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Analysis of Jobless Growth and Determinants of Open Unemployment Rate in West Nusa Tenggara Province 2015-2025 Period

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ABSTRACT

This study aims to examine and analyze the determinants of the Open Unemployment Rate (TPT) and confirm the existence of the jobless growth and skills mismatch phenomenon in 10 districts/cities of West Nusa Tenggara Province for the period 2015–2025. The approach used is an associative explanatory quantitative approach with balanced panel data from 10 districts/cities for 11 years (110 observations). The best estimation model selected through specification testing is the Random Effect Model (REM). The results of the analysis indicate that economic growth (GRDP) has a negative and significant effect on the TPT, confirming the indication of jobless growth due to the dominance of capital-intensive sectors. Average Years of Schooling (RLS) has a positive and significant effect on the TPT, indicating the existence of skills mismatch and the phenomenon of educated unemployment. The Labor Force Participation Rate (TPAK) has a negative and significant effect on the TPT due to the high absorption of labor in the flexible rural informal sector. Meanwhile, the Regency/City Minimum Wage (UMK) has a negative but insignificant effect on the TPT because the business structure is dominated by MSMEs with a flexible wage system. These findings underscore the importance of local MSME supply chain partnerships with capital-intensive companies, vocational education reforms to better match job needs , and expanding social protection nets for informal workers . These policy implications can boost economic growth and create jobs.

INTRODUCTION

Macroeconomic development at the regional level essentially aims to achieve two mutually reinforcing strategic goals: increasing the rate of economic output growth through Gross Regional Domestic Product (GRDP) and suppressing the Open Unemployment Rate (TPT). Theoretically, the relationship between output growth and the labor market is explained through a combination of classical and modern macroeconomic theories. Based on Keynesian theory (Keynes, 1936) , the level of employment opportunities in a region is largely determined by the size of aggregate demand . Companies will only increase their production capacity for goods and services if public demand increases, which in turn encourages the absorption of new labor and suppresses the TPT. Arthur M. Okun (1962) proved this negative linear relationship

quantitatively through Okun *'s Law* , which states that when the economy grows above its potential rate, expansion of the business sector will automatically reduce unemployment through labor absorption.

However, this conventional theoretical mechanism experiences a real structural distortion when faced with the regional economic dynamics of West Nusa Tenggara (NTB) Province for the 2015–2025 period. In general, the GRDP growth rate at constant prices (ADHK) in NTB Province is relatively high and fluctuating, often exceeding the average national economic growth (BPS, 2025) . NTB's economic growth is primarily driven by two main engines: exploration, mining, and processing of copper and gold by PT Amman Mineral Nusa Tenggara in West Sumbawa Regency, and the gradual development and operation of the Mandalika Special Economic Zone (KEK) and the Mandalika International Circuit in Central Lombok Regency. (Pratama & Setiawan, 2022) . Although these two pillars succeeded in significantly boosting NTB's GRDP, the decline in the TPT in the ten regencies/cities throughout NTB was very slow and tended to be persistent. (Cahyono et al., 2022) . The empirical contrast between high GRDP growth and slow unemployment decline indicates the presence of the phenomenon of *jobless growth* , a condition where economic growth proceeds without being balanced by adequate labor absorption (Muzindutsi & Ngalawa, 2021) . The development of economic growth and TPT in West Nusa Tenggara Province during the 2015–2025 period is presented in Table 1.

jobless growth phenomenon can be explained through the Neoclassical Economic Growth Theory (Solow-Swan) developed by Robert M. Solow (1956) and Trevor W. Swan (1956) . This theory states that economic *output is influenced by capital accumulation* , labor growth , and technological progress . In NTB, GRDP growth is heavily dominated by large-scale capital accumulation in capital-intensive sectors. The enclave economy *in* these key sectors relies more on machine automation and physical capital than on massive local labor expansion (Cahyono et al., 2022 ; Fatimatuzzahro & Windhani, 2026) . As a result, the elasticity of labor absorption has decreased, so that the increase in GRDP has failed to create sufficient formal employment for the local community (Muzindutsi & Ngalawa, 2021 ; Khatiwada & Guerrero, 2020) .

The complexity of the unemployment problem in NTB is further emphasized by the Human Capital Theory *by* Theodore W. Schultz (1961) and Gary S. Becker (1964), which posits that education is a form of human capital investment to increase workers' marginal productivity. Based on data from the Average Years of Schooling (RLS) Indicator in NTB, the quality of the local workforce is currently still dominated by elementary school graduates (elementary/junior high school). (BPS, 2025) . This limited human capital triggers the phenomenon of skills mismatch , namely a condition where the qualifications of local job seekers do not align with the technical expertise specifications. (Sattinger, 1993) such as mining engineering, K3 certification, *hospitality service standards* , and foreign language proficiency (PA Sari & Basuki, 2023) needed by modern industry in West Sumbawa and the Mandalika Special Economic Zone (Susanti & Hidayat, 2025) . The development of RLS in NTB Province is presented in Table 1.

On the labor supply side, Jacob's *Labor Supply Theory* Mincer (1962) analyzed the demographic pressures occurring in NTB. Mincer explained that a person's decision to enter the job market is based on economic considerations regarding the ratio of work benefits compared to non-market activities. The increase in the Labor Force Participation Rate (TPAK) triggered by the demographic bonus has brought a new labor supply to NTB every year.

However, this surge in labor supply (*supply shock*) is not offset by adequate availability of formal employment, resulting in frictional and structural unemployment in ten districts/cities (Muzindutsi & Ngalawa, 2021 ; Rahmawati & Subanti, 2023) . The development of the TPAK in NTB Province is presented in Table 1.

This situation is exacerbated by the dynamics of regulations regarding the determination of the Regency/City Minimum Wage (UMK). Based on the Institutional Wage Theory *by* John R. Commons (1934) stated that wage levels are determined not only by market equilibrium but also by institutional factors such as government policies and employment regulations. Changes to wage regulations through Government Regulation No. 36 of 2021 and Government Regulation No. 51 of 2023 also influence the mechanism for setting minimum wages in regions. These changes to the minimum wage are relevant to study because they can influence labor costs and companies' recruitment decisions. Given that the NTB regional economy is dominated by Micro, Small, and Medium Enterprises (MSMEs) with limited capital flexibility, changes to the minimum wage can impact companies' ability to absorb labor. (Kurniawan & Woyanti, 2024 ; Panyi et al., 2025 ; Widarni & Wilantari, 2021 ; (Zhang et al., 2025) . The development of MSEs in NTB Province is presented in Table 1.

Table 1. Development of Macroeconomic and Employment Indicators in NTB Province (2015–2025)

No	Year	TPT (%)	GRDP (%)	RLS (Year)	TPAK (%)	Minimum Wage (Rupiah)
1	2015	4.49	4.37	7.39	65.58	1,368,000
2	2016	3.73	6.18	7.60	67.61	1,517,130
3	2017	3.52	4.94	7.80	68.20	1,663,747
4	2018	3,32	-0,06	7,88	68,37	1.850.685
5	2019	3,33	3,99	7,96	68,96	2.036.950
6	2020	4,10	-4,16	8,23	70,37	2.208.184
7	2021	3,57	3,24	8,33	69,09	2.208.184
8	2022	3,47	4,00	8.48	69.59	2,253,066
9	2023	3.51	5.15	8.59	70.22	2,417,676
10	2024	3.01	3.45	8.62	70.78	2,501,981
11	2025	2.92	4.80	8.81	71.19	2,664,610

Source: Central Statistics Agency (BPS) of West Nusa Tenggara Province, processed data (2026)

The data in Table 1 reflects the disparity between economic growth performance and labor market response in West Nusa Tenggara Province. While GRDP growth fluctuates sharply—including contractions due to the 2018 earthquake (-0.06%) and the 2020 COVID-19 pandemic (-4.16%), it recovers to 4.80% in 2025. The decline in the TPT is very slow, from 4.49% (2015) to 2.92% (2025). This condition confirms the emergence of the *jobless growth phenomenon* due to the dominance of the mining industry and capital *-intensive infrastructure projects* . (Pratama & Setiawan, 2022 ; Muzindutsi & Ngalawa, 2021) . On the other hand, the increase in RLS (7.39 to 8.81 years) and TPAK (65.58% to 71.19%) which was not offset by a proportional decrease in TPT indicates a *skills mismatch* and limited absorption capacity of the formal labor market for the surge in the new workforce (Sari & Basuki, 2023 ; Rahmawati & Subanti, 2023) . Meanwhile, the increasing trend of the MSE, which reached IDR 2,664,610 in

2025, will reduce operational costs for the MSME sector, which dominates the regional business structure (Kurniawan & Woyanti, 2024 ; Panyi et al., 2025 ; Zhang et al., 2025) **.**

Table 2. Average Research Indicators by Regency/City in NTB Province for the Period 2015–2025

No	Regency/City	TPT (%)	GRDP (%)	RLS (Year)	TPAK (%)	2015 Minimum Wage (Rp)	2025 Minimum Wage (Rp)
1	West Lombok	3.75	3.24	6.44	66.68	1,400,000	2,602,931
2	Central Lombok	3.15	3.50	5.99	69.85	1,330,000	2,602,931
3	Lombok Timur	2.72	3.10	6.19	68.16	1,330,000	2.602.931
4	Sumbawa	3.05	3.48	8,24	70.69	1,365,000	2,665,256
5	Dompu	2.58	4.26	8.36	72.97	1,330,000	2.602.931
6	Bima	3.11	3.75	8.27	71.83	1,330,000	2.602.931
7	West Sumbawa	4.58	1.97	9.15	67.99	1.505.000	2.834.020
8	North Lombok	2.56	1.88	5.86	72.15	1.330.000	2,609,826
9	Mataram City	5.66	3.73	12.08	64,65	1.430.000	2,859,620
10	Insurance company	4.28	3.71	10.96	65.91	1.330.000	2,662,719

Source: Central Statistics Agency (BPS) of West Nusa Tenggara Province, processed data (2026)

Table 2 shows significant spatial variation across regions in NTB. Mataram City leads the way with the highest RLS (12.08 years) and also recorded the highest average TPT (5.66%), reinforcing the phenomenon of educated unemployment and *skills mismatch* . West Sumbawa Regency, as a center of the extractive industry, also recorded a high TPT (4.58%) due to minimal local labor absorption in capital-intensive industries. Conversely, agricultural regions such as Dompu Regency and North Lombok recorded the lowest TPT (<2.60%) with TPAK above 72%, due to the flexibility of labor absorption in the agricultural sector and adequate informal family businesses (Muzindutsi & Ngalawa, 2021 ; Rahmawati & Subanti, 2023) .

Labor market dynamics and the determinants of unemployment have been extensively studied with mixed results. At the local and national levels, research by Widiantari et al. (2024) and Daroini & Sriningsih (2025) found that GRDP expansion and adjustments to regional minimum wages impacted employment opportunities, but absorption capacity in the formal sector remained limited. This finding is reinforced by Cahyono et al.'s (2022) analysis of the low elasticity of labor absorption in capital-intensive sectors, as well as by Rahmawati & Subanti's (2023) study , which highlighted the dominance of labor absorption in the informal sector. Internationally, research by Muzindutsi & Ngalawa (2021) and Bagnoli & Bertoméu-Sánchez (2022) confirms the presence of *the jobless growth phenomenon* in regions that rely on extractive and capital-intensive industries. From a human capital perspective, studies by Acharya et al. (2022) and Panyi et al. (2025) demonstrated that increasing educational levels that are not aligned with industry needs triggers skills mismatch *and* the phenomenon of educated unemployment. Furthermore, studies by Widarni & Wilantari (2021) and Zhang et al. (2025) show that regional wage regulations interact closely with the flexibility of MSMEs in determining their labor absorption capacity.

The variation in the results of previous studies indicates a persistent research gap . Furthermore, studies in NTB Province have not integrated the variables of Economic Growth (GRDP ADHK), RLS, TPAK, and UMK simultaneously in a balanced panel data model over a long period (2015–2025). The novelty *of* this research lies in its comprehensive examination that captures the dynamics of the post-COVID-19 labor market and the impact of the latest wage regulations (PP No. 36/2021 and PP No. 51/2023). This study aims to examine and analyze the determinants of TPT and confirm the existence of the phenomenon *of jobless growth* and *skills mismatch* in 10 districts/cities in NTB Province.

METHODS

This study uses a quantitative approach with an associative explanatory method to test and analyze causal relationships and the influence of independent variables on dependent variables (Gujarati & Porter, 2009 ; Stock & Watson, 2015) . The type of data used is quantitative secondary data in the form of *balanced panel data* . The panel data combines a *cross-section dimension* in the form of 10 districts/cities in West Nusa Tenggara Province and a *time series dimension* over an 11-year period (2015–2025), resulting in a total of 110 observations (Baltagi, 2021) . Data were obtained from the official publication of the Central Statistics Agency (BPS) of West Nusa Tenggara Province through documentation techniques and literature studies.

All variables in this panel data regression model were analyzed in level form or without natural logarithmic (ln) transformation. The use of this level data form is based on methodological considerations that the Economic Growth variable had a negative value in 2018 (-0.06%) and 2020 (-4.16%) due to the impact of the Lombok earthquake and the COVID-19 pandemic, where the natural logarithm function is mathematically undefined for negative numbers or zero (Wooldridge, 2010) . In addition, the use of level data in ratio/percentage variables facilitates the interpretation of regression coefficients in direct percentage form (Stock & Watson, 2015) . The operationalization and definition of variables used in this study are summarized in Table 3.

Table 3. Operational definitions and measurement of research variables

No	Variable	Variable code	Operational definition	Unit	S kala
1	Open Unemployment Rate (Y)	TPT	The workforce that is unemployed, looking for work, or preparing to start a business	Percentage (%)	Ratio
2	Economic Growth GRDP ADHK (X_1)	GRDP	Growth rate of Gross Regional Domestic Product at constant prices (ADHK) in 2010	Percentage (%)	Ratio
3	Average Length of Schooling (X_2)	RLS	The average number of years of formal education completed by people aged 25 years and over	Year	Ratio
4	Participation Rate Labor Force (X_3)	TPAK	Working age population (15 years and over) who are	Percentage (%)	Ratio

			economically active in the workforce		
5	District/City Minimum Wage (X_4)	Minimum Wage	The monthly minimum wage standard set by the regional government for workers in district/city a	Rupiah (Rp)	Ratio

Source: BPS NTB Province, processed data (2026)

The panel data regression equation model used to analyze the influence of Economic Growth, Average Years of Schooling, Labor Force Participation Rate, and District/City Minimum Wage on the Open Unemployment Rate is formulated as follows: (Baltagi, 2021 ; Wooldridge, 2010) :

$$TPT_{it} = \beta_0 + \beta_1 PDRB_{it} + \beta_2 RLS_{it} + \beta_3 TPAK_{it} + \beta_4 UMK_{it} + \varepsilon_{it}$$

Information:

- TPT_{it} = Open Unemployment Rate of region i in year t ;
- β_0 = constant;
- $\beta_1 - \beta_4$ = Regression coefficient of each independent variable ;
- $PDRB_{it}$ =Economic growth of region i in year t;
- RLS_{it} = Average length of schooling in region i and year t;
- $TPAK_{it}$ = Open Unemployment Rate of region i in year t;
- UMK_{it} = Minimum wage of district/city in region i in year t;
- ε_{it} = error term;
- i = Regency/ city ;
- t = 2015–2025 .

The econometric data processing was carried out using EViews 12 software. To determine the best estimation technique among *the Common Effect Model* (CEM), *Fixed Effect Model* (FEM), and *Random Effect Model* (REM), three stages of model specification testing were carried out (Baltagi, 2021) . Chow Test (Chow, 1960) was first applied to select the best model between CEM and FEM based on *the Cross-section F probability value* , where if the probability value is less than 0.05, then FEM is decided as the more appropriate model. Next, the Hausman Test (Hausman, 1978) was conducted to choose between FEM and REM based on *the Cross-section Random probability value* , where if the probability value is greater than 0.05, then REM is chosen as the best estimate. As a final confirmation, *the Lagrange Multiplier* (LM) test based on the Breusch-Pagan test (Breusch & Pagan, 1980) was conducted to compare CEM and REM, where *the Breusch-Pagan probability value* below 0.05 confirmed the presence of a random *effect* .

To ensure that the resulting regression model meets *the Best Linear Unbiased Estimator* (BLUE) criteria, a classical assumption test is conducted that includes four forms of diagnostic evaluation (Basuki & Prawoto, 2016; Gujarati & Porter, 2009). The Normality Test is applied using the *Jarque-Bera method* to ensure that the residuals are normally distributed with the condition that the probability value exceeds 0.05. The Multicollinearity Test is evaluated through the correlation matrix between independent variables to confirm the absence of a very strong linear relationship between the independent variables, with the criteria of a correlation coefficient below 0.80. The Heteroscedasticity Test is analyzed through the residual graph distribution pattern (*residual plot*) or *the Breusch-Pagan-Godfrey test* to ensure that the

variance of the residuals is constant or homoscedastic. The autocorrelation test was evaluated using the *Durbin-Watson* (DW) statistic by comparing the DW statistic value to the table value d_L and d_u at a significance level of 5% (α= 0.05) to ensure the absence of serial autocorrelation in the residuals (Gujarati & Porter, 2009). Consideration of the *short panel data structure* (with a time span of less than 15 years) was also applied, where the problem of serial autocorrelation between times tends to be minimal compared to *long panel data.* (Baltagi, 2021 ; Wooldridge, 2010) .

The final stage of this econometric analysis is to conduct hypothesis testing to draw statistical conclusions. Partial Test (t-Test) is applied at a significance level of 5% (α= 0.05) to assess the individual influence of each independent variable on the TPT based on a comparison of the values t_{hitung} with t_{tabel} and the significance value $\rho - value$. Simultaneous Test (F-Test) is conducted to test the influence of all independent variables together on the dependent variable by comparing the values F_{hitung} and F_{tabel}. In addition, the level of goodness *of fit of the model* is measured through the Coefficient of Determination (R^2 and *Adjusted* R^2) to find out how much percentage of the variation in the Open Unemployment Rate (TPT) in West Nusa Tenggara Province can be explained by the variables of Economic Growth, RLS, TPAK, and UMK, while the remainder is explained by other variables outside the model.

RESULTS AND DISCUSSION

Panel Data Regression Analysis Results

Testing and Model Selection

To determine the best estimation technique among *the Common Effect Model* (CEM), *Fixed Effect Model* (FEM), and *Random Effect Model* (REM), three stages of model specification testing were carried out, including the Chow Test, Hausman Test, and *Lagrange Multiplier Test.* (Baltagi, 2021) .

Table 4. Results of specification tests and selection of panel data regression models

Testing	Model	Test Statistics	Prob ($\rho - value$)	Decision
Chow Test	CEM vs FEM	Cross-section F	0,000	Selected FEM
Hausman test	FEM vs REM	Cross-section Random	0.101	Selected REM
Lagrange Multiplier Test	CEM vs REM	Breusch-Pagan	0,000	Selected REM

Source: E-views 12, processed data.

Based on the testing in Table 4, the Chow Test produces a *Cross-section F probability value* of 0.000 < 0.05. As a result, H_0 it is rejected and H_1 accepted, so *the Fixed Effect Model* (FEM) is decided to be more appropriate than *the Common Effect Model (CEM). Furthermore, the Hausman Test produces a Random Cross-section* probability value of 0.101 > 0.05. As a result, H_0 it is accepted and H_1 rejected, so *the Random Effect Model* (REM) is chosen as a more appropriate model than the FEM. To strengthen the results of the model selection, *The Lagrange Multiplier* test yields *a Breusch-Pagan* probability value of 0.000 < 0.05. Consequently, it is rejected H_0 and H_1 accepted, confirming that the REM is significantly superior to the CEM.

Thus, the best model selected to analyze the factors influencing the Open Unemployment Rate (TPT) in West Nusa Tenggara Province is *the Random Effect Model* (REM).

Model Regresi

Table 5. Hasil regresi data panel random effect model (REM)

Variabel	Coefficient	Std. Error	t-Statistik	Prob
Constanta (C)	16.842	2.847	5.915	0.000
PDRB (X1)	-0.041	0.013	-3.098	0.002
RLS (X2)	0.225	0.064	3.517	0.000
TPAK (X3)	-0.002	0.000	-4.933	0.000
Minimum Wage (X4)	-2.38E-07	2.40E-07	-0.991	0.323
R-squared	0.493416	F-statistic	25.56769	
Adjusted R-squared	0.474118	Prob(F-statistic)	0.000000	
Durbin-Watson stat	1.335196			

Source: E-views 12, processed data.

Based on the results of panel data regression using *the Random Effect Model* (REM) approach, the following equation is obtained:

$$TPT_{it} = 16.842 - 0.041PDRB_{it} + 0.225RLS_{it} - 0.002TPAK_{it} - 2.337UMK_{it}$$

The interpretation of the model is as follows:

- The regression coefficient value of Economic Growth (X_1) is -0.041 with a probability value of 0.002, which is smaller than 0.05, so that Economic Growth has a negative and significant effect on the Open Unemployment Rate at the 5% level.
- The regression coefficient value of Average Years of Schooling (X_2) is 0.225 with a probability value of 0.000, less than 0.05, so that Average Years of Schooling has a positive and significant effect on the Open Unemployment Rate at the 5% level.
- The regression coefficient value of the Labor Force Participation Rate (X_3) is -0.002 with a probability value of 0.000, less than 0.05, so that the TPAK has a negative and significant effect on the Open Unemployment Rate at the 5% level.
- The regression coefficient value of the Regency/City Minimum Wage (X_4) is -0.000000238 (-2.38E-07) with a probability value of 0.323, greater than 0.05, so that the UMK has a negative but not significant effect on the Open Unemployment Rate at the 5% level .

Classical Assumption Test

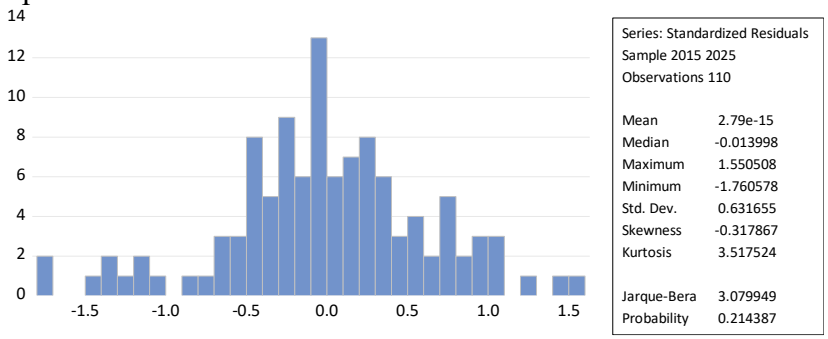


Figure 1. Normality Test Results
Source: E-views 12, processed data

Based on the output results above, it is known that the Jarque-Bera probability value is 0.214. > 0.05. This means that the data in this study has met the assumption of normality .

Table 6. Results Multicollinearity Test

Variables	X1	X2	X3	X4
X1	1.000000	0.058233	-0.060644	-0.099630
X2	0.058233	1.000000	-0.348216	0.290688
X3	-0.060644	-0.348216	1.000000	0.405907
X4	-0.099630	0.290688	0.405907	1.000000

Sumber : E-views 12, data diolah

Based on Table 6 above, it can be seen that all correlation values between independent variables (X1, X2, X3, X4) are below 0.80. This indicates that there are no symptoms of multicollinearity in the regression model, because there is no very strong relationship between the independent variables. Thus, the four variables (X1, X2, X3, X4) are suitable for use in the regression model.

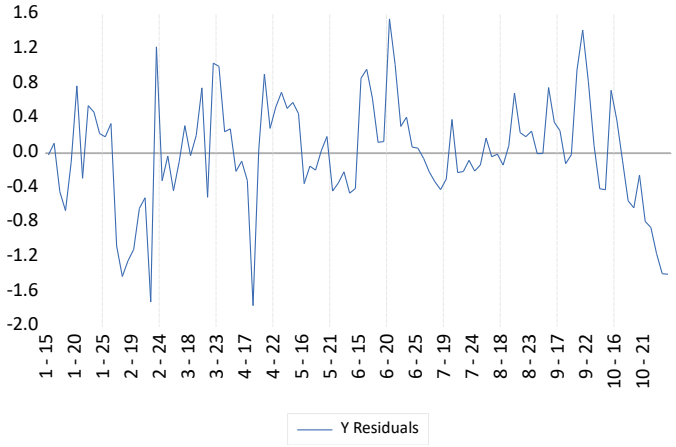


Figure 2. Heteroscedasticity Test Results
Source: E-views 12, processed data

Based on the results of the heteroscedasticity test, the residual graph shows that it does not exceed the limits (500 and -500), meaning the residual variances are the same. Therefore, there are no symptoms of heteroscedasticity and the heteroscedasticity test passes.

Autocorrelation Test Results

Based on table 5 above, the results of the Durbin-Watson test obtained a Durbin-Watson value of 1.3351, then dL of 1.6146 and dU of 1.7651. Because the DW value (1.3351) < dL (1.6146), it can be concluded that there is positive autocorrelation in the regression model.

Hypothesis Testing

Partial Test Results (t-test)

Table 5 above shows the t-test value along with the probability value of each independent variable. This study also used a hypothesis test interpretation with a significance

level of 0.05 or 5%, with a t-table value of 1.982815 and a degree of freedom (df) value of 105 .

Partial Test Results (F test)

Based on the results of data processing, it can be seen in table 5 above that the probability value of the F-statistic is 0.000 < 0.05 or based on the F-calculated value > F-table, namely 25.56769 > 2.45821013. Thus, all independent variables together have a significant effect on the dependent variable.

Coefficient of Determination (R^2) Test

Based on Table 5, the *R-squared* value is 0.493. This means that the variables Economic Growth, Average Years of Schooling, Labor Force Participation Rate, and District/City Minimum Wage are able to explain changes in the Open Unemployment Rate by 49.34 percent, while 50.66 percent is explained by other factors outside the model.

DISCUSSION

Influence of Economic Growth (GRDP ADHK) On the Open Unemployment Rate in NTB Province

Panel data regression results indicate that economic growth has a negative and significant effect on the open unemployment rate **.** This can be seen from the coefficient value of -0.041 and the probability value of 0.002 < 0.05 . This means that every 1% increase in economic growth will be followed by a decrease in the open unemployment rate of 0.041 % in districts/cities in NTB. These results align with Keynesian theory and Okun's Law, which explain that when economic activity increases, demand for goods and services also increases. This can encourage companies to increase production and require more workers. However, the responsiveness of unemployment reductions to economic expansion in West Nusa Tenggara (NTB) is very small. This condition shows that economic growth in NTB has not been fully followed by comparable job creation, thus indicating that there is *jobless growth* phenomenon (Pratama & Setiawan, 2022) .

This situation occurs because the economic driving sectors of NTB, such as mining and the Mandalika Special Economic Zone (SEZ), are more capital- and technology-intensive, resulting in suboptimal absorption of local labor (Fatimatuzzahro & Windhani, 2026) . This finding aligns with research by Putri & Purbadharmaja (2023) and Wahyuni et al. (2022). where the Economic Growth variable has a negative and significant effect on the Open Unemployment Rate. However, the results of this study are inconsistent with several other empirical studies. Research by Sihombing & Febriani (2021) In fact, they found that economic growth had a positive and significant effect on the TPT due to high levels of automation (*labor displacement*) in the industrial sector, replacing human labor. Meanwhile, this finding also differs from Arisanti & Mulyani (2022) and Rahmanto & Woyanti (2021) , who concluded that economic growth had no significant effect on the TPT. This insignificance is due to GRDP growth being concentrated only in the isolated financial sector, which does not absorb the local workforce, or triggering a wave of in-migration of job seekers from outside the region that exceeds the absorption capacity of the regional labor market.

The Effect of Average Years of Schooling (RLS) on the Open Unemployment Rate in West Nusa Tenggara Province

The results of the panel data regression show that the average length of schooling **has a** positive and significant effect on the Open Unemployment Rate at a 5% significance level. This is indicated by a coefficient value of 0.225 and a probability value of 0.000 < 0.05 . This means that every one-year increase in the Average Length of Schooling will be followed by a 0.225 % increase in the TPT in West Nusa Tenggara Province. These results differ from Human *Capital Theory* . developed by Schultz (1961) and Becker (1964) , where the increase in the length of schooling in NTB was actually followed by an increase in the TPT. This is evident in several regions, such as Mataram City, which has an average RLS of 12.08 years and Bima City at 10.96 years, but also has a relatively high average TPT compared to several other districts . This condition can occur because longer education does not necessarily match the needs of available jobs . One cause is a skills mismatch *,* namely when the abilities possessed by job seekers do not match the skills required by companies. In NTB, the mining and tourism sectors require certain skills, such as mining engineering, K3 certification, hospitality skills *,* and foreign language skills. If graduates do not have skills that match these needs, they will have a harder time finding work. (Sattinger, 1993 ; Susanti & Hidayat, 2025)

Furthermore, this phenomenon is closely related to the high rate of educated unemployment . As explained by Todaro & Smith (2015) , individuals with higher levels of education have higher wage expectations (*reservation wages) and social status. They tend to choose jobs that align with their educational background, especially formal jobs in the government or office sectors.* This educated workforce is often reluctant to be absorbed into the agricultural sector or informal jobs because they are considered incompatible with the educational investment they have made (Simanjuntak, 2001 ; R. Sari & Handayani, 2023) . As a result, the waiting period or job search time *becomes* much longer, which ultimately contributes to an increase in the Open Unemployment Rate. in the area. The results of this study are in line with the research of Sari & Basuki (2023) and Rahmawati & Subanti (2023) where the Average Years of Schooling (RLS) variable has a positive and significant effect on the Open Unemployment Rate. Conversely, these results contradict those of Utami & Sugiharti (2021) , who found a significant negative impact of RLS due to the effective *link and match* between the educational curriculum and industry needs. These findings also differ from those of Febriani & Nugroho (2023), who concluded a negative and insignificant impact, stating that increasing educational levels in their region did not trigger educated unemployment due to the high rate of independent job creation (educated entrepreneurship).

The Influence of the Labor Force Participation Rate (TPAK) on the Open Unemployment Rate in West Nusa Tenggara Province

The results of panel data regression show that the Labor Force Participation Rate has a negative and significant effect on the Open Unemployment Rate. at a significance level of 5%. This is indicated by the coefficient value of -0.002 and the probability value is 0.000 < 0.05 **.** This means that every 1% increase in TPAK will be followed by a decrease in TPT of 0.002 % in West Nusa Tenggara Province. These results are consistent with Mincer's Labor Supply Theory (Mincer , 1962) , which explains that a person's decision to enter the labor market is influenced by the need to earn income. In West Nusa Tenggara Province, especially in areas with a high agricultural-based economic activity, high labor force participation does not always

lead to increased unemployment. Residents who enter the labor market tend to seek and accept available jobs. This is evident in Dompu and North Lombok Regencies, which have relatively high TPAK (Employment Allowances for Employment), namely more than 72%, but their unemployment rates remain relatively low.

This negative relationship may be attributed to the dominance of the informal sector in the NTB labor market, particularly in rural and agrarian areas, where employment opportunities are largely concentrated in agriculture, small-scale trade, livestock farming, fisheries, and family-owned businesses. Under these conditions, an increase in the Labor Force Participation Rate (TPAK) may contribute to reducing the Open Unemployment Rate (TPT) because individuals entering the labor market can be absorbed into various informal economic activities. Many residents choose to participate directly in economic activities to maintain household income and fulfill their daily needs, even when the available employment opportunities are not fully supported by formal employment arrangements. However, a decline in the unemployment rate does not necessarily indicate an improvement in overall employment quality. Some workers may experience limited working hours, low wages, unstable income, and a lack of social protection. Such conditions reflect the persistence of underemployment and vulnerable employment within the regional labor market (Muzindutsi & Ngalawa, 2021; Rahmawati & Subanti, 2023). Therefore, the low TPT observed in several agrarian districts in NTB should not be interpreted solely as an indication of successful labor absorption but should also be evaluated in terms of employment productivity, income adequacy, and job security.

These findings are consistent with the studies conducted by Rahmawati and Subanti (2023) and Widiantari et al. (2024), which demonstrate that the Labor Force Participation Rate (TPAK) has a negative and significant effect on the Open Unemployment Rate (TPT). This relationship suggests that greater labor force participation can contribute to reducing unemployment when individuals are able to enter available economic activities, particularly in regions where informal employment plays a substantial role in absorbing workers. Nevertheless, the findings differ from those of Putro and Purwanti (2021), who identified a positive and significant effect of TPAK on TPT. Their findings indicate that an increase in the labor force does not always lead to greater employment absorption, particularly when the expansion of labor supply is not accompanied by sufficient job creation. Furthermore, the results also differ from Hidayat and Astuti (2021), who reported a positive but insignificant relationship between TPAK and TPT. This suggests that the relationship between labor force participation and unemployment may vary depending on regional economic structures, the availability of employment opportunities, and the capacity of different economic sectors to absorb additional workers. Accordingly, the effect of TPAK on TPT cannot be separated from the characteristics of the regional labor market, particularly the balance between labor supply, employment opportunities, and the quality of available jobs.

The Influence of District/City Minimum Wages (UMK) on the Open Unemployment Rate in West Nusa Tenggara Province

The panel data regression results show that the Regency/City Minimum Wage has a negative and insignificant effect on the Open Unemployment Rate, indicated by a coefficient value of -0.000000238 with a probability value of 0.323 > 0.05 . This means that even though every increase in the UMK of Rp1,000,000 mathematically reduces the TPT by 0.238%, the change in the minimum wage has not statistically had a significant impact on the unemployment

rate in the 10 regencies/cities of NTB Province. This phenomenon can be explained through the perspective of John R. Commons' *Institutional Wage Theory* (1934), where wage levels are not purely determined by the market, but rather by institutional and regulatory factors. In this regard, post-pandemic wage policies, through Government Regulation No. 36 of 2021 and Government Regulation No. 51 of 2023, regulate a more measurable wage-setting mechanism that takes into account the real capabilities of the business world. This adjustment reduces the shock of excessive labor costs for companies, so that changes to the minimum wage (UMK) do not trigger layoffs. On the other hand, NTB's economic conditions are still heavily supported by the informal sector, MSMEs, and agriculture. Most economic activities in these sectors have flexible wage agreement patterns and do not fully comply with the UMK standards (Hidayat & Astuti , 2021 ; Rahmawati & Subanti, 2023) . Consequently, changes to minimum wage regulations do not directly influence decisions. local business actors in adding or reducing the workforce.

This finding aligns with Fatimatuzzahro and Windhani (2026) and Kurniawan and Woyanti (2024), who found that the Regency/City Minimum Wage (UMK) had no significant effect on the TPT. These results confirm that the UMK is not the primary factor influencing unemployment in NTB, while also extending the study by Widiantari et al. (2024) with a longer period (2015–2025) and a more comprehensive integration of macroeconomic variables. Conversely, these results contradict those of Sugiharti et al. (2022) and Hidayat & Woyanti (2020) , who found a positive and significant effect, where an increase in the UMK triggered wage *rigidity* and labor efficiency in the formal sector. These findings also differ from those of Anggraini & Setiawin (2020) , who concluded a negative and significant effect, where wage increases were considered capable of boosting people's purchasing power to stimulate production and labor absorption.

CONCLUSION AND RECOMMENDATIONS

Using panel data regression analysis in 10 districts/cities in West Nusa Tenggara Province, this study evaluates the determinants of the Open Unemployment Rate (TPT). The estimation results show that economic growth (GRDP) has been proven to contribute to reducing unemployment, although the impact is not optimal due to the dominance of capital-intensive sectors that trigger jobless growth . Meanwhile, an increase in the Average Years of Schooling (RLS) is actually associated with high unemployment due to a mismatch between skills *and* job expectations in the formal sector. On the other hand, an increase in the Labor Force Participation Rate (TPAK) is accompanied by a decrease in unemployment due to high absorption in the flexible rural informal sector, although this still leaves the problem of underemployment . Regarding wage policy, changes in the Regency/City Minimum Wage (UMK) do not have a significant impact on the fluctuations in unemployment rates in the region. This indicates that the NTB economic structure, which is heavily dominated by MSMEs and the informal sector, tends to operate with a flexible wage system. As a result, business actors in these sectors are not fully bound by government regulatory standards, so the dynamics of setting formal minimum wages do not significantly change decisions about recruiting or firing workers.

These findings support several policy considerations for local governments. First, the government needs to encourage partnerships between capital-intensive companies in the mining and tourism sectors and local MSMEs to optimize labor absorption through the regional supply chain, while simultaneously reforming vocational education curricula and expanding technical competency certification to reduce *skills mismatches* among the educated workforce. Second,

local governments need to maintain and strengthen labor absorption by expanding employment opportunities in the agriculture, trade, MSMEs, and informal sectors, which have historically been the mainstays of the workforce. Third, strengthening social protection nets and social security for informal workers and vulnerable groups needs to be expanded through access to BPJS Kesehatan (Healthcare Social Security Agency), BPJS Ketenagakerjaan (Employment Social Security Agency), and social assistance programs such as Direct Cash Assistance (BLT) to maintain community welfare during economic pressures, accompanied by a minimum wage formulation that is more adaptive to the real capabilities of MSMEs.

This study has several limitations. The use of macro indicators in a static model does not fully capture the detailed aspects of job quality, and the minimum wage indicator only measures formal standards without reflecting the real wage levels received by workers in the informal sector. Furthermore, the current estimates do not account for geographic variation and worker mobility specifically between districts/cities. Therefore, future research could incorporate additional indicators such as the proportion of informal sector workers, realized direct investment (PMA/PMDN), inflation rates, and apply spatial econometric methods (*Spatial Panel Econometrics*) or dynamic panel data to capture the spillover effects *of* labor markets across regions more comprehensively.

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