

## Analysis of Factors That Influence Economic Growth and Its Impact on the Open Unemployment Rate. Districts in West Nusa Tenggara Province (NTB).

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### ABSTRACT

This study aims to analyze the influence of the Labor Force Participation Rate (TPAK), financing of Micro, Small, and Medium Enterprises (MSMEs), Education Index, and Domestic Investment (PMDN) on Economic Growth and its impact on the Open Unemployment Rate (TPT). Districts in West Nusa Tenggara Province (NTB). This study uses a quantitative approach with panel data, combining cross-sectional data from 8 districts and time-series data for the period 2015–2024. The analysis method used is panel data regression with a fixed effects model processed using EViews. The results of the study indicate that simultaneously the variables TPAK, MSME financing, education index, and PMDN have a significant effect on economic growth with a coefficient of determination of 61.25%. Furthermore, economic growth has a negative and significant effect on the open unemployment rate with a probability value of 0.0304 (<0.05), which means that increasing economic growth tends to reduce the unemployment rate. However, there are still indications of jobless growth, where economic growth has not been fully followed by an increase in labor absorption. The implications of this research demonstrate the importance of promoting inclusive economic growth by improving the quality of the workforce, strengthening MSMEs, equalizing education, and more equitable distribution of investment in order to create jobs and improve public welfare.

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## **INTRODUCTION**

Economic growth is a fundamental indicator for assessing the success of a region's development because it reflects increases in the production capacity of goods and services and the economy's ability to generate income and employment opportunities (Todaro & Smith, 2020; Boediono, 2017). In the context of regional development, economic growth is also closely linked to the level of public welfare. West Nusa Tenggara (NTB) Province has significant economic potential, particularly in the agriculture, tourism, and MSME sectors. However, economic development across regencies and cities remains unequal, indicating an uneven distribution of development and contributing to disparities in public welfare (BPS, 2023).

The workforce is a key determinant of economic growth. High labor productivity drives greater economic output, but expanding the labor force without a corresponding improvement in quality can lead to unemployment and low productivity (Todaro & Smith, 2020; Mankiw, 2018). In NTB, workforce quality issues persist, as evidenced by the dominance of low-educated workers and the informal sector (BPS NTB, 2024). Furthermore, MSMEs play a strategic role in driving regional economic growth, particularly through job creation and increased value added. However, limited access to formal financing remains a major obstacle to MSME development, hampering productivity and innovation (Tambunan, 2019; Beck et al., 2018; Ministry of Cooperatives and SMEs, 2023).

Education is also a key driver of long-term economic growth by improving the quality of the workforce. Higher levels of education increase workforce productivity and innovation (Barro & Lee, 2015; Becker, 2015). However, education levels in West Nusa Tenggara (NTB) remain relatively low and unevenly distributed across regions (BPS, 2024). Domestic Investment (PMDN) plays a crucial role in expanding production capacity, creating jobs, and driving economic growth. Although domestic investment trends show an increase, its distribution remains uneven across regions (Ansori & Ellisa, 2025; Tarigan et al., 2024; Martin, 2025). Economic growth is expected to raise per capita income, an indicator of well-being. However, without equitable income distribution, the benefits of economic growth will not be felt optimally by all (UNDP, 2021).

Based on this description, there is a complex relationship between the variables of labor, MSME financing, education, and PMDN on economic growth and its impact on public welfare. Therefore, an empirical analysis is needed to examine the influence of these variables on economic growth and its implications for the open unemployment rate in districts in West Nusa Tenggara Province. Furthermore, to illustrate the condition and performance of regional economic development in West Nusa Tenggara Province (NTB), the following table presents the data.

**Table 1.1**  
**Determinants of Economic Growth in Districts of West Nusa Tenggara Province (NTB) 2015-2024.**

Kab/Kota	EG	TPT	TPAK	MSMEs	Education	DDI
Kab. Lombok Barat	3,34%	3,48%	1,44%	1.85%	1,55%	16%
Kab.Lombok Tengah	3,54%	3,34%	1,96%	3.49%	1,43%	17%
Kab. Lombok Timur	3,81%	3,33%	3,36%	-0,51%	1,92%	48,7%
Kab. Sumbawa	3,62%	<b>3,27%</b>	1,87%	-0,89%	1,67%	84,5%
Kab. Dompu	3,56%	3,11%	3,50%	2.55%	1,47%	44,2%
Kab. Bima	<b>3,41%</b>	2,55%	0,73%	-4.03%	1,33%	0
Kab. Sumbawa Barat	-0,46%	4,91%	1,70%	-3,90%	1,06%	97,5%
Kab. Lombok Utara	3,37%	1,78%	1,96%	10,25%	7,55%	3,5%
<b>Average</b>	<b>3,02%</b>	<b>3,22%</b>	<b>2,07%</b>	<b>1,10%</b>	<b>2.25%</b>	<b>36.69%</b>

Source: Central Statistics Agency (BPS) of West Nusa Tenggara Province

Based on data, the average economic growth of districts/ cities in West Nusa Tenggara (NTB) Province is 3.02%, with an average open unemployment rate (TPT) of 3.22%, a labor force participation rate (TPAK) of 2.07%, MSME growth of 1.10%, an education index of 2.25%, and Domestic Investment (PMDN) of 36.69%. Although economic growth is considered positive, the relationship with TPT is not entirely consistent, indicating the phenomenon of jobless growth. The high TPAK has also not been matched by optimal labor absorption. On the other hand, MSMEs and education have shown a relatively positive role in labor absorption, while the distribution of PMDN remains unequal and tends not to have a significant impact on job creation.

Overall, this condition indicates that economic growth in NTB is not fully inclusive, necessitating further analysis of the influence of TPAK, MSMEs, education, and PMDN on economic growth and their implications for public welfare.

## LITERATURE REVIEW

### 1. Economic Growth

Economic growth is the process of increasing an economy's production capacity, reflected in an increase in output or Gross Regional Domestic Product (GRDP) over a specific period. According to Todaro and Smith (2020), economic growth is not only related to increased output but also reflects structural changes in the economy, including the transformation of production sectors and income distribution. From the neoclassical perspective proposed by Solow, economic growth is influenced by the accumulation of capital, labor, and technological progress. This model emphasizes that long-term growth is largely determined by improvements in the quality of human resources and technological innovation (Mankiw, 2018). Thus, sustainable economic growth requires a combination of physical investment and improvements in the quality of the workforce.

2. Employment and Unemployment Rate

Employment theory explains the relationship between economic growth and labor absorption. Okun's Law states that there is a negative relationship between economic growth and the unemployment rate, where an increase in economic output will reduce the unemployment rate (Mankiw, 2018). However, in practice, this relationship is not always perfectly valid. The phenomenon of jobless growth demonstrates that economic growth is not always accompanied by increased employment opportunities, especially if growth is driven by capital-intensive sectors. Therefore, the quality of economic growth is a critical factor in determining the effectiveness of labor absorption.

3. Labor Force Participation Rate (LFPR)

The Labor Force Participation Rate (LFPR) reflects the proportion of the working-age population that is economically active. According to Borjas (2016), the LFPR is influenced by demographic factors, education level, and economic conditions. An increase in the LFPR can potentially boost economic growth by increasing the workforce. However, without a corresponding increase in job availability, an increase in the LFPR can actually increase unemployment. Therefore, the balance between labor supply and demand is key in the labor market.

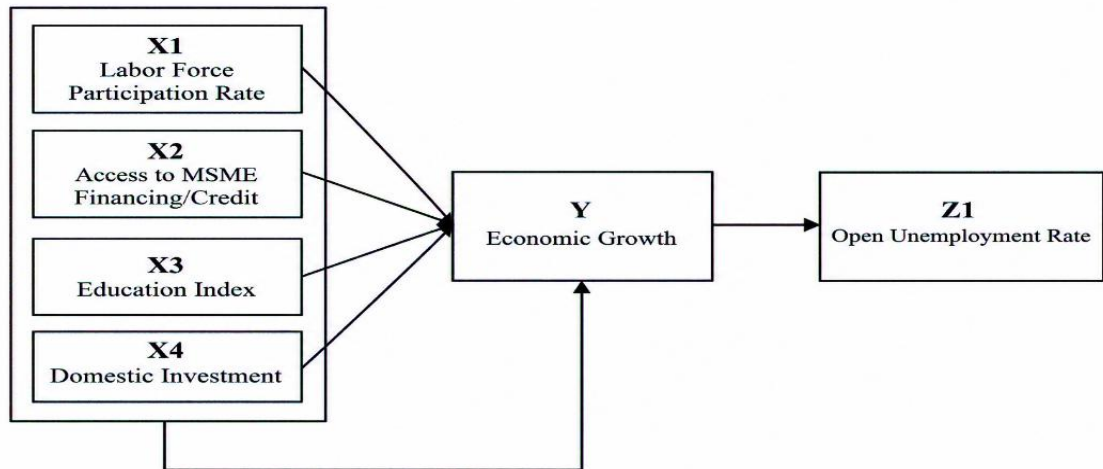
4. Micro, Small, and Medium Enterprises (MSMEs)

MSMEs play a strategic role in the economy, particularly in creating jobs and increasing community income. Tambunan (2019) states that MSMEs are a relatively crisis-resistant sector capable of absorbing a large workforce. In economic development theory, MSMEs play a role as drivers of local economic development because they can increase added value and encourage more equitable income distribution. However, MSME development is heavily influenced by access to financing, technology, and managerial capacity (Beck et al., 2018).

5. Investment and Domestic Direct Investment (PMDN)

Investment is a key factor in driving economic growth by increasing production capacity and creating jobs. According to the Harrod-Domar theory, investment plays a crucial role in determining the level of economic growth through capital formation. Domestic Direct Investment (PMDN) contributes to increased regional output and economic activity. However, according to modern development theory, the impact of investment on employment is highly dependent on the characteristics of the investment sector, whether it is labour-intensive or capital-intensive (Todaro & Smith, 2020). The following is a conceptual framework that provides a general overview of the relationships between the variables in this study.

Figure 1.1 Research Framework



The resulting model formulation is as follows:

Multiple Linear Regression Model Equation for Panel Data

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \epsilon_{it}$$

$$\ln Y_{it} = \beta_0 + \beta_1 \ln X1_{it} + \beta_2 \ln X2_{it} + \beta_3 \ln X3_{it} + \beta_4 \ln X4_{it} + \epsilon_{it}$$

Model 2:

Multiple Linear Regression Model Equation for Panel Data

$$Z1_{it} = \beta_{01} + \beta_{11} Y_{it} + \epsilon_{it}$$

$$\ln Z1_{it} = \beta_{01} + \beta_{11} \ln Y_{it} + \epsilon_{it}$$

## METHODOLOGY

This study uses a quantitative approach with panel data, namely a combination of cross-section data (8 districts in West Nusa Tenggara Province) and time series (period 2015–2024). The independent variables include the Labor Force Participation Rate (TPAK), MSMEs, Education Index, and Domestic Investment (PMDN), while the dependent variable is economic growth. The data used are secondary data obtained from the Central Statistics Agency (BPS) of West Nusa Tenggara Province and the NTB Satu Data portal. The study population covers all 8 districts using a total sampling technique (saturated sample), so that the entire population is used as the observation unit (Sugiyono, 2013). This study is explanatory (hypothesis testing) to analyze causal relationships between variables. The analytical method used is panel data regression that can accommodate variations between times and between regions. Data processing was carried out using EViews software version 13.

**RESEARCH RESULT**

**1. Analysis of the Influence of Independent Variables on Economic Growth (X Against Y)**

Model 1

a. Panel Data Regression Model Estimation Model 1

The Fixed Effects Model is used to accommodate differences in characteristics between regions by providing a different intercept for each cross-sectional unit. Based on the estimation results, the following results were obtained:

Table 1.2 Fixed Effects Model (FEM) Estimation Results Model 1

Dependent Variable: PE  
 Method: Panel Least Squares  
 Date: 04/22/26 Time: 21:39  
 Sample: 2014 2023  
 Periods included: 10  
 Cross-sections included: 8  
 Total panel (unbalanced) observations: 76

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.023498	0.010681	2.199962	0.0320
TPAK	2.073098	0.732956	2.828408	0.0061
LN_KUMKM	0.126851	0.015182	8.355059	0.0000
IPD	0.028502	0.011840	2.407226	0.0194
LN_INVESTASI	0.002635	0.000691	3.815115	0.0003

**Effects Specification**

Cross-section fixed (dummy variables)			
R-squared	0.612468	Mean dependent var	4.280658
Adjusted R-squared	0.545861	S.D. dependent var	14.00618
S.E. of regression	9.438738	Akaike info criterion	7.471461
Sum squared resid	5701.745	Schwarz criterion	7.839471
Log likelihood	-271.9155	Hannan-Quinn criter.	7.618536
F-statistic	9.195246	Durbin-Watson stat	2.545877
Prob(F-statistic)	0.000000		

Source: Data processed with EViews, 2026.

The estimation results show that all independent variables, namely the Labor Force Participation Rate (TPAK), LN\_ MSME Financing Credit, Education Index, and LN\_ Domestic Investment (PDMN)/Investment, have a significant effect on Economic Growth (Prob < 0.05). The R-squared value of 0.612468 indicates that the model has better explanatory power compared to the Common Effect Model (CEM). This indicates that the model is able to capture differences in characteristics between regions.

2. Analysis of the Effect of Economic Growth on the Open Unemployment Rate (Y vs. Z1) Model 2

Table 1.3 Estimation Results of the Fixed Effects Model (FEM) Model 2

Dependent Variable: TPT  
Method: Panel Least Squares  
Date: 04/23/26 Time: 21:46  
Sample: 2016 2024  
Periods included: 9  
Cross-sections included: 8  
Total panel (balanced) observations: 72

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	916.9169	222.4695	4.121539	0.0001
PE	-61.71235	27.83768	-2.216864	0.0304

Effects Specification

Cross-section fixed (dummy variables)			
R-squared	0.566806	Mean dependent var	3.018333
Adjusted R-squared	0.511797	S.D. dependent var	1.030044
S.E. of regression	0.719708	Akaike info criterion	2.296525
Sum squared resid	32.63268	Schwarz criterion	2.581109
Log likelihood	-73.67491	Hannan-Quinn criter.	2.409819
F-statistic	10.30392	Durbin-Watson stat	1.681888
Prob(F-statistic)	0.000000		

Source: Data processed with EViews, 2026

Based on the Fixed Effect Model (FEM) regression results, the Economic Growth (PE) variable has a coefficient of -61.71235 with a probability value of 0.0304 (<0.05), thus having a negative and significant effect on the TPT, meaning that increased economic growth tends to decrease the TPT. The R-squared value of 0.566806 indicates that 56.68% of the variation in the TPT can be explained by the model, while the remainder is influenced by other factors. The Prob(F-statistic) value of 0.000000 (<0.05) indicates that the model is overall significant.

3. Coefficient of Determination (Adjusted R-Square)

Table 1.4 Results of the R<sup>2</sup>Test for Model 1

R-squared	0.612468	Mean dependent var	4.280658
Adjusted R-squared	0.545861	S.D. dependent var	14.00618
S.E. of regression	9.438738	Akaike info criterion	7.471461
Sum squared resid	5701.745	Schwarz criterion	7.839471
Log likelihood	-271.9155	Hannan-Quinn criter.	7.618536
F-statistic	9.195246	Durbin-Watson stat	2.545877
Prob(F-statistic)	0.000000		

Source: Data processed with EViews, 2026

The coefficient of determination reflects the influence of changes in the independent variable on changes in the dependent variable, along with the aim of measuring the validity and goodness of the relationship between variables in the model used. The amount of variation in the independent variable that influences the dependent variable is 61.25%, with the remaining 38.76% explained by other variables outside the model.

**Table 1.5 Results of the  $R^2$  (Z1) Test for Model 2**

R-squared	0.877229	Mean dependent var	26669.72
Adjusted R-squared	0.861639	S.D. dependent var	35360.87
S.E. of regression	13153.13	Akaike info criterion	21.92318
Sum squared resid	1.09E+10	Schwarz criterion	22.20776
Log likelihood	-780.2343	Hannan-Quinn criter.	22.03647
F-statistic	56.26898	Durbin-Watson stat	2.311728
Prob(F-statistic)	0.000000		

Source: Data processed with EViews, 2026

The R-squared value of 0.877229 indicates that the independent variables in the model explain 87.72% of the variation in Per Capita Income at Constant Prices, while the remaining 13.28% is explained by other variables outside the model. The Adjusted R-squared value of 0.861639 indicates that the model's ability to explain Per Capita Income at Constant Prices is good enough for further analysis.

**Table 1.6 Results of the  $R^2$  (Z2) Test for Model 2**

R-squared	0.566806	Mean dependent var	3.018333
Adjusted R-squared	0.511797	S.D. dependent var	1.030044
S.E. of regression	0.719708	Akaike info criterion	2.296525
Sum squared resid	32.63268	Schwarz criterion	2.581109
Log likelihood	-73.67491	Hannan-Quinn criter.	2.409819
F-statistic	10.30392	Durbin-Watson stat	1.681888
Prob(F-statistic)	0.000000		

Source: Data processed with EViews, 2026

The R-squared value of 0.566806 indicates that the Economic Growth (PE) variable explains 56.68% of the variation in the Open Unemployment Rate (TPT), while the remaining 43.32% is influenced by factors outside the model. The Adjusted R-squared value of 0.511797 indicates that, after adjusting for the number of variables in the model, the model's ability to explain changes in the Open Unemployment Rate remains in the moderately strong category. Therefore, it can be concluded that economic growth has a significant influence on the open unemployment rate and that the model used is adequate for further analysis, although other factors outside the model may also influence the TPT.

**Table 1.7 F-Test Results for Model 1**

R-squared	0.612468	Mean dependent var	4.280658
Adjusted R-squared	0.545861	S.D. dependent var	14.00618
S.E. of regression	9.438738	Akaike info criterion	7.471461
Sum squared resid	5701.745	Schwarz criterion	7.839471
Log likelihood	-271.9155	Hannan-Quinn criter.	7.618536
F-statistic	9.195246	Durbin-Watson stat	2.545877
Prob(F-statistic)	0.000000		

Source: Data processed with EViews, 2026

Based on the F-test results, the F-statistic value was 9.195246 with a Prob(F-statistic) of 0.000000. This probability value is less than the 0.05 significance level, so  $H_0$  is rejected and  $H_1$  is accepted. This indicates that the independent variables, namely the Labor Force Participation Rate (TPAK), MSME Credit, the Education Index, and Domestic Direct Investment/Investment, simultaneously have a significant effect on economic growth.

**The Effect of the Labor Force Participation Rate (TPAK), Access to MSME Credit/Financing, the Education Index, and Domestic Direct Investment/Investment on Economic Growth.**

Based on Table 1.4, the results of statistical calculations using the multiple linear regression method show that the variables Labor Force Participation Rate (TPAK), credit/financing of Micro, Small, and Medium Enterprises (MSMEs), education index, and Domestic Investment (PMDN)/investment simultaneously/jointly influence the economic growth of districts/cities in West Nusa Tenggara Province (NTB). This is indicated by the coefficient of determination (R-squared) value of 0.6123468 and the adjusted R-squared of 0.545861. These values indicate that together the independent variables in the model are able to explain approximately 61.25% of the variation in economic growth in the research area. Meanwhile, approximately 38.75% of other variations in economic growth are influenced by factors outside the model that are not examined in this study. These factors include infrastructure conditions (such as roads, electricity, and regional connectivity), inflation rates and price stability, foreign investment (PMA), the quality of institutions and governance, the level of technology and innovation, and the contribution of leading regional sectors such as tourism, agriculture, and industry.

**The effect of economic growth on the open unemployment rate.**

Based on Table 1.5, the t-statistic is -2.216864 with a probability value of 0.0304 ( $<0.05$ ). These results indicate that the Economic Growth variable (Y) has a significant effect on the open unemployment rate (Z2) in the Fixed Effects Model estimation model. Therefore,  $H_0$  is rejected and  $H_1$  is accepted. The negative coefficient indicates that economic growth has a negative and significant relationship with the open unemployment rate in districts/cities in West Nusa Tenggara (NTB) Province. This means that every 1% increase in economic growth will reduce the open unemployment rate by 2.216% (all other things being equal). This is in line with the research findings of Yolanda et al. (2023) who stated that unemployment has a negative and significant effect on economic growth. When economic growth increases, the unemployment rate tends to decrease. Conversely, when economic growth weakens, the unemployment rate will increase.

These findings indicate that economic growth plays a role in reducing the open unemployment rate in West Nusa Tenggara (NTB) Province. Increased economic growth drives job creation, although its effectiveness depends on the developing sector, particularly whether it is labor-intensive or capital-intensive.

Theoretically and empirically, the relationship between economic growth and unemployment is explained by the concept of Okun's Law, which states a negative relationship between output growth and the unemployment rate. The World Bank (2022) states that economic growth plays a role in increasing labor absorption and reducing the unemployment rate through job creation. This aligns with findings from the International Monetary Fund (2023), which show that increased economic growth tends to be followed by a decrease in the unemployment rate. Furthermore, research by Muhammad Shahbaz, Mantu Kumar Mahalik, and Ilhan Ozturk (2021) shows that economic growth has a significant influence on reducing unemployment in the short and long term by increasing labor demand.

Thus, it can be concluded that economic growth negatively impacts the open unemployment rate, meaning that the higher the economic growth, the lower the unemployment rate. However, the effectiveness of this relationship is greatly influenced by the economic structure and the ability of productive sectors to absorb a broad workforce. Therefore, policies are needed that encourage inclusive economic growth and are oriented towards job creation.

## **CONCLUSION**

Based on the analysis and discussion of the influence of the Labor Force Participation Rate (TPAK), MSME financing credit, the Education Index, and Domestic Investment (PMDN) on economic growth and their impact on the welfare of district communities in West Nusa Tenggara (NTB) Province, the following conclusions can be drawn:

1. Simultaneously, the TPAK, MSME financing credit, the education index, and PMDN/investment variables significantly influence economic growth. The research model explains approximately 61.25% of the variation in economic growth, while the remaining 38.75% is influenced by factors outside the model, such as infrastructure, inflation, institutional quality, technology, and leading regional sectors such as tourism, agriculture, industry, and others.
2. Economic growth has a negative and significant effect on the open unemployment rate. This means that increased economic growth tends to reduce the unemployment rate, although in practice, there are still indications of jobless growth due to limited labor absorption.

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