

The Influence of Economic Growth, Unemployment, and Capital Expenditure in East Nusa Tenggara Province

Najma Afifa Hartania^{1*}, Retno Febriyastuti Widyawati²

¹ Economic Development, Faculty of Economic and Business, Universitas Negeri Semarang, Semarang, Indonesia

² Economic Development, Faculty of Economic and Business, Universitas Negeri Semarang, Semarang, Indonesia

*Corresponding author's e-mail: najmaafifa14@students.unnes.ac.id

ABSTRACT

East Nusa Tenggara Province is the third poorest province in Indonesia. This study aims to analyze the effect of macroeconomic variables on the poverty rate in East Nusa Tenggara Province for the period 2017- 2023. East Nusa Tenggara Province is the third poorest province in Indonesia. Gross Regional Domestic Product (GRDP) per capita, open unemployment rate, and capital expenditure are the independent variables used in this study. This study uses panel data regression analysis using a random effects model (REM) with secondary data from 22 Districts/Cities in East Nusa Tenggara Province obtained from the Central Statistics Agency (BPS). According to this study, GRDP per capita has a significant negative effect, the Open Unemployment Rate variable has a positive and significant effect, while the capital expenditure variable has a positive and insignificant effect. Policy makers can learn a lot from this study, such as the importance of increasing economic growth and improving the quality of human resources, as well as how to optimize the capital expenditure budget for public investment in order to combat poverty effectively.

Keywords: Capital Expenditure, GRDP, Poverty, Unemployment,

Introduction

Development is a process to achieve prosperity by developing the existing economy in society (Fajriah, 2021). Economic development must result in strong economic growth, reduce poverty and unemployment, and minimize income disparities between regions (Todaro & Smith, 2015). Poverty is a structural problem that reflects the failure of development. As a developing country, poverty in Indonesia is one of the biggest challenges. Various efforts have been made to improve the welfare of the community, but the poverty rate remains high, threatening social and economic stability. East Nusa Tenggara is the province with the third highest poverty rate after Papua and West Papua. The province of East Nusa Tenggara has unique regional characteristics and more varied socio-economic dynamics. East Nusa Tenggara has 22 Regencies/Cities across various islands, far more than Papua, which only has 11 regencies/cities. NTT is a region with geographical challenges and ethnic and cultural diversity. The geographical condition of NTT is an archipelago with limited access. Poverty in NTT is also influenced by the unequal distribution of wealth, the largest absorption of labor in the informal sector with low productivity, and minimal access to technology and productive resources (Mahendra & Mahaendra, 2025). NTT has abundant and diverse natural resources, but this potential has not been optimally managed to provide significant economic added value.

During the 2017-2023 period, the poverty rate in East Nusa Tenggara fluctuated and remained above the national poverty level. According to the Central Statistics Agency, the poverty rate in East Nusa Tenggara in 2017 reached 21.85 percent, then decreased to 20.90 percent in 2020. In 2021, it increased due to the Covid-19 pandemic. The following year, the

poverty rate was successfully reduced, reaching 19.96 percent in 2023. This figure is still relatively high because it is twice as high as the national poverty rate in the same year, which was 9.36 percent. This indicates that the local government's poverty alleviation policies are still not optimal.

Poverty in East Nusa Tenggara can be caused by various factors, including gross regional domestic product (GRDP) per capita, unemployment, and regional spending. According to Saputri et al. (2023), a higher GRDP per capita will create potential sources of regional income because people's incomes will increase. Unemployment is an obstacle to economic development because the unemployed do not contribute to the economy even though they still need access to clothing, food, and shelter (Feriyanto et al., 2020). Government intervention also plays a role in poverty alleviation, such as capital expenditure. Capital expenditure is one type of expenditure that can improve regional infrastructure. Increased capital expenditure can reduce regional poverty levels because the provision of infrastructure can fulfill basic services for the community (Amami & Asmara, 2022)

Although much research has been conducted on poverty, studies on the province of East Nusa Tenggara are still limited. In addition, government spending, particularly regional capital expenditure as a factor that can affect poverty, has not been studied in depth, especially in a single model together with the variables of per capita GRDP and the open unemployment rate. According to Giorgio, (2024) research, per capita GRDP has a negative and significant effect on poverty. Research by Dung & Le (2023) found that government spending and per capita GRDP have a significant negative effect. Meanwhile, Mahpudin, (2020) found that per capita GRDP has an insignificant negative effect. According to research by bacarreza & cuartas, (2025), unemployment has a significant negative effect on poverty, and government spending has an insignificant negative effect on poverty. Meanwhile, according to Fatanza et al., (2023), unemployment has a positive and significant effect on poverty rates.

These discrepancies indicate the need for a more comprehensive study to understand poverty in East Nusa Tenggara Province. This study is expected to provide a more complete picture of the dynamics of poverty in East Nusa Tenggara and the factors that influence it.

Theoretical Framework and Hypothesis

This study uses several variables to examine the relationship between them. Per capita GRDP is the average income of individuals in a region, which is calculated by dividing the total Gross Regional Domestic Product (GRDP) of a region by the population of that region in the same period. A high GRDP in a region indicates that its residents have the ability to meet their needs. GRDP per capita has a negative effect on poverty rates. This means that when GRDP per capita increases, poverty rates tend to decrease. Previous studies have examined the effect of GRDP on poverty and found that GRDP has a direct impact on poverty rates. In addition, this study found that GRDP significantly reduces poverty (Ali et al., 2024)

The open unemployment rate is an indicator used to measure the percentage of

unemployment, which is the number of individuals who are actively seeking work but have not yet found it, compared to the total labor force in a region. The unemployed have no income, so the lack of income will push these individuals into poverty because they are unable to meet their daily needs. Korankye et al., (2021) stated in their research that unemployment has a positive and significant effect, so that an increase in unemployment can increase the poverty rate.

Capital expenditure is one type of expenditure that can improve regional infrastructure. An increase in capital expenditure can reduce regional poverty levels because the provision of infrastructure can fulfill basic services for the community (Amami & Asmara, 2022). According to research by Rahmawati et al., (2024) capital expenditure can also increase activity in sectors related to economic growth. Furthermore, a study by Falah & Rahmawati (2024) reveals that regional expenditure has an effect on poverty.

significant influence on the poverty rate; H1: GRDP has a significant influence on the poverty rate. The second variable (open employment rate), which is H0: TPT does not have a significant influence on the poverty rate; H2: TPT has a significant influence on the poverty rate. The last variable (Capital expenditure), which is H0: capital expenditure does not have a significant influence on the poverty rate; H3: capital expenditure has a significant influence on the poverty rate.

Research Methods

Samples and Sampling Techniques

This study focuses on East Nusa Tenggara Province, utilizing data from the Central Statistics Agency (BPS) covering the period from 2017 to 2023. The sampling technique used total sampling, which is using the entire population of 22 districts/cities in East Nusa Tenggara Province. This study is quantitative in nature, and the results are presented using descriptive analysis. The dependent variable used in this study is poverty, which is measured by the percentage of poor people in East Nusa Tenggara. Meanwhile, the independent variables consist of Gross Regional Domestic Product per capita in millions of rupiah, Open Unemployment Rate (TPT) in percent, and Capital Expenditure, which is part of the regional expenditure of East Nusa Tenggara Province in billions of rupiah.

The analysis method used in this study is multiple linear regression, using EViews 13 software. The regression equation model of the study, which has been transformed into a semi-log model, is as follows:

$$Y = \alpha_0 + \alpha_1 \log PDRB + \alpha_2 TPT + \alpha_3 BM + \mu \dots\dots\dots (1)$$

Based on this equation, the dependent variable (Y) is the poverty rate, while the independent variables (X) consist of Gross Regional Domestic Product (GRDP), Open Unemployment Rate, and Capital Expenditure.

Before testing the hypothesis using the t-test and F-test, a classical assumption test was conducted, as this study used secondary data and panel data regression. The results showed that the data met the classical assumption criteria, indicating that the model was suitable for further analysis.

In panel data analysis, three general estimation models are commonly used: the

General Effects Model, the Fixed Effects Model, and the Random Effects Model. To determine the most appropriate model, several model selection tests were conducted, namely the Chow Test, the Hausman Test, and the Lagrange Multiplier (LM) Test.

Results and Discussion

Before performing panel data regression estimation, classical assumption tests were conducted.

Normality Test

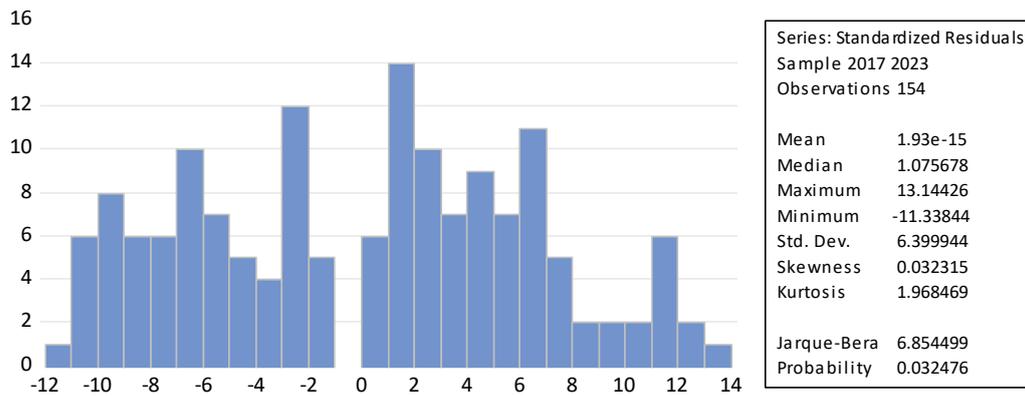


Figure 1.

Normality Test

Normality data test was tested using the Jarque-Berra method. The results showed that the residuals were not normally distributed, but based on the Central Limit Theorem, for large samples with more than 30 samples ($n > 30$), it can be assumed that the data meets the assumption of normal distribution (Dielman, 1961). Therefore, normality data is not a problem.

Multicollinearity Test

Table 1.

Multicollinearity Test

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	100.3847	51.41774	NA
LOGPDRB	1.021124	46.46600	1.121105
TPT	0.003286	1.141216	1.121960
LOGBM	0.021557	4.967773	1.012449

Multicollinearity testing was conducted to examine whether the regression method used was correlated with the independent variables. Based on the results of the test using the VIF method, it was found that the VIF value did not exceed 10, so it can be concluded that there was no multicollinearity between the independent variables in this study

According to Gujarati & Porter (2009), in the GLS approach, autocorrelation and heteroscedasticity tests have been considered BLUE. The REM model is designed to address

the problems of heteroscedasticity (non-constant error variance) and autocorrelation (correlation between errors over time) that often occur in panel data. Therefore, only normality and multicollinearity tests are performed. The results showed that all classical assumptions were satisfied, meaning that the regression model was BLUE (Best Linear Unbiased Estimator) and the results were valid for interpretation.

Chow Test

The Chow Test was conducted to determine the best model between the Common Effect Model (CEM) or the Fixed Effect Model (FEM). The Chow Test was performed using Eviews 13 with the results as shown in Table 2.

**Table 2.
Chow Test**

Effects Test	Statistic	d.f.	Prob.
Cross-section F	645.535526	(21,129)	0.0000
Cross-section Chi-square	718.296224	21	0.0000

The Chi-Square probability value of $0.0000 < 0.5$ indicates that the FEM model is better applied than the CEM model.

Hausman Test

The Hausman Test was conducted to determine the best model between the Fixed Effect Model (FEM) or the Random Effect Model (REM). The Hausman Test was performed using Eviews 13 with the results as shown in Table 2.

**Table 3.
Hausman Test**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.666974	3	0.4459

The Chi-Square probability value of $0.4459 > 0.05$ indicates that the REM model is better applied than the FEM model.

Lagrange Multiplier (LM) Test

The Lagrange Multiplier Test was conducted to determine the best model between the Fixed Effect Model (FEM) or the Random Effect Model (REM). The Lagrange Multiplier Test was performed using Eviews 13 with the results as shown in Table 3.

**Table 4.
Lagrange Multiplier Test**

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	416.6367 (0.0000)	2.431529 (0.1189)	419.0682 (0.0000)

The Breusch-Pagan probability value of $0.0000 < 0.05$ indicates that the REM

model is better applied than the CEM model.

1) Regression Results Analysis

Based on the model suitability tests, this study will use the Random Effect Model (REM). The regression results using the REM model are presented in the tables below:

T Test (Partial)

Table 5.
T Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	98.99529	10.01922	9.880540	0.0000
LOGPDRB	-8.468843	1.010507	-8.380789	0.0000
TPT	0.134124	0.057322	2.339825	0.0206
LOGBM	0.052013	0.146824	0.354255	0.7236

H0: Individual independent variables have no effect on the dependent variable. H1: Individual independent variables have an effect on the dependent variable. From the table above, the results of the hypothesis for each independent variable are as follows:

a. LogPDRB variable (PDRB per capita)

H0: Per capita GRDP individually has no significant effect on the poverty rate. H1: Per capita GRDP individually has a significant effect on the poverty rate.

The p-value for the LogPDRB variable is $0.0000 < 0.05$ with a coefficient of - 8.468843. This causes H0 to be rejected and H1 to be accepted, so that per capita PDRB has a significant negative effect on poverty.

b. TPT variable (Open Unemployment Rate)

H0: TPT individually has no significant effect on poverty levels. H1:

TPT individually has a significant effect on poverty levels.

The p-value probability of the TPT variable is $0.0206 < 0.05$ with a coefficient of 0.134124. This causes H0 to be rejected and H1 to be accepted, meaning that TPT has a significant positive effect on poverty.

c. LogBM variable (Capital Expenditure)

H0: BM individually has no significant effect on the poverty rate. H1: BM individually has a significant effect on the poverty rate.

The p-value probability of the LogBM variable is $0.7236 > 0.05$ with a coefficient of - 0.052013. This causes H0 to be accepted and H1 to be rejected. Therefore, the BM variable does not have a significant effect on the poverty variable.

Based on the above analysis, a Random Effect Model equation was obtained with two independent variables that individually have a significant effect on the poverty variable, namely per capita GRDP and TPT. The Capital Expenditure variable does not have a significant individual effect.

F Test (Simultaneous)**Table 6.**
F Test

R-squared	0.322309	Mean dependent var	0.812099
Adjusted R-squared	0.308755	S.D. dependent var	0.784005
S.E. of regression	0.651831	Sum squared resid	63.73245
F-statistic	23.77989	Durbin-Watson stat	0.890495
Prob(F-statistic)	0.000000		

H0: all parameters in the model simultaneously have no effect on the dependent variable H1: Some parameters in the model simultaneously affect the dependent variable.

Based on the simultaneous test results in the table, the probability value (F-Statistic) p value is $0.000 < 0.05$, which causes H0 to be rejected and H1 to be accepted, meaning that there is a simultaneous effect of the independent variables on the dependent variable.

Coefficient of Determination

In Table 5, the Adjusted R-squared value is 0,308755. This indicates that the variable Gross Regional Domestic Product, Open Unemployment Rate, and Capital Expenditure can explain the dependent variable, Poverty Rate, by 30,8755%, while the remaining 69,1245% is explained by other variables outside the model.

a. Analysis of the Influence of Gross Regional Domestic Product on Poverty Rate in East Nusa Tenggara

The probability value of the GRDP variable is $0.0000 < 0.05$ with a coefficient of -8.468843, so it can be stated that GRDP has a negative and significant effect on poverty in East Nusa Tenggara. This means that if GRDP increases by 1 percent, it will reduce poverty in East Nusa Tenggara by 8.4688 percent, assuming *ceteris paribus*. As in the study conducted by Falah & Rahmawati (2024), an increase in per capita GRDP contributes to poverty alleviation in the region. An increase in GRDP per capita can have a direct impact on the community.

b. Analysis of the Influence of Open Unemployment Rate on Poverty Rate in East Nusa Tenggara

The probability value of the open unemployment rate variable is $0.0206 < 0.05$ with a coefficient of 0.134124, so it can be stated that the open unemployment rate has a positive and significant effect on the poverty rate in East Nusa Tenggara. Thus, it can be concluded that when the open unemployment rate increases by 1 percent, the poverty rate in East Nusa Tenggara will increase by 0.1341 percent. Individuals who do not have jobs will reduce their income, thereby reducing their welfare (Falah & Rahmawati, 2024)

c. Analysis of the Influence of Capital Expenditure on Poverty Rate in East Nusa Tenggara

The probability value of the capital expenditure variable is $0.7236 > 0.05$ with a coefficient of -0.052013. Thus, it can be stated that capital expenditure has a negative and insignificant effect on the poverty rate in East Nusa Tenggara. Thus, it can be concluded that when capital expenditure increases by 1 percent, the poverty rate in East Nusa

Tenggara will decrease by 0.0520 percent. As in the study conducted by (Falah & Rahmawati, 2024), regional expenditure has no effect on poverty, either in the long or short term. Although the realization of capital expenditure in East Nusa Tenggara fluctuates, capital expenditure does not significantly reduce poverty due to weak program implementation, low quality of human resources and infrastructure, inappropriate spending focus, and structural factors such as complex education and health issues, so that capital expenditure has not fully driven the local economy and created employment opportunities evenly for the poor.

Conclusion, Implications, Suggestions, and Limitations

Based on regression analysis using the Random Effect Model approach for data from East Nusa Tenggara Province for 2017-2023, per capita GRDP, open unemployment rate, and capital expenditure have a simultaneous effect. Partially, GRDP per capita has a negative and significant effect and the open unemployment rate has a positive and significant effect on poverty, but capital expenditure has no significant effect. This study suggests several policy recommendations to address poverty in East Nusa Tenggara Province. The local government needs to increase GRDP per capita and reduce the unemployment rate. An increase in GRDP per capita will increase people's income, and with a decrease in the unemployment rate, people will be able to meet their basic needs, thereby achieving a decent standard of living. The local government must also further optimize the capital expenditure budget for public investment, which will support community economic activities, thereby increasing regional economic growth and ultimately reducing the poverty rate.

This study has limitations, namely that capital expenditure does not have a significant impact on poverty, indicating the need for further research using more specific expenditure categories. Future research can address these limitations by expanding the analysis of regional spending and evaluating poverty reduction strategies. By addressing these limitations, future research can add other variables because this research model is only capable of explaining 31 percent of the influence on poverty, and also can provide information to the public and offer advice to help policymakers formulate more effective development programs and poverty reduction strategies for East Nusa Tenggara Province.

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