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Original Article

The Influence of Economic Growth, Minimum Wages, and Average Years of Schooling on the Unemployment Rate in NTB 2015-2024

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This article contributes to:

Abstract. In the current era, the high unemployment rate is a serious problem that must be addressed immediately by the government. The rising unemployment rate in West Nusa Tenggara can hinder the development programs implemented by the government. The purpose of this research is to examine the impact of economic growth, minimum wage, and average years of schooling on the unemployment rate in West Nusa Tenggara from 2015 to 2024. The analytical tools used are panel data regression with the Fixed Effect Model, partial t-test, simultaneous F-test, coefficient of determination (R^2) test, and classical assumption tests including autocorrelation, multicollinearity, and heteroscedasticity. The results of this study show that. The economic growth variable has a negative and significant impact on the open unemployment rate. Meanwhile, the minimum wage variable is not significant, meaning the minimum wage does not have a substantial effect on the open unemployment rate. The average length of schooling variable has a positive and significant impact on the unemployment rate.

Keywords: Open Unemployment Rate, Economic Growth, Education, Minimum Wage, Average Length of Schooling.

1. Introduction

The unemployment rate is one of the main indicators in measuring the economic health of a country [1]. Unemployment not only affects the individual who is unemployed, but also has a broad impact on society and the economy as a whole. When the unemployment rate increases, people's purchasing power tends to decrease, which ultimately affects economic growth [2]. Unemployment is one of the serious economic problems faced by developing countries, because high unemployment has a negative impact on the economy, individuals, and society, such as unemployment causes government tax revenues to decrease so that it will hamper economic development and unemployment will not stimulate the economy. Unemployment can cause a decrease in people's income which affects the inability to achieve the welfare that may be achieved, thus causing social and political instability [3].

unemployment occurs as a result of the high rate of change in the workforce which is not balanced by the availability of a sufficiently large number of jobs and the absorption of labor which tends to be a small percentage. This is caused by the low rate of growth in job creation to accommodate the workforce who are ready to work as explained in the classical theory, namely that unemployment occurs due to temporary misallocation of resources because it can be overcome by the price mechanism [4].

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The causes of unemployment are not only limited to the economic crisis, but are also influenced by various aspects, such as education, skills, and government policies in creating jobs. For example, many college graduates are not ready to face the world of work, because there is a gap between the educational curriculum and industry needs [5]. In addition, the lack of investment in sectors that can absorb labor is also an important factor in efforts to reduce the unemployment rate [6].

In West Nusa Tenggara (NTB), the unemployment rate has different characteristics compared to other regions in Indonesia. According to BPS NTB (2022), the unemployment rate in this province has increased quite significantly, reaching 6.95% in 2022. This figure shows that many NTB people are still having difficulty getting jobs. The agricultural sector, which is the mainstay of the NTB community, cannot absorb the workforce optimally, especially in this modern era, when many people are turning to the industrial and service sectors. The percentage of the Open Unemployment Rate (TPT) in August 2020 increased by 0.8 percentage points to 4.22 percent compared to August 2019 [7]. This is due to the Covid-19 pandemic, not a few companies have closed their operations, some temporarily, some for an indefinite period, causing pre-employment workers to be unemployed for a while. In addition, in the following years the unemployment rate in NTB began to show a decline. In 2021 the unemployment rate was 3.01 percent, in 2022 it was 2.89 percent and in 2023-2024 it decreased again by 0.7%.

The purpose of economic development is to provide local communities with more job opportunities [8]. If economic growth continues to increase from year to year and is considered quality, it will have an impact on the performance of other sectors, both government and private. Therefore, quality economic growth is highly dependent on national and global economic conditions. To achieve quality economic growth, the government continues to carry out careful planning through various policies. The West Nusa Tenggara Provincial Government is trying its best to carry out economic development by continuing to increase the rate of economic growth every year. This is done so that the development process aimed at realizing a faithful and prosperous society can be achieved slowly. The West Nusa Tenggara Provincial Government continues to strive to improve its economic performance to improve the quality of life of its people [9].

Wages are one of the factors that when viewed from the supply side of employment affect the absorption of labor. The amount of wages offered by a company is usually determined by the level of productivity, quality and working hours of the workers themselves. According to government regulation of labor and transmigration no. 7 of 2013 concerning minimum wages. The minimum wage is the lowest monthly wage consisting of basic wages including fixed allowances [10]. This wage applies to those who are single and have 0-1 year of work experience, functions as a safety net, is determined through a governor's decision based on recommendations from the wage council and is valid for 1 (one) year. The development of the Provincial Minimum Wage level in West Nusa Tenggara Province is seen to increase every year, with the increase in the minimum wage every year, people's lives become better and are balanced with the standard of living of people in an area increasing.

According to Li et al. [11], income levels are greatly influenced by the length of education a person has received. One indicator of whether or not the level of education in a region/country is good can be seen through the average length of schooling. The average length of schooling is used to identify the level of education of the population in a region. The average length of schooling is the length of education that a person has

completed. People with higher education will start working full time at an older age, but their income will increase more quickly than people who work earlier.

A person's way of thinking in dealing with problems is greatly influenced by the breadth of that person's knowledge. The main basis of knowledge is through education. With higher education, there are more choices for humans to live more prosperously. The role of education influences the reduction of inequality and poverty [12]. Based on BPS (2024), it shows that the Average Length of Schooling (RLS) in NTB Province has increased from year to year. This is due to the development of educational facilities that are oriented in urban areas and limited to rural areas. The average length of schooling for NTB residents is still far from the maximum value, this shows that there are still areas in NTB that have not been able to complete the minimum education target of Elementary School. In connection with the background above, this study is intended to analyze the Effect of Economic Growth, Minimum Wages, and Average Length of Schooling on the Unemployment Rate in West Nusa Tenggara in 2019 - 2024.

2. Method

This study uses a quantitative approach with an associative research type. According to Vilar- Compte et al. [13], associative quantitative research aims to determine the relationship between two or more variables. The location of the study was determined in Mataram City with the object of the West Nusa Tenggara region during the period 2015 to 2024. The selection of this location and period was based on the dynamics of the unemployment rate which fluctuates every year, but is expected to decrease consistently. Based on this, this study aims to analyze the effect of Economic Growth, Minimum Wages, and Average Length of Schooling on the Unemployment Rate in West Nusa Tenggara. Data collection techniques in this study were carried out through two methods, namely literature study and documentation [14]. Literature study was conducted by reviewing relevant literature and collecting secondary data related to the research variables. While documentation was carried out by collecting secondary data that had been published, such as data on economic growth, minimum wages, and average length of schooling in West Nusa Tenggara Province over the past ten years, namely from 2015 to 2024.

The type of data used in this study is secondary data in the form of annual time series for ten years (2015–2024) [15]. This quantitative data was obtained from official agencies such as the Central Statistics Agency (BPS) of West Nusa Tenggara, the Education Office, and the Manpower Office of West Nusa Tenggara Province. The variables in this study are classified into two categories, namely independent variables and dependent variables. The independent variables consist of Economic Growth (X1), Minimum Wage (X2), and Average Length of Schooling (X3). Meanwhile, the dependent variable (Y) is the Unemployment Rate. Data analysis in this study was carried out using multiple linear regression analysis, because there is more than one independent variable analyzed simultaneously against one dependent variable. The multiple linear regression model used is formulated as follows:

$$\boldsymbol{Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e}$$

With Unemployment Rate (Y), Economic Growth (X1), Minimum Wage (X2), Average Years of Schooling (X3), Constant (a), Regression Coefficient of each independent variable (b), and Error (e). Before conducting the hypothesis test, a classical assumption test is carried out which includes a normality test, autocorrelation test, multicollinearity test, and heteroscedasticity test. The normality test aims to test whether the residual data is normally distributed, which can be tested with the Kolmogorov-Smirnov Test,

histogram, or Normal P-Plot graph. The autocorrelation test is used to determine the presence of serial correlation between residuals using the Runs Test. The multicollinearity test aims to detect the presence of a relationship between independent variables, which can be analyzed through the Variance Inflation Factor (VIF) value and tolerance value; if VIF <10, then there is no multicollinearity. The heteroscedasticity test is used to determine the inequality of residual variance between observations which can be seen through the scatterplot graph pattern.

Furthermore, to test the influence of each independent variable on the dependent variable partially, the t-test is used [16]. The test is carried out by comparing the calculated t value with the t table at a significance level of 5% ($\alpha = 0.05$). The test criteria are as follows: if the significance of $t \leq 0.05$, then H_0 is rejected and Ha is accepted, meaning that the independent variable has a significant effect on the dependent variable; conversely, if the significance of $t > 0.05$, then H_0 is accepted and Ha is rejected.

To test the influence of the three independent variables simultaneously on the dependent variable, the F test is used. The test is carried out by comparing the calculated F value with the F table at a significance level of 5%. The test criteria are: if the significance of F <0.05, then H0 is rejected and Ha is accepted, which means that the independent variables simultaneously have a significant effect on the dependent variable. However, if the significance of F> 0.05, then H0 is accepted and Ha is rejected. Finally, to find out how much proportion of the variation of the dependent variable can be explained by the independent variable, the coefficient of determination (R2) analysis is used. The R2 value approaching zero indicates that the ability of the independent variable to explain the dependent variable is very limited, while the R^2 value approaching one indicates that almost all of the variation of the dependent variable can be explained by the regression model used.

3. Results and Discussion

3.1 Classical Assumption Test Results

The results of the first classical assumption test are from the normality test, the results of which can be seen in Figure 1.

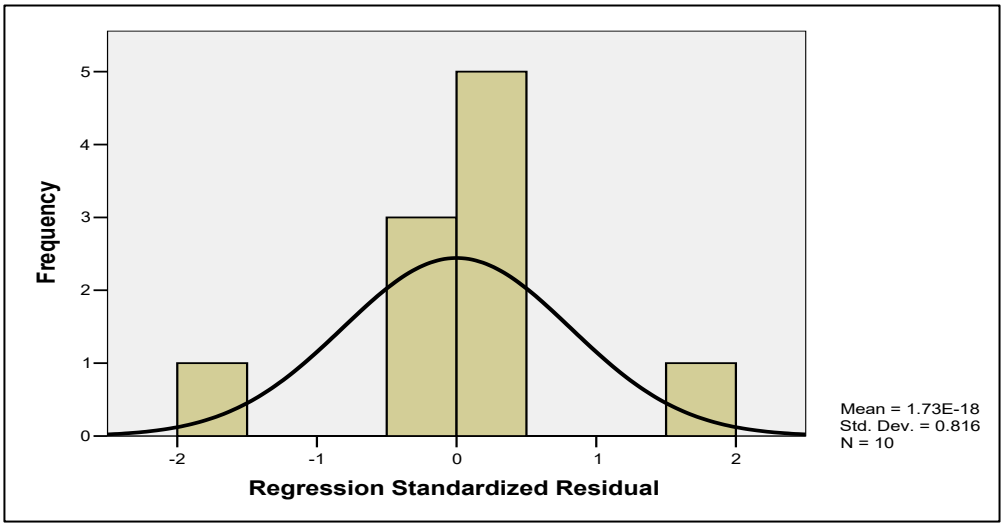

Figure 1. Normality Test

Based on Figure 1, the results of the Normality Test obtained a significant value of 0.816 > 0.05, meaning that the results of the normality test research were normally distributed and could test further data. The results of the multicollinearity test can be seen in Table 1.

Table 1. Multicollinearity and Autocorrelation Test

Model	Coll. Stat.		Durbin Watson
	Tolerance	VIF	
Economic growth	-0.472	2.120	2.026
Minimum wage	0.047	1.308	
Average Length of Schooling	0.055	8.128	

Table 2. Based on the results of the multicollinearity test of economic growth, minimum wages and average length of schooling are <10, then in this study it can be concluded that there is no multicollinearity. The results of the autocorrelation test are shown in Table 1. The results of the Autocorrelation Test used are the Durbin-Watson Test. In this study, the results showed a Durbin-Watson value of 2,026, which is within the ideal value range of 1.5 to 2.5. Thus, it can be concluded that there is no autocorrelation in this regression test. While the results of the heteroscedasticity test are presented in Figure 2.

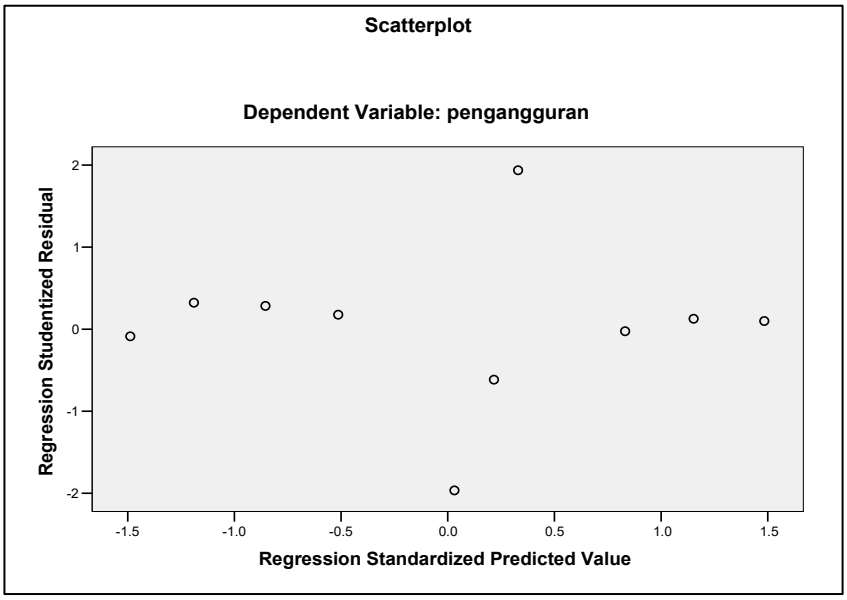

Figure 2. Heteroscedasticity Test

Based on the scatterplot above, the data distribution pattern does not appear to form a particular pattern, both randomly spread above and below the zero axis on the vertical axis. A random distribution pattern that does not form a particular pattern indicates that there is no indication of heteroscedasticity. So it can be concluded that in this study there is no Heteroscedasticity.

3.2 Multiple Linear Regression Analysis Results

In this study, the hypothesis testing used is multiple linear regression analysis. Multiple Linear Regression Analysis is a statistical analysis method used to measure the effect of more than one independent variable on the dependent variable simultaneously [17]. The test results are shown in Table 2.

Table 2. Multiple Linear Regression Test Results

Model	Unstandard.Coeff.		Standard. Coeff.	t	Sig
	B	Std. Error	Beta		
(Constant	15.227	0.059	NA	89.186	0.000
Economic growth	768	1.354	-0.039	-0.735	0.490
Minimum wage	1.903	3.503	0.088	0.526	0.617
Average Length of Schooling	0.468	0.980	0.900	5.833	0.001

$$\boldsymbol{Y = 15.227 + 0.768(X1) + 1.903(X2) + 0.468\,(X3) + e}$$

The constant value (B0) is 15.227, meaning that if the independent/dependent variables Economic Growth (X1), Minimum Wage (X2) and Average Years of Schooling (X3) are 0, then the Y variable Unemployment is 15.227 percent (%) or 15.28%. The

regression coefficient value of the Economic Growth variable (X1) is 0.768 if Economic Growth increases by 1%, then Unemployment will increase by 0.76%. The regression coefficient value of the Minimum Wage variable (X2) is 1.903 if the Minimum Wage increases by 1%, then unemployment will increase by 1.9%. The regression coefficient value of the Average Years of Schooling variable (X3) is 0.468 if the Average Years of Schooling increases by 1%, then the Unemployment rate will increase by 0.46%.

3.3 Hypothesis Test Results

The T-test is used to determine how much influence each variable has on the independent variable with the dependent variable [18]. The research results from the t-statistic test are in Table 2. By testing the Regression coefficient using = 5% (0.05), the Economic Growth variable has a t-count value of -0.735 with a significant value of 0.490> 0.05, then H0 is accepted and Ha is rejected, meaning that the Economic Growth variable does not have a significant influence on Unemployment in West Nusa Tenggara. By testing the Regression coefficient using = 5% (0.05), the Minimum Wage variable has a t-count value of 0.056 with a significant value of 0.617 > 0.05, then H0 is accepted and Ha is rejected, meaning that the Minimum Wage variable does not have a significant effect on Unemployment in West Nusa Tenggara. By testing the Regression coefficient using = 5% (0.05), the Average Years of Schooling variable has a t-count value of 0.001 with a significant value of 0.001 > 0.05, then H0 is rejected and Ha is accepted, meaning that the Average Years of Schooling variable has a significant effect on Unemployment in West Nusa Tenggara. Meanwhile, the results of the F test can be seen in Table 4, and the coefficient of determination can be seen in Table 3.

Table 2. ANOVA Test Results

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	0.008	3	0.003	251.656	0.000[a]
Residual	0.000	6	0.000		
Total	0.008	9			

Based on the data processing results, the significant values of f are 0.000 <0.05, so it can be concluded that the regression model is statistically significant. This means that simultaneously or together, variables X1, X2, and X3 have a significant influence on variable Y. Based on the results of the study above, the R Square value of 0.992 was obtained, which indicates the level of relationship (correlation) between the independent variables (X1, X2, X3) and the dependent variable (Y). This means that the Adjusted R Square (R^2) value of 0.988 indicates that 98% of the variations that occur in variable Y can be explained by variables X1, X2, and X3 together, while the remaining 2% is explained by other factors outside the model.

3.4 Discussion

3.4.1 The Influence of the Relationship between Economic Growth and Unemployment

Based on the Regression coefficient test using = 5% (0.05), the Economic Growth variable has a t-count value of -0.735 with a significant value of 0.490> 0.05, meaning that the Economic Growth variable does not have a significant effect on Unemployment in West Nusa Tenggara. This is in accordance with the theory put forward by Arthur Okun where there is a negative relationship between economic growth and unemployment. According to this law, every increase in economic growth will be accompanied by a decrease in the unemployment rate. This is due to the increase in demand for goods and services that encourage companies to expand operations and employ more workers. This is also in line with the results of research conducted by Hjazeen et al. [19] which states that economic growth has a significant negative effect on unemployment.

3.4.2 The Influence of Minimum Wage Relationship on Unemployment

Based on the Regression coefficient test using = 5% (0.05), the Minimum Wage variable has a t-count value of 0.056 with a significant value of 0.056> 0.05, meaning that the Minimum Wage variable does not have a significant effect on Unemployment in West Nusa Tenggara. This is in accordance with the Classical Theory, developed by economists such as Adam Smith and David Ricardo, arguing that setting a minimum wage that is too high can lead to increased unemployment, especially among less skilled workers. Although there are arguments in favor of the existence of a minimum wage to protect workers, this theory suggests that there is a potential negative impact on the unemployment rate. The results of this analysis have the same results as the research conducted by Kozak and Picot [20] which states that the minimum wage has a significant negative effect on the unemployment rate.

3.4.3 The Influence of the Relationship between Average Length of Schooling and Unemployment

Based on the Regression coefficient test using = 5% (0.05), the Average Years of Schooling variable has a t-count value of 0.001 with a significant value of 0.001> 0.05, meaning that the Average Years of Schooling variable has a significant effect on Unemployment in West Nusa Tenggara. This is in accordance with the Human Capital Theory, developed by economists such as Gary Becker where this theory shows that education has an important role in reducing unemployment by increasing individual skills and productivity. Investment in education is not only beneficial for individuals, but also for the economy as a whole, because it creates a more skilled and competitive workforce. The results of this analysis have the same results as the research conducted by Nolte-Troha et al. [21] which stated that the average years of schooling have a significant and positive effect on open unemployment.

4. Conclusion

Based on the discussion, the author concludes that Partially Economic Growth, Minimum Wage, and Average Length of Schooling have a positive and insignificant effect on the Unemployment Rate in West Nusa Tenggara Province in 2015-2024, which are suspected to have an indirect effect on the variable determining the amount of the minimum wage, because the minimum wage continues to increase and it is not directly influenced by economic factors but government political policies. Simultaneously Economic Growth, Average Length of Schooling have a positive and significant effect on the Unemployment Rate in West Nusa Tenggara Province in 2015-2024. The suggestion of this research is expected that the West Nusa Tenggara Provincial Government, especially the West Nusa Tenggara Provincial Manpower Office and economic actors, carry out a new innovation in expanding employment opportunities, to further improve the household economy, and the economy of the West Nusa Tenggara region in general. It is also hoped that the West Nusa Tenggara Provincial Government will be able to further increase the added value of each economic sector to support economic growth so as to increase employment opportunities more positively and significantly.

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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.

Did you use generative AI to write this manuscript? - I do not use AI assistance in my manuscript.

Declaration of generative AI and AI-assisted technologies in the writing process - During the preparation of this work the author did not use AI to write, edit, or other things related to the manuscript.

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