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THE EFFECT OF AVERAGE LENGTH OF SCHOOLING, MINIMUM WAGE AND ECONOMIC GROWTH ON OPEN UNEMPLOYMENT RATE IN DISTRICTS/CITIES OF BANTEN PROVINCE 2013-2022

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Abstract:

This study aims to determine the effect of the average length of schooling, minimum wage and economic growth on open unemployment rates in the districts/cities of Banten province. The analytical method used is quantitative, with multiple linear regression analysis techniques. The data used in this study were obtained secondary from the Central Bureau of Statistics of Banten. Based on the results of the best model estimation test, classical assumptions and hypothesis testing, it is found that (1) the average length of schooling has a negative and significant effect on the open unemployment rate in the Regency/City of Banten Province showing a t value of -4.271933 and a probability value of 0.0001 more lower than 0.05; (2) the minimum wage has a negative and insignificant effect on the open unemployment rate in the Regency/City of Banten Province showing a t value of -1.193025 and a probability value of 0.2371 which is greater than 0.05; (3) economic growth has a negative and significant effect on the open unemployment rate in the Regency/City of Banten Province showing a t value of -4.381631 and a probability value of 0.0000 which is lower than 0.05.

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

Background

Indonesia is a developing country that has challenges and obstacles in economic development. Economic development in developing countries, especially Indonesia, generally has problems such as poverty, economic disparities, high population growth and high unemployment rates. To achieve economic development in Indonesia, the government has tried to improve the living standards of the Indonesian people, by implementing monetary policies, fiscal policies and so on (Prayitno & Kusumawardani, 2022). One of the problems that still often arises in Indonesia is the high unemployment rate, where the number of jobs is not proportional to the number of job seekers resulting in many people being unable to find work.

Unemployment is a situation where someone belonging to the labor force wants to get a job but has not been able to get one. Unemployment is an important problem that often



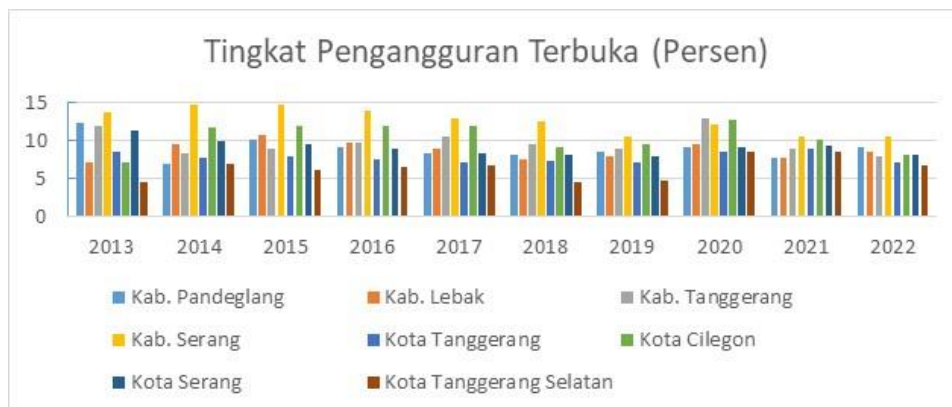
occurs in every country, especially in developing countries like Indonesia (Priastiwi & Handayani, 2019). According to Mankiw (2007) the unemployment rate can be calculated by comparing the number of unemployed with the number of the labor force expressed in percent. Furthermore, the Central Statistics Agency (BPS) defines open unemployment as the entire workforce looking for work, both those looking for work for the first time and those who have worked before (Mustakim et al., 2022). To get an idea of the severity of the unemployment problem, the open unemployment rate (TPT) is used as a parameter. Regions with higher TPT rates have higher unemployment rates. This can be seen in the table below:

**Table 1. Open Unemployment Rate in Java Island 2013-2022
(In Percent)**

Provinsi	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Dki Jakarta	8.63	8.47	7.23	6.12	7.14	6.65	6.54	10.95	8.50	7.18
Jawa Barat	9.16	8.45	8.72	8.89	8.22	8.23	8.04	10.46	9.82	8.31
Jawa Tengah	6.01	5.68	4.99	4.63	4.57	4.47	4.44	6.48	5.95	5.57
DIY	3.24	3.33	4.07	2.72	3.02	3.37	3.18	4.57	4.56	4.06
Jawa Timur	4.30	4.19	4.47	4.21	4	3.91	3.82	5.84	5.74	5.49
Banten	9.54	9.07	9.55	8.92	9.28	8.47	8.11	10.64	8.98	8.09

Source: BPS (2023)

Based on BPS data in Table 1, it can be seen that the percentage of unemployed in the six provinces with the highest unemployment rate in Java in 2013-2022 has fluctuated. Banten province is almost always the province with the highest unemployment rate every year, followed by West Java province DKI Jakarta. In 2013-2019 the unemployment rate in Banten Province was the highest in Java. In 2013 TPT in Banten was 9.54%. Then in 2014 it decreased to 9.54% to 9.07%, then in 2015 it increased again to 9.55%. From 2016 to 2022 the unemployment rate in Banten Province only experienced an increase in 2017 and 2020. Based on BPS data for 2013-2022 TPT in Regencies/Cities in Banten Province tends to fluctuate. The district/city that has the highest unemployment rate in Banten is Kab. Serang with an overall average from 2013 to 2022 of 12.67%. Meanwhile, the Regency/City that has the lowest TPT is South Tangerang City with an overall average from 2013 to 2022 of 6.41%. In more detail can be seen in the image below.



**Figure 1. Open Unemployment Rate in Regencies/Cities in Banten Province 2013-2022
(In Percent)**



Source: BPS (2023)

Based on Figure 1. there are differences in TPT in 8 districts/cities in Banten Province, factors causing these differences such as an unequal increase in population, geographical conditions, natural resources, availability of jobs in each region and factors of population movement either urbanization or migration. Various factors can affect the open unemployment rate (TPT) in Banten, one of which is the level of education. Setiawan (2015) stated in his research that an increase in employment causes unemployment if there are not enough vacancies available. Banten's high population does not mean they are highly skilled while the measure of HR investment here is the level of education which will have an impact on TPT in the area. One way to improve the quality of education is to improve the quality of human resources so they can respond to change and prepare the country for development.

The next factor that can affect unemployment is the minimum wage. According to Alghofari (2010), wages have an influence on the number of labor force working. If the higher the set wage rate, it will affect the increase in production costs, as a result, to carry out efficiency, companies are forced to reduce labor, which results in high unemployment (Kurniawan, 2013). But on the other hand, setting high wages for workers can improve their purchasing power which will ultimately encourage enthusiasm for work and can increase work productivity so as to reduce unemployment.

Economic growth is one that affects the open unemployment rate. According to Okun's law (Okuns Law) that an increase in economic growth will increase employment opportunities which will absorb labor so that in the end it will reduce the unemployment rate. This is because increased economic growth will be followed by an increase in people's productivity in producing goods and services. To produce goods and services, of course, requires resources such as labor, this workforce will carry out the production process so that it can reduce the unemployment rate (Ahmad Sahlan Hadi & Riani, 2022).

THEORETICAL FRAMEWORK

Open Unemployment Rate

According to Kaufan & Hotchkiss (1999), unemployment is a measure that is taken if someone does not do work but they are in the process of actively trying to find work in the last four weeks (Wardiansyah et al., 2016). Unemployment are people who are already in the labor force who want to get a job but have not yet gotten one. Unemployment can have a negative impact on a country, namely if the unemployment rate is higher, this will have a negative impact because unemployment causes some households to be unable to meet consumption needs because they do not have income and jobs (Himo et al., 2022). The magnitude of the open unemployment rate is one of the indicators or parameters in measuring the success of economic growth.

According to the Classical Theory there are two reasons that cause unemployment, namely (Dongoran et al., 2016):



- a) The strength of the wage rate, labor unions are not willing to accept a lower wage rate, then the demand for labor will increase, so that unemployment can be reduced.
- b) The second power arises from the big businessmen, whose monopoly power increases, so that they are more flexible in determining the market price level

Average Length of Schooling

Education is one of the basic human capital that must be fulfilled to achieve sustainable economic development. A person who has higher abilities, skills and education will have the possibility to earn a high income compared to people who have lower abilities, skills and education (Feriyanto, 2014). RLS is used as an indicator to understand the level of education in a population and monitor educational progress. This indicator can help in seeing the extent to which education is accessed by the community, as well as provide an overview of the level of education achieved by individuals in it (Yamin, 2015).

The Human Capital Theory presented by Schultz (1961) states that the process in education has a positive influence on economic growth. The argument that supports this theory of human capital is that if human resources have a higher level of education as seen from the barometer of the length of time they have attended formal education or school, so that they have jobs and wages that are in accordance with their education, the higher the education taken, the better it will be compared to with human resources with lower levels of education. So that education is one of the future investments for the human resource sector to get better (Hasan, 2018).

Minimum Wage

According to the Central Bureau of Statistics, the minimum wage is the lowest wage with fixed benefits but not included overtime wages paid to employees based on the type of position or type of work in all regencies/cities in one province. The minimum wage is the determination of a minimum standard that must be paid by employers or industry players to employees, employees or laborers in the business or work environment (Ramiayu, 2013).

Based on UU No.13 tahun 2003 concerning employment, the minimum wage is determined based on the Decent Living Needs (KHL) of workers, which is adjusted to productivity and economic growth which includes:

- 1) The minimum wage is based on the province or district/city
- 2) The minimum wage is based on the sector in the province or district/city

Economic Growth

According to (BPS, 2022), GRDP is defined as the total added value generated by all business units in an area, or is the total value of final goods and services produced by all economic units in an area. The higher the economic growth of a region indicates the better the regional economic activity. GRDP at current prices illustrates the added value of goods and services which is calculated using prices in each year, while GRDP at constant prices shows



the added value of goods and services which are calculated and uses prices in a particular year as a basis (Sihombing & Sihombing, 2022).

According to Adam Smith, the growth process will occur simultaneously and have a relationship between one another. Improved performance in a sector will increase the attractiveness of capital accumulation, encourage technological progress, increase specialization, and expand markets. These things will later encourage economic growth to become more rapid (Melani & Alam, 2020).

METHOD

This research uses quantitative methods. The quantitative method is a research method that can be interpreted as a research method based on the philosophy of positivism to study several populations or samples, analyze quantitative data for the purpose of testing established hypotheses (Sugiyono, 2016). The data used in this research is secondary data with panel data type which is a combination of time series intensity data and cross sectional data. The time series data used is from 2013-2022 (for 10 years). The cross section data used are 8 regencies/cities in Banten Province.

RESULT

Classic assumption test

Multicollinearity Test

Table 2. Multicollinearity Test Results

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.061266	108.3932	NA
LOG(X1)	0.012894	105.4153	1.012978
X2	4.17E-06	2.176542	1.076696
X3	8.70E-05	4.628291	1.071382

Source: Output Eviews 9

Based on the table above it can be seen that for each independent variable it has a Variance Inflation Factor (VIF) value of ≤ 10 , so multicollinearity does not occur.

Heteroscedasticity Test

Table 3. Heteroscedasticity Test Results

Heteroskedasticity Test: Glejser

F-statistic	1.459759	Prob. F(3,74)	0.2325
Obs*R-squared	4.358086	Prob. Chi-Square(3)	0.2253
Scaled explained SS	4.160471	Prob. Chi-Square(3)	0.2446

Source: Output Eviews 9



Based on the test results, the probability value of the independent variable ≥ 0.05 means that there is no heteroscedasticity symptom.

Hypothesis Testing

Panel Data Regression Analysis

The panel data regression equation used by the researcher aims to estimate the dependent variable if the independent variable is increased or decreased. The following are the results of the Fixed Effect Model (FEM) panel data regression conducted by researchers.

Table 4. FEM Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.286051	1.408067	5.884700	0.0000
LOG(X1)	-2.770982	0.648648	-4.271933	0.0001
X2	-0.001854	0.001554	-1.193025	0.2371
X3	-0.028450	0.006493	-4.381631	0.0000

Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.737908	Mean dependent var	2.198577	
Adjusted R-squared	0.698789	S.D. dependent var	0.244854	
S.E. of regression	0.134382	Akaike info criterion	-1.046223	
Sum squared resid	1.209924	Schwarz criterion	-0.713866	
Log likelihood	51.80269	Hannan-Quinn criter.	-0.913174	
F-statistic	18.86350	Durbin-Watson stat	1.842978	
Prob(F-statistic)	0.000000			

Source: Output Eviews 9

Based on the results of data processing, the following results are obtained: $Y = 8.286051 - 2.770982 - 0.001854 - 0.028450$.

Based on the regression equation, it can be concluded as follows: If the Average Length of Schooling, Minimum Wage, and Economic Growth are constant at 0 then Y (Open Unemployment Rate) is 8.286051. If X1 (Average Length of Schooling) increases by 1%, then Y (Open Unemployment Rate) will increase by 2.770982%. If X2 (Minimum Wage) increases by 1% then Y (Open Unemployment Rate) will increase by 0.001854%. If X3 (Economic Growth) increases by 1% then Y (Open Unemployment Rate) will increase by 0.028450%.

T test

Table 5. T Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.286051	1.408067	5.884700	0.0000
LOG(X1)	-2.770982	0.648648	-4.271933	0.0001
X2	-0.001854	0.001554	-1.193025	0.2371
X3	-0.028450	0.006493	-4.381631	0.0000

Source: Output Eviews 9



Based on the results of the t-statistic test in the table above, it shows that the average length of schooling and economic growth has a negative effect on the open unemployment rate in the Regency/City of Banten Province with a significant value of less than 0.05. Meanwhile, the minimum wage variable has no significant effect on the open unemployment rate in the district/city of Banten province with a significant value of more than 0.05.

F test

Table 6. F Test Results

R-squared	0.737908	Mean dependent var	2.198577
Adjusted R-squared	0.698789	S.D. dependent var	0.244854
S.E. of regression	0.134382	Akaike info criterion	-1.046223
Sum squared resid	1.209924	Schwarz criterion	-0.713866
Log likelihood	51.80269	Hannan-Quinn criter.	-0.913174
F-statistic	18.86350	Durbin-Watson stat	1.842978
Prob(F-statistic)	0.000000		

Source: Output Eviews 9

F-count probability value $0.000000 < 0.05$. Calculated with a 95% confidence level, $\alpha = 0.05$. This means that the three independent variables simultaneously affect the dependent variable. This shows that the test model is feasible to be used in this study.

Coefficient of Determination

R-squared value 0.737908. It means that the independent variable is able to explain the dependent variable by 73.79% and the remaining 26.21% is influenced by other factors.

DISCUSSION

The Effect of Average Length of Schooling on Open Unemployment Rate in Districts/Cities of Banten Province 2013-2022

Based on the test results according to table 4., it shows that there is a negative and significant relationship between the variable average length of schooling and the open unemployment rate. The results of the partial test (t test) between the variable average length of schooling and the open unemployment rate show a t value of -4.271933 and a probability value of 0.0001, lower than 0.05. A negative and significant relationship between the variable average length of schooling and the open unemployment rate is depicted with an increase in the average length of school (RLS) by 1 year resulting in a decrease in the Open Unemployment Rate (TPT) by 4.271933 percent. This illustrates that the need for education to be able to prepare oneself in the world of work must continue to be improved by the government to be able to provide quality human resources who are ready to work with the knowledge capacity that has long been practiced in formal education for 12 years, the evenness of this education can illustrate readiness society as a whole to be able to work in various fields according to the capabilities of each community.

Theoretically this is in line with the Human Capital Theory presented by Becker (1964), which explains the relationship between education and unemployment. Someone with a



higher level of education can be measured by the length of time in school, which can affect the skills and knowledge possessed by a person also increase, so that the higher the ability to work. The results of this study were strengthened by research conducted by Susi Husila with the research title "Analysis of the Effects of Inflation, Average Length of School, Economic Growth on Unemployment in South Sulawesi Province". In the results of research conducted by Husila, a coefficient value of -7.7197 was obtained and a significance value of $0.0002 < 0.05$ which can be explained that the average length of schooling has a negative and significant effect on the open unemployment rate (Husila, 2019). The research conducted is also in line with the results of research from (Priastiwi & Handayani, 2019), the education variable which is proxied in the average length of schooling has a significant negative effect on the open unemployment rate. That is, any increase in the average length of schooling will reduce the unemployment rate.

The Effect of Minimum Wage on Open Unemployment Rate in Districts/Cities of Banten Province 2013-2022

Based on the test results according to table 4., that there is a positive and not significant relationship between the wage variable minimum with an open poverty rate. The results of the partial test (t test) between the minimum wage variable and the open poverty level show a t value of -1.193025 and a probability value of 0.2371 , lower than 0.05 . The significant and negative relationship between the minimum wage variable and the open unemployment rate is explained by an increase in the minimum wage of 1 rupiah which will result in a decrease in the Open Unemployment Rate (TPT) of 1.193025 percent. The results of this study state that the minimum wage has a negative and insignificant effect on poverty. Due to the rigid nature of wages, the minimum wage that is imposed does not have an immediate effect in that year, but has an effect in the long term. In addition, the insignificant minimum wage may be due to the education level of the workers. The higher the level of education, the better the ability. However, in Banten the education level of the population is still low. According to BPS, the average length of community school is 8.68 years, or the equivalent of a grade 2 junior high school education level. This makes it difficult for companies to apply high wages to workers with low quality. In addition, the high population in Banten has resulted in an excess supply of labor.

Banten, which is an area with a large population, but the average education level is only junior high school graduates, causes the supply of labor to be constant at each wage level. This means that every worker is willing to get any wage as long as they have a permanent job. This may be why the minimum wage policy has no real effect on unemployment in Banten. Another factor that causes the minimum wage to have no effect on the open unemployment rate may also be due to the minimum wage that only applies to the formal sector. In the two sector model, namely formal and informal, minimum wages should be applied to both sectors. In Banten, the informal sector absorbs more workers than the formal sector. The results of this study were strengthened by research conducted by Deasy Dwi Ramiayu with the research title "Analysis of the Influence of Average Length of School, Minimum Wage, and Economic Growth on Open Unemployment Rates in East Java Districts/Cities". In the results of research conducted by Deasy Dwi Ramiayu, a coefficient value of -1.222426 was obtained and a significance value of $0.2235 > 0.05$ which can be



explained that the minimum wage has a negative and insignificant effect on the level of open unemployment (Ramiayu, 2013).

The Effect of Economic Growth on Open Unemployment Rate in Districts/Cities of Banten Province 2013-2022

Based on the test results according to table 4., it shows that there is a negative and significant relationship between the variables of economic growth and the open unemployment rate. The results of the partial test (t test) between the economic growth variable and the open unemployment rate show a t value of -4.381631 and a probability value of 0.0000 which is lower than 0.05. The negative and significant relationship between the variables of economic growth and the open unemployment rate is illustrated by an increase in economic growth of 1 rupiah which will result in a decrease in the Open Unemployment Rate (TPT) of 4.381631 percent. The results of this study indicate that increased economic growth can reduce unemployment rates in the districts/cities of Banten province. This illustrates that there has been a development in economic activity which is marked by an increase in the production of goods and services. So if the greater the demand, the more goods and services that will be realized. When there is an increase in production, it will increase the use of labor to produce the requested production output, with the use of labor in the economy, it can reduce the unemployment rate.

Theoretically this is in line with Okun's Law Theory. Arthur Okun (1962) found that there is a close relationship between the unemployment rate and real GNP, namely a negative relationship. High economic growth will lead to a decrease in the unemployment rate, and low economic growth will be followed by an increased unemployment rate. The results of this study are reinforced by research conducted by Deasy Dwi Ramiayu, with the research title "Analysis of the Influence of Average Length of School, Minimum Wage, and Economic Growth on Open Unemployment Rates in East Java Districts/Cities". the economic growth variable has a negative coefficient of -0.650947. While the significance value is 0.0000 (<0.05). Based on the regression results, the economic growth variable has significant results and shows a negative slope. This means that economic growth has a negative and significant effect on the open unemployment rate (Ramiayu, 2013). The research conducted is also in line with the results of research from (Arizal & Marwan, 2019), economic growth with the GRDP indicator has a negative and significant effect on the unemployment rate. That is, an increase in output/GRDP by 1% will cause unemployment to decrease by 1%, or when there is an increase in the unemployment rate by 1% it will cause a decrease in GRDP by 2%.

CONCLUSION

Based on the results of tests conducted using the-t test, it can be concluded that partially: 1. The average length of schooling has a negative and significant effect on Open Unemployment Rate in Districts/Cities of Banten Province. 2. The minimum wage has a negative and insignificant effect on Open Unemployment Rate in Districts/Cities of Banten Province. 3. The economic growth has a negative and significant effect on Open Unemployment Rate in Districts/Cities of Banten Province.



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