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Original Article

The Influence of Regional Government Spending, Labor and Investment on Economic Growth in Districts/Cities in West Nusa Tenggara Province 2014-2023

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This article contributes to:

Abstract. This study aims to analyze the effect of Regional Government Spending, Labor and Investment on Economic Growth in Regencies/Cities in West Nusa Tenggara Province in 2014-2023. This research method is quantitative research with an associative approach. This study uses secondary data obtained from the Central Statistics Agency (BPS), Regional Finance Agency (BKD), Investment and One-Stop Integrated Service Agency (DPMPTSP), and Manpower and Transmigration Agency during a certain period. The analysis method used is the Ordinary Least Square (OLS) method as an estimation technique through Eviews 12 software. For the calculation using Panel Data Analysis with Model Selection Test, Classical Assumption Test and Hypothesis Test. The results of the study indicate that the Regional Government Spending variable has a positive and significant effect on economic growth. The Labor variable has a positive but not significant effect, and the Investment variable has a positive and significant effect on economic growth in West Nusa Tenggara Province. Simultaneous calculations provide results that the variables of Regional Government Expenditure, Labor, Investment have a positive and significant effect on economic growth with a large influence of 93.01% percent, and the remaining 6.99 percent is influenced by other variables not included in the model.

Keywords: Economic Growth, Regional Government Expenditure, Labor, Investment.

1. Introduction

West Nusa Tenggara (NTB) Province is located in the central part of the Nusa Tenggara Islands, between Bali Province to the west and East Nusa [1] Tenggara Province to the east. The capital of the province is Mataram City, which is also the center of government. NTB consists of 8 regencies and 2 cities, including Mataram City, with distinctive economic characteristics, which rely on the agriculture, tourism, forestry, fisheries, and trade sectors as their main pillars. Economic development in NTB is greatly influenced by the dynamics of regional income and budget allocations from the central government [2]. Economic development is a multidimensional process that includes major changes in social structures, societal attitudes, national institutions, as well as the acceleration of economic growth, reduction of inequality, and the elimination of absolute poverty [3]. One of the main indicators for measuring the progress of economic development is economic growth, which reflects the level of economic activity in a region. High and sustainable economic growth is very important to improve people's welfare and spur development [4].

Gross Domestic Product (GRDP) is an indicator used to measure the level of economic growth of a region, both at the national, provincial, and district/city levels.

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Changes in GRDP from period to period provide a real picture of the success of regional policy implementation [5]. Based on the graph of the economic growth rate of NTB Province from 2014 to 2023, there are fluctuations influenced by various factors, including natural disasters and the COVID-19 pandemic. Regional Government Spending, as regulated in Law No. 32 of 2004 concerning Regional Government, plays an important role in driving regional economic growth [6]. Regional spending is divided into direct spending and indirect spending, which includes spending on employees, goods and services, and infrastructure development (DJPK Ministry of Finance). Effectively increasing regional spending can drive economic activity and improve community welfare, as reflected in the development of the Mandalika Special Economic Zone (KEK).

In addition to local government spending, other factors that influence economic growth are labor and investment. Labor is the main capital in economic development, and the quality and quantity of labor can increase regional productivity and competitiveness. Effective education, training, and employment policies have a significant impact on improving labor skills and productivity [7]. Meanwhile, investment, both from within the country and abroad, plays an important role in increasing regional production capacity and accelerating economic growth [8]. Based on various studies, both local government spending, labor, and investment have been proven to have an impact on economic growth in various regions. Research conducted by Ribaj and Mexhuani [9] shows that direct and indirect spending have a significant impact on economic growth. In contrast, research by Novitasari et al. [10] shows that labor does not have a significant impact on economic growth, although increasing the number of workers can encourage the production of goods and services.

The purpose of this study is to analyze the partial and simultaneous influence of local government spending, labor, and investment on economic growth in the regencies/cities of West Nusa Tenggara Province during the period 2014-2023.

2. Method

2.1 Types and Locations of Research

This study uses a quantitative method with an associative approach. The quantitative method was chosen because this study aims to test the hypothesis using numerical data that is analyzed statistically. The associative approach is used to determine the relationship between several variables, in this case economic growth as the dependent variable and investment, local government spending, and the number of workers as independent variables. The study was conducted in the West Nusa Tenggara Province, which consists of 10 districts/cities [11]. This area was chosen because its economic growth rate is relatively low compared to other provinces in Indonesia. The data collected covers the time period from 2014 to 2023.

2.2 Types, Sources and Data Collection Techniques

The data collection techniques used in this study are documentation and literature study. The documentation technique is carried out by recording and studying various relevant documents such as reports and data from the internet. Meanwhile, literature study is carried out by collecting and reviewing literature from various sources such as books, scientific journals, and articles related to the research topic. The type of data used is secondary data, namely data obtained indirectly through official institutions such as the Central Statistics Agency (BPS), the Regional Finance Agency (BKD), the Investment and One-Stop Integrated Service Office (DPMPTSP), and the NTB Provincial Manpower and Transmigration Office. The data is in the form of panel data that includes a combination of time series data (2014–2023) and cross sections (10 districts/cities).

2.3 Panel Data Analysis Model and Data Analysis Procedure

Data analysis was conducted using the panel data regression method, which is a combination of time series and cross-section data [12]. The model used is a linear regression model, with economic growth as the dependent variable, and investment, local government spending, and the number of workers as independent variables. Data processing was carried out with the help of EViews software. In panel data regression, three model approaches were used, namely the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). To select the best model, a series of tests were conducted: the Chow test was used to determine whether the CEM or FEM model was more appropriate; the Hausman test was used to choose between FEM and REM; and the Lagrange Multiplier test was used to choose between CEM and REM. The conceptual framework in this study can be seen in Figure 1.

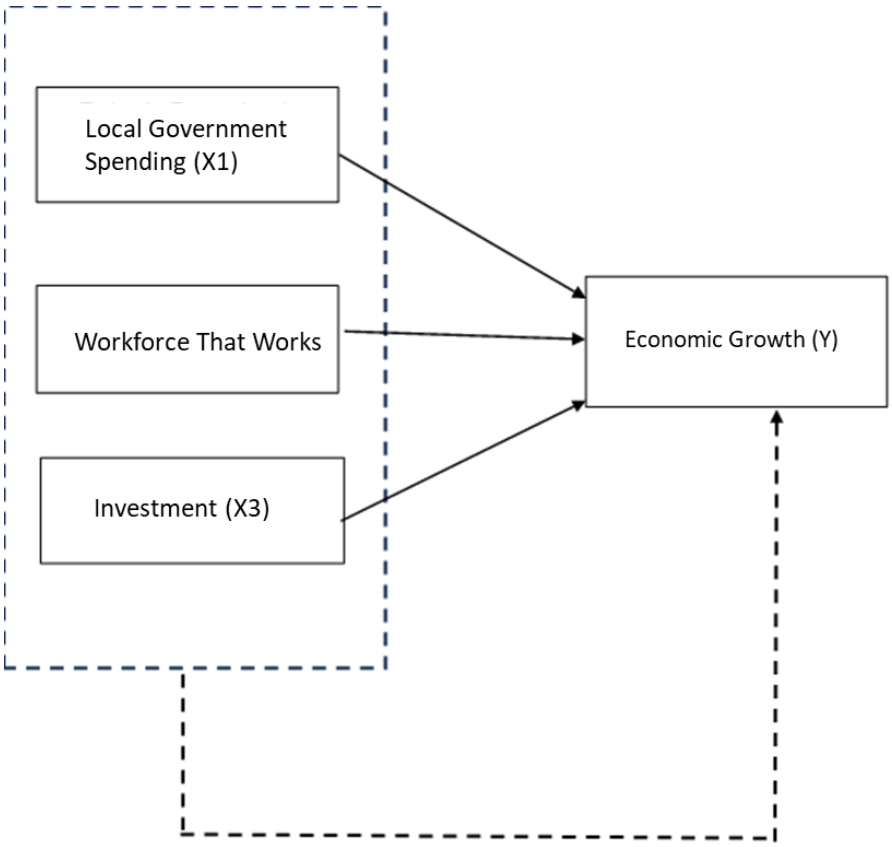

Figure 1. Conceptual Framework

2.4 Classical Assumption Test

To ensure the validity of the model, several classical assumption tests were performed. Normality and autocorrelation tests are not required in panel data, but multicollinearity tests are still performed to determine whether there is a high correlation between independent variables, as well as heteroscedasticity tests to see whether the error variance changes between cross-section units or over time.

2.5 Hypothesis Testing

Hypothesis testing is carried out using the t-test to determine the effect of each independent variable on the dependent variable partially, the F-test to see the effect of the independent variables simultaneously, and the analysis of the coefficient of determination (R^2) to determine how much the independent variables are able to explain the dependent variable.

3. Results and Discussion

3.1 Model Selection Test Results

The Chow test is used to determine the most appropriate panel data regression model between the Common Effect Model (CEM) and the Fixed Effect Model (FEM). Decision making is based on the probability value (p-value) of the F test. If the p-value> 0.05 then H0 is accepted and the model used is CEM. Conversely, if the p-value <0.05 then H0 is rejected and the model used is FEM. The results of the chow test can be seen in Table 1.

Table 1 Chow Test Results

Effects Test	Statistics	Prob.
	Hasil Uji Chow	
Cross-section F	60.411790	0.0000
Cross-section Chi-Square	198.093189	0.0000
	Hausman Test Results	
Cross-section random	84.725604	0.0000

The regression results show that the p-statistic F is 0.0000 <0.05, which means that H0 is rejected and HA is accepted, so the model selected in the Chow Test is the Fixed Effect Model (FEM). After obtaining the fixed effect results in the Chow Test, the researcher conducted the Hausman test. The Hausman Test is a test method used to select the appropriate model between the fixed effect and random effect models. The regression results show that the p-statistic chi square is 0.0000 <0.05, which means that H0 is rejected and HA is accepted, so the model selected in the Hausman Test is the Fixed Effect Model (FEM). Based on the results of the Chow Test and the Hausman Test, the selected model is the Fixed Effect Model (FEM) so there is no need to conduct the Legrange Multiplier (LM) Test.

3.2 Classical Assumption Test Results

According to Gregorich et al. [13] the multicollinearity test aims to test whether a correlation is found between independent variables (independent) with the regression model. In testing multicollinearity, it can be seen from if the value obtained from each variable is > 0.80 then it can be concluded that multicollinearity occurs in the study. The results of the multicollinearity test can be seen in Table 2.

Table 2. Multicollinearity Test Results

	X1	X2	X3
X1	1.000000	0.761390	0.257549
X2	0.761390	1.000000	-0.120882
X3	0.761390	-0.120882	1.000000

The correlation coefficient of X1 and X2 is 0.761390 <0.80, X1 and X3 is 0.257549 <0.80, X2 and X3 is -0.120882 <0.80, it can be concluded that the data is free from multicollinearity. Furthermore, the results of the heteroscedasticity test using the gletsjer test can be seen in Table 3.

Table 3. Heteroscedasticity Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.27E+09	5.61E+08	2.254082	0.0267
X1	-0.000633	0.000380	-1.666492	0.0992
X2	2797.349	3413.774	0.819430	0.4148
X3	-0.000151	4.34E-05	-3.464102	0.0008

It can be seen that Prob. on X3 is 0.0008 < 0.05, meaning that the X3 model on the data is not free from heteroscedasticity. Therefore, researchers use another alternative, namely healing heteroscedasticity.

Table 4. Heteroscedasticity Healing Results

Parameter	FE No Weighted	FE Weighted
Prob. T-Statistic	All three < 0.05	All three < 0.05
R-squared	0..938619	0.984117
Prob(F-statistic)	0.000000	0.000000

The 3 (three) parameters above, there is basically no significant difference, only in R-squared where the FE weighted model is greater (better) than the FE unweighted so it can be concluded that there is no heteroscedasticity in the FE model [14].

3.3 Hypothesis Test Results

The t-test is used to determine the partial influence of each independent variable, namely Regional Government Spending, Labor, and Investment on Economic Growth. According to Purwanto et al. [15], if the p-value <0.05 then the variable has a significant partial influence, while if >0.05 then it is not significant. The complete results of the t-test can be seen in Table 5.

Table 5. t-Test Results

Variable	Coefficient	t-statistic	Prob.	F-stat.	Prob.	R^2
C	6.06E+09	5.6401	0.00	-	-	
X1 (Local Government Spending)	0.001743	2.398	0.01	110.86	0.00	0.93
X2 (Labor Force)	3995.439	0.611	0.54			
X3 (Investment)	0.000610	7.335	0.00			

The results of the t-test on the independent variable of local government spending (X1) obtained a t-statistic value of 2.398267> t-table -1.660 and a significant value of 0.0186 <0.05, so Ho is rejected and Ha is accepted, meaning that the local government spending variable has a positive and significant effect on economic growth. The results of the t-test on the independent variable of the working workforce (X2) obtained a t-statistic value of 0.611898> t-table -1.660 and a significant value of 0.5422> 0.05, so Ho is rejected and Ha is accepted, meaning that the working workforce variable has a positive and insignificant effect on economic growth. The results of the t-test on the independent variable of Investment (X3) obtained a t-statistic value of 7.335136> t-table -1.660 and a significant value of 0.0000 <0.05, so Ho is rejected and Ha is accepted, meaning that the Investment variable has a positive and significant effect on economic growth.

The F-statistic value of 110.8652> F-table is 2.467 and the significant value of Prob <α = 5% is 0.000000 <0.05. So Ho is rejected and Ha is accepted, meaning that the variables of Regional Government Expenditure, Workforce, and Investment have a significant effect on Economic Growth in the Regency/City of West Nusa Tenggara Province simultaneously. Based on the results of the panel data regression analysis above, the coefficient of determination or Adjusted R-Squared value of 0.9301 or 93.01% of Economic Growth in the Regency/City of West Nusa Tenggara Province in 2014-2023 is explained by independent variables consisting of Regional Government Expenditure, Workforce, and Investment while the remaining 6.99% can be explained by other variables not included in this research model.

3.4 Discussion

3.4.1 The Influence of Regional Government Spending on Economic Growth

The results of testing the effect of local government spending on economic growth can be seen in Table 5, the results of the t-test show that the probability value of the independent variable of local government spending (X1) is 0.0186 <0.05 and the coefficient is 0.001743, so Ho is rejected and Ha is accepted, meaning that the local government spending variable has a positive and significant effect on economic growth. These results are in line with research conducted by Surya et al. [16], but are contrary to

research conducted by Cologna et al. [17]. These results show that local government spending, both direct and indirect spending, plays an important role in supporting economic growth by using public funds to meet the needs of the community while also encouraging economic activity.

Encouraging economic growth requires fixed assets such as infrastructure and facilities that can support economic activities. The development of fixed assets is funded from the allocation of direct spending budget. If the economic growth of a region increases, the local government will increase its regional spending to improve and complete infrastructure and facilities with the aim of achieving better economic growth [18]. This is in accordance with the theory put forward by Wagner that in an economy if income increases, government spending will relatively increase. Thus, the H1 hypothesis states that Regional Government Spending has a positive and significant effect on economic growth in Regencies/Cities in West Nusa Tenggara Province.

3.4.2 The Influence of Working Labor on Economic Growth

The results of the test of the influence of the working workforce on economic growth can be seen in Table 5, the results of the t-test which show the results of the probability value of the independent variable of the working workforce (X2) of 0.5422> 0.05 and a coefficient of 3995.439, so Ho is rejected and Ha is accepted, meaning that the working workforce variable has a positive and insignificant effect on economic growth. The results of this study are in line with research conducted by Shulla et al. [19], but contrary to research conducted by Esen and Celik kecili [20]. These results show that the working workforce has a positive and insignificant impact on economic growth. An increase in the working workforce can actually potentially slow down economic growth.

This phenomenon arises because even though there is an increase in the number of workers working, the lack of adequate employment opportunities and suboptimal productivity can hamper economic growth in the Regency/City of West Nusa Tenggara Province. This is in accordance with the theory put forward by Robert Solow and Trevor Swan that good economic growth is influenced by production factors, namely the existence of capital, labor and technological progress. Thus, the H2 hypothesis states that the Working Workforce has a positive and insignificant effect on economic growth in the Regency/City in West Nusa Tenggara Province.

3.4.3 The Impact of Investment on Economic Growth

The results of testing the influence of Investment on economic growth can be seen in Table 5, the results of the t-test which show the results of the probability value of the independent variable Investment (X3) of 0.0000> 0.05 and a coefficient of 0.000610, so Ho is rejected and Ha is accepted, meaning that the Investment variable has a positive and significant effect on economic growth. The results of this study are in line with research conducted by Ning et al. [21] but are contrary to research conducted by Cai et al. [22]. These results show that the realization of Investment is influenced by several potential factors such as the Mandalika project where the Regency/City in West Nusa Tenggara is the center of attention in organizing MotorGP and other strategic tourism projects will attract many investors to increase regional economic growth. This is in accordance with the theory put forward by Robert Solow and Trevor Swan that investment plays an important role in long-term economic growth, where sustainable economic growth is economic growth supported by investment. Growth supported by investment will increase the productivity of a country/region. Thus, hypothesis H3 states that investment has a positive and significant effect on economic growth in regencies/cities in West Nusa Tenggara Province.

3.4.4 Simultaneous Influence of Variables

The F-test results show an F-statistic value of 110.8652 with a probability of 0.000000, which means that the regression model is simultaneously significant. This means that the three independent variables—Local Government Spending (X1), Labor (X2), and Investment (X3)—jointly have a significant effect on the dependent variable, namely Economic Growth in Regencies/Cities of West Nusa Tenggara Province in the period 2014–2023. The coefficient of determination (R^2) value of 0.930153 indicates that 93.02% of the variation in economic growth can be explained by the three variables, while the remaining 6.98% is explained by other factors outside the model. Theoretically, this finding is in line with Solow's neoclassical economic growth theory, which emphasizes the role of capital accumulation (investment), labor force growth, and technological progress in driving output growth. In this context, government spending can function as an instrument to provide public infrastructure and improve economic efficiency, labor reflects the main production factor in the economic process, and investment reflects the addition of production capacity. All three are the main inputs in the macroeconomic production function.

Empirical phenomena in West Nusa Tenggara show a close correlation between the intensity of regional spending on infrastructure development, increasing productive employment, and the entry of private sector investment with regional economic growth. In the analysis period, regions with increased capital spending and more aggressive local economic development, such as Mataram City and Central Lombok Regency, showed a higher economic growth trend compared to other regions with relatively stagnant public spending. This study is also in line with the findings of Ning et al. [21], who concluded that local government spending has a positive impact on increasing economic activity through the construction of public facilities and fiscal distribution. Meanwhile, a study by Cruz [23] showed that optimally absorbed labor will increase real sector output. This is also supported by Cardoso et al. [24], who stated that increasing investment has a direct impact on economic growth through a multiplier effect on other sectors, such as consumption and public income.

4. Conclusion

Based on the results of the analysis that has been carried out, it can be concluded that Regional Government Expenditure partially has a positive and significant influence on economic growth in the Regency/City of West Nusa Tenggara Province in the period 2014-2023. Meanwhile, the working workforce has a positive but not significant effect on economic growth. On the other hand, Investment also has a positive and significant effect on economic growth in the region. Simultaneously, the three variables, namely Regional Government Expenditure, Labor, and Investment, have a significant influence on economic growth in the Regency/City of West Nusa Tenggara Province. Therefore, it is recommended that regional governments can create a more conducive investment climate by simplifying the licensing process and improving the quality of human resources. This step is expected to encourage increased investment which will ultimately accelerate economic growth. In addition, more effective management of Regional Government Expenditure needs to be carried out to support the regional economy, as well as the creation of better jobs to increase labor productivity, which in turn will also contribute to economic growth.

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6. Declaration

Author contributions and responsibilities - The authors made major contributions to the conception and design of the study. The authors took responsibility for data analysis, interpretation and discussion of results. The authors read and approved the final manuscript.

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Competing interests - The authors declare no competing interests.

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