The Impact of Electricity Infrastructure on Economic Growth.

Table 2 shows that electricity production (X3) also has a positive and significant effect on economic growth with a coefficient of 0.117 (probability 0.0211). Each increase in electricity production by one unit will drive economic growth by 0.117 units. This result strengthens the proposition that the availability of adequate electrical energy is an important prerequisite for the productivity of the industrial, trade, and household sectors, which in turn drives overall economic growth. This condition indicates a positive and significant influence of electricity infrastructure on economic growth. Electricity production, which reflects the level of community energy consumption, has a close correlation with increased economic activity. The use of electrical energy is identified in various productive community activities, including the expansion of production capacity and the emergence of new business units, especially in the micro, small, and medium business sectors, such as the printing industry, hotels, restaurants, and culinary businesses. Furthermore, electrical energy is widely utilized in various economic sectors, including industry, the business world, and households, thus playing a role as one of the main driving factors in regional economic dynamics.

This finding aligns with research by Anggraini et al. (2021), which concluded that electricity availability has a positive and significant impact on manufacturing production in Indonesia. Electricity availability enables the implementation of distance learning systems, human resource capacity development, and improved workforce quality. This impact not only increases productivity but also creates space for innovation, which plays a crucial role in supporting economic growth. The findings of this study are confirmed by the results of studies by Afriyana et al. (2023), Aldona et al. (2021), and Alie (2023), which consistently identified the positive and significant influence of electricity infrastructure on economic growth. This convergence of findings confirms the strategic role of electricity availability as a key determinant in driving economic activity.

Implicitly, this demonstrates that electrical energy infrastructure has evolved into an integral factor of production, inseparable from other physical factors of production. Therefore, strengthening electrical infrastructure is seen as capable of driving increased economic activity and the production of goods and services. The resulting policy implication is the need for more intensive synergy between regional and central governments, particularly through the Ministry of State-Owned Enterprises, to accelerate the development of a broader, more reliable, and higher-quality electricity network.

The Influence of Labor, Regional Spending and the Amount of Electricity Production Together on Economic Growth

Table 2 shows that the constant value of 9.529 indicates that if the variables of the number of workers (X1), regional spending (X2), and electricity production (X3) are assumed to be zero, then regional economic growth will remain at a level of 9.53 units. This regression model has an R-squared value of 0.9728, which means that 97.28% of the variation in economic growth can be explained by the three independent variables in the model. Thus, it can be concluded that increasing the number of workers, regional spending, and electricity production are key factors that can be optimized to accelerate economic growth in South Buru Regency.

CONCLUSION

Labor has a positive and significant effect on economic growth. The regression coefficient of 0.545 (probability value = 0.0001) indicates that every one-unit increase in the workforce will drive economic growth by 0.545 units, all other things being equal. This finding aligns with endogenous growth theory, which emphasizes the role of human resource accumulation as a driving force of economic activity..

Regional shopping has a positive and significant effect on economic growth. A coefficient of 0.131 (probability value = 0.0230) indicates that regional spending functions as an effective fiscal instrument in stimulating aggregate demand and expanding production capacity through a multiplier effect, particularly when allocated to infrastructure capital expenditure.

Electricity production has a positive and significant effect on economic growth. The regression coefficient of 0.117 (probability value = 0.0211) reflects that the availability of adequate electrical energy is a fundamental prerequisite for increasing the productivity of the industrial, trade, and service sectors, as well as supporting the expansion of economic access for households and micro-enterprises.

Simultaneously, these three variables were able to explain 97.28% of the variation in economic growth ($R^2 = 0.9728$), with the regression model meeting the classical assumptions (BLUE). This confirms that labor, regional spending, and electricity production are key factors determining the dynamics of economic growth in South Buru Regency.

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