



The Effect of Education Variable on the Open Unemployment Rate

Anik Rahmawati^{1✉}, Phany Ineke Putri²

Development Economic Study Program, Economics Faculty, Universitas Negeri Semarang

Permalink/DOI: <https://doi.org/10.15294/efficient.v4i2.46128>

Received: December 2020 ; Accepted: March 2021 ; Published: June 2021

Abstract

This study aimed to determine and analyze the effect of literacy rate, government expenditure on education, Gross Enrollment Rate of Senior High School/equivalent, and the proportion of Senior High School workforce and above on Open Unemployment Rate. The type of data used was secondary data. In form of panel data (pooled data) which is a combination of cross section data from eight regencies/cities in Banten Province and time series data from 2010-2019. The analysis method used was panel data regression analysis. The best model chosen was the Fixed Effect Model (FEM). The results showed that the variable literacy rate did not have any significant and negative effect on TPT. The variable government expenditure on education had a significant and negative effect on TPT. The variable Gross Enrollment Rate of Senior High School/Equivalent had a significant and negative effect on TPT. The variable proportion of Senior High School workforce and above had a significant and negative effect on TPT

Keywords: *Open Unemployment Rate, Education, Government Expenditure*

Abstrak

Penelitian ini bertujuan untuk mengetahui dan menganalisis pengaruh angka melek huruf, pengeluaran pemerintah bidang pendidikan, Angka Partisipasi Kasar SMA/Sederajat, dan proporsi angkatan kerja SMA ke atas terhadap Tingkat Pengangguran Terbuka (TPT). Jenis data yang digunakan adalah data sekunder. Tipe data yang digunakan adalah data panel (pooled data), yang merupakan kombinasi data cross section delapan kabupaten/kota di Provinsi Banten dan data time series tahun 2010-2019. Metode analisis yang digunakan adalah analisis regresi data panel. Model terbaik yang terpilih adalah Fixed Effect Model (FEM). Hasil penelitian menunjukkan bahwa variabel angka melek huruf tidak berpengaruh signifikan dan negatif terhadap TPT. Variabel pengeluaran pemerintah bidang pendidikan berpengaruh signifikan dan negatif terhadap TPT. Variabel Angka Partisipasi Kasar SMA/Sederajat berpengaruh signifikan dan negatif terhadap TPT. Variabel proporsi angkatan kerja SMA ke atas berpengaruh signifikan dan negatif terhadap TPT.

Kata Kunci: *Tingkat Pengangguran Terbuka, Pendidikan, Pengeluaran Pemerintah*

How to Cite: Rahmawati, A., & Putri, P. (2021). The Effect of Education Variable on the Open Unemployment Rate. *Efficient: Indonesian Journal of Development Economics*, 4(2), 1160-1173. <https://doi.org/10.15294/efficient.v4i2.46128>

© 2021 Semarang State University. All rights reserved

✉ Correspondence Address :
Address: Gedung L2 Lantai 2 FE Unnes
Kampus Sekaran, Gunungpati, Semarang, 50229
E-mail : anikrahmawati12@gmail.com

INTRODUCTION

Economic development is a process that can lead to an increase in the per capita income of the population in the long run (Sari, 2013). Increasing per capita income will increase people's purchasing ability which can cause one's consumption to increase as well. Apart from consumption, income can be allocated for investment. Investments will provide benefits for someone in the long run. Consumption and investment are the building blocks of national income.

If consumption and investment increase, national income will also increase. This will achieve the expected economic development. Economic development aims to improve people's living standards so that people have wider choices in meeting their needs. Development in the economic sector is carried out to improve the welfare of the community. The purpose of this development is to overcome existing economic problems, including poverty, unemployment, and inequality in income distribution.

One way to build the economy is by creating wide employment opportunities so that people can get jobs and meet their daily needs. However, in reality, the number of job opportunities is not in line with the existing workforce. This is what causes economic problems, namely unemployment. Almost all both developed and developing countries face the problem of unemployment. The large number of people classified as the labor force but not in balance with the opportunity to work causes unemployment to rise.

According to Hartanto and Masjkuri (2017), high unemployment rates will have a negative impact on the country's economy. In

addition, unemployment affects individuals and society, including not optimal welfare which is marked by reduced productivity and income. This will cause other problems such as poverty, crime, and other social problems. Unemployment causes people's living standards to be low due to low income. This makes it difficult for people to meet their daily needs. Finally, people will live on the poverty line.

The Open Unemployment Rate (TPT) is an indicator that can be used to measure the level of labor supply that is not used or absorbed by the labor market (Statistics Indonesia, 2019). Indonesia has TPT which tended to decline from 2010 to 2019. This indicates that the government's efforts to reduce unemployment have paid off.

Table 1 (see appendix 1) shows that from 2010 to 2019 the TPT in Banten Province was the highest. This condition always occurred every year during the 2010-2019 period. The TPT in Banten Province was the highest among all provinces in all periods. This meant that in the period 2010 to 2019 Banten Province had the highest TPT in Indonesia six times. In 2019, the TPT in Banten Province was the lowest at 8,11%. Meanwhile, the highest TPT in Banten Province occurred in 2011, namely 13,74%.

Education is capital for someone to improve abilities and skills. These abilities and skills will make it easier for someone to find work because of his higher competitiveness (Suaidah and Cahyono, 2013). The education sector is an important sector for building a smart and quality society. The community can improve their abilities to be more competitive and get the opportunity to work more through education. Therefore, education has an important role in reducing unemployment.

The literacy rate is an important indicator to see the extent to which the population of an area is open to knowledge (Statistics Indonesia, 2020). The number of people who can read and write can be seen through the literacy rate. If residents can read and write, the population will be open to

knowledge so that they can absorb information well. The ability to read and write is obtained through education. If the literacy rate of an area is higher, the more evenly education will be felt by the people in that area. The following is a figure of literacy rates in Banten Province during 2010-2019 :

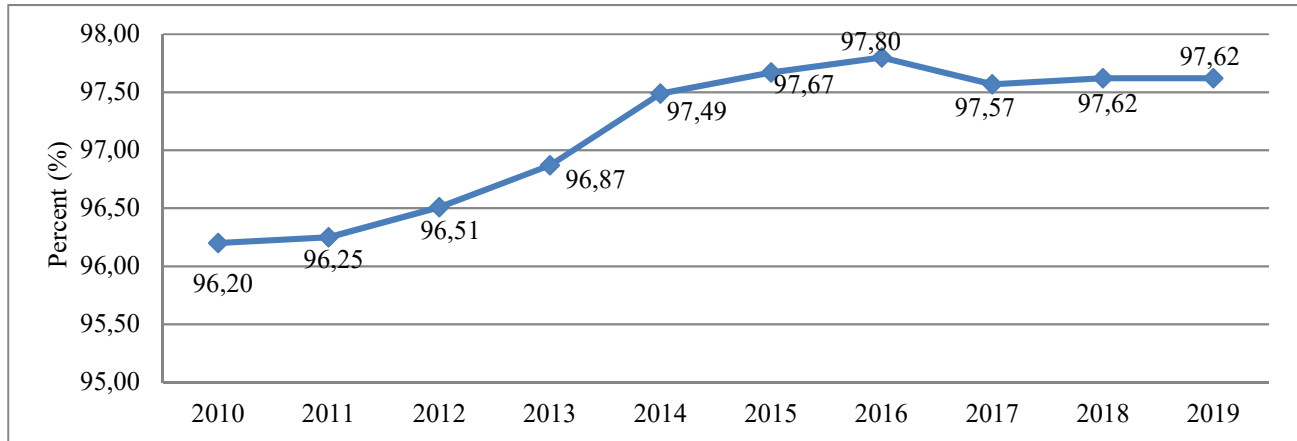


Figure 1. The Literacy Rate of Banten Province in 2010-2019

Source : Statistics Indonesia of Banten Province, various edition

Based on figure 1, it is known that literacy rate of Banten Province increased from 2010 to 2019. This proved that the government was always trying to make education accessible to all its residents. The literacy rate describes the percentage of the population who can read and write. This way can reveal the percentage of the population who received education and did not receive an education can be known.

If the literacy rate is getting closer to 100%, the education in a particular area is more evenly distributed. Education is an important thing because it can create a quality generation. If the community has a good education, the competencies they have will also follow so that they can meet the criteria expected by the world of work. In 2010, the literacy rate of Banten

Province was 96,20%. This meant that 96,20% of the population aged 15 years and over could read and write and as much as 3,80% were still illiterate. The literacy rate of Banten Province continued to increase until 2016. In 2016 the literacy rate of Banten Province reached 97,80%. In 2017, the literacy rate decreased to 97,57%, then increased again in 2018 to 97,62%, and was stagnant in 2019. The closer to 100%, the better the quality of education in the area.

The Provincial Government of Banten has showed that the quality of education has improved. This increase is supported by the fiscal policy taken by the government. One of the policies undertaken was the allocation of government spending for the education sector. Therefore, the role of allocating the Regional

Revenue and Expenditure Budget (APBD) for the fields of education, infrastructure, and health is very necessary to reduce poverty and unemployment rates (Mardiana, et al, 2017).

The government is seriously committed to building the education sector following the mandate of Article 31 paragraph four of the 1945 amendment result that the state

prioritizes the education budget of at least 20% of the State Revenue and Expenditure Budget (APBN) and Regional Revenue and Expenditure Budget (APBD) to meet the needs of the provision of national education. The following is a figure depicting the amount of realized APBD expenditure per function of Banten Province from 2010 to 2019.

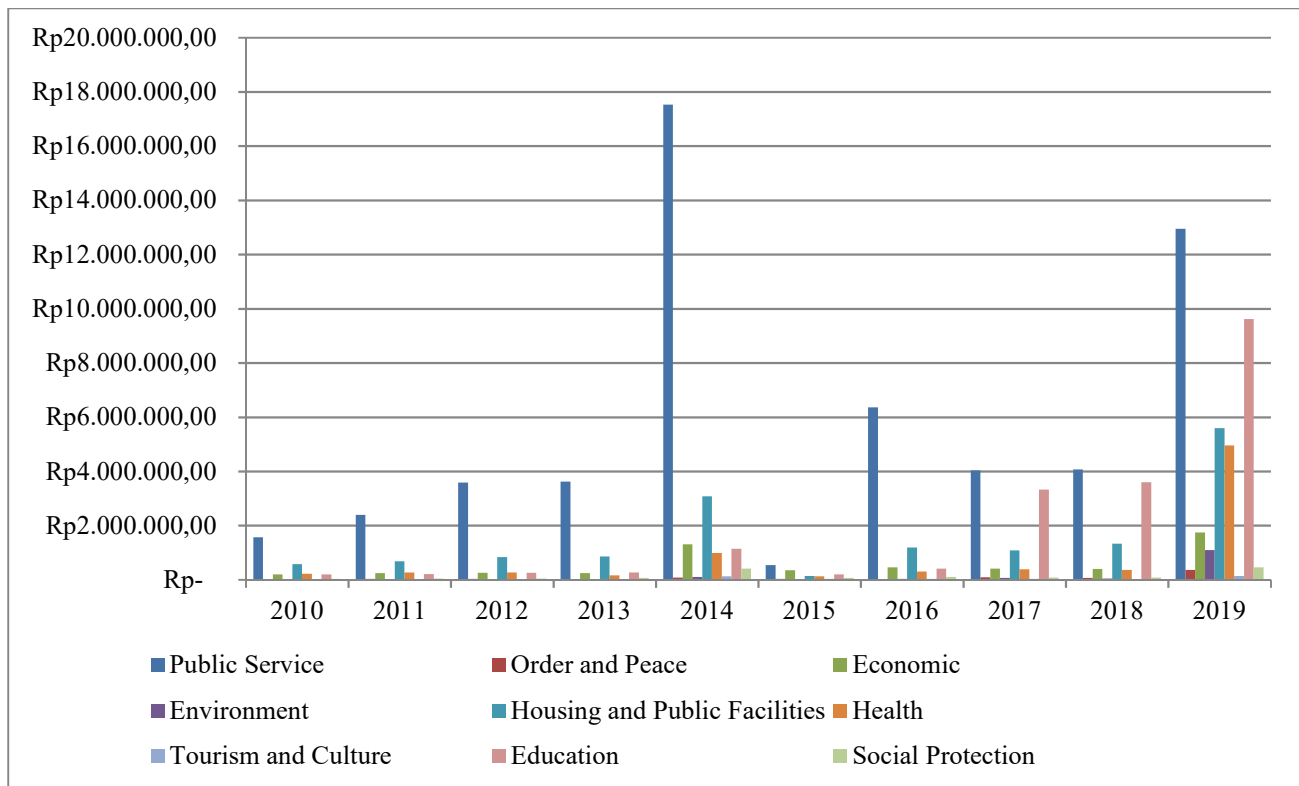


Figure 2. The Realization of APBD Expenditures for Each Sector in Banten Province in 2010-2019 (in Million IDR)

Source: Directorate General of Fiscal Balance and Directorate General of Treasury, various editions

From 2010 to 2019, the government expenditure on the education sector had a sizable share compared to other sectors. In 2010, government expenditure in the education sector amounted to IDR 196.481.000.000,00, which was ranked as the fourth largest government expenditure. In 2011, there was an increase in expenditure on education, namely to IDR

213.118.000.000,00 or in the fifth rank of the largest expenditure. The government expenditure on the education sector consistently increased until 2014.

In 2015, expenditure in the education sector decreased due to a decrease in the budget followed by a decrease in expenditure in all sectors. However, the education sector ranked

third with the largest expenditure compared to other sectors. In 2016, it began to increase again. The increase in spending in the education sector continued to increase until 2019.

In 2019, expenditure for the education sector was IDR 9.615.780.000.000,00. This expenditure was the second largest government expenditure after public service sector expenditure. According to the Ministry of Education and Culture (2017), there are several indicators to determine school participation in an area. These indicators are the School Participation Rate (APS), the Gross Enrollment

Rate (APK), and the Net Enrollment Rate (APM). Each indicator has a different size.

APK of Senior High School (SMA)/Equivalent is the percentage of the number of SMA/Equivalent students (regardless of the age of the student) compared to the number of people aged according to the age group entering the SMA/Equivalent level. The age group at the SMA/Equivalent level is 16-18 years old. The following can be seen in the figure of the development of the APK for SMA/Equivalent in Banten Province in 2010-2019 :

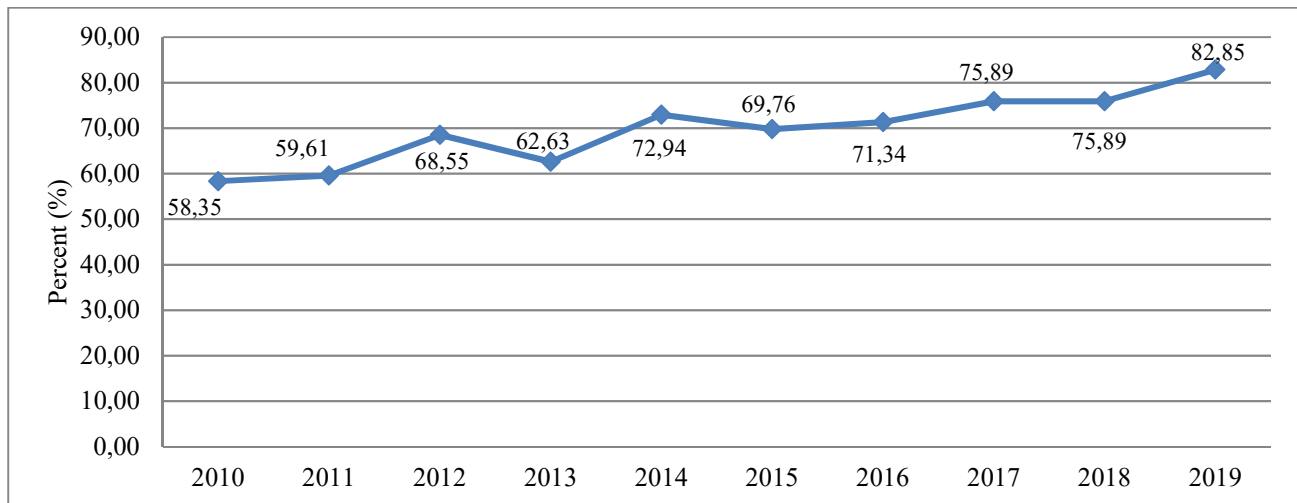


Figure 3. The Gross Enrollment Rate (APK) of Senior High School/Equivalent of Banten Province in 2010-2019

Source: Statistics indonesia of Banten Province, 2020

Figure 3 shows an illustration that the APK for SMA/Equivalent in Banten Province in 2010-2019 tended to increase. In 2010, the APK for SMA/Equivalent was 58,35%. This meant that the percentage of SMA/Equivalent students of various ages to the population aged 16-18 years was 58,35%. In 2011, the APK has increased to be 59,61%. In 2012, the APK increased quite high, namely to

become 68,55%. In 2013, the APK for SMA/Equivalent decreased to 62,63%. However, the government continued to strive to increase the absorption of students at the SMA/Equivalent level. The APK for SMA/Equivalent reached the highest figure in 2019, namely 82,85%. This showed a significant increase when compared to 2010 which only amounted to 58,35%.

Increasing APK of SMA/Equivalent is a good thing. This causes the educated workforce to increase in the future. Fitri and Junaidi (2016) state that people with higher education are considered to have high knowledge and abilities. This quality is seen from the education that has

been completed. Higher levels of education usually lead to higher job positions. The workforce for SMA and above has a sizable portion in Banten Province. The following is a figure of the proportion of Senior High School workforce and above in Banten Province :

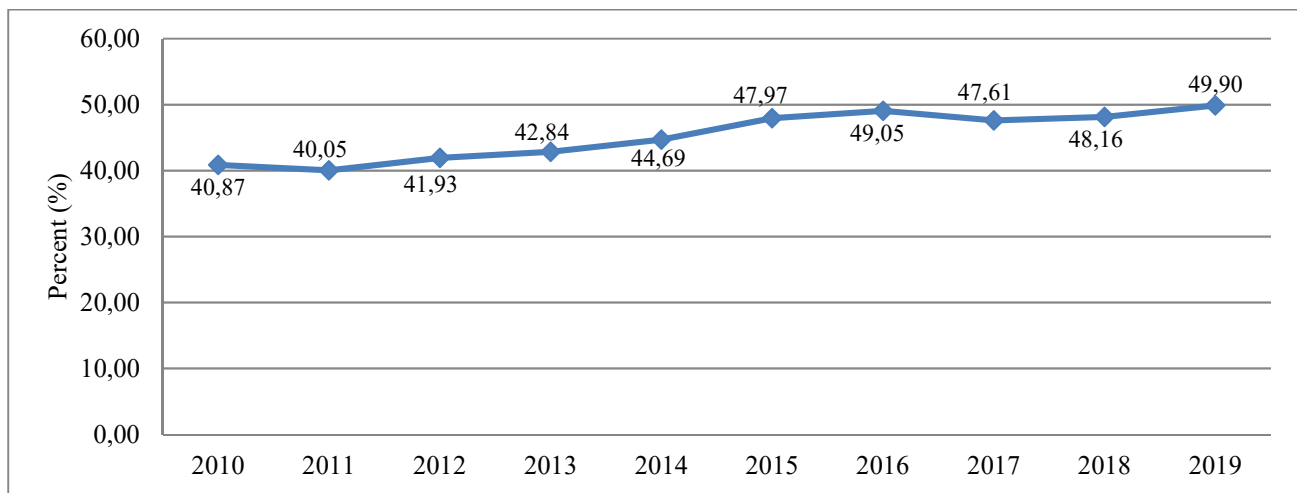


Figure 4. The Proportion of Senior High School Workforce and Above of Banten Province in 2010-2019

Source : Banten Province National Labor Force Survey, various edition

Based on figure 4, the proportion of the workforce who had high school education and above has increased. In 2010, the proportion of the workforce for SMA and above was 40,87%. This meant that 40,87% of the workforce in Banten Province in 2010 had the latest minimum of education and tertiary education. Subsequently, in 2011, the proportion of the workforce with the latest high school education and above decreased slightly to 40,05%.

In 2011, the proportion of the workforce for SMA and above was the lowest during 2010-2019 in Banten Province. Furthermore, in 2014-2016 the value of the proportion of the workforce of SMA and above always increased. In 2016, the proportion of the workforce who had the latest high school education and above was 49,05%.

Furthermore, in 2017 it decreased slightly to 47,61%. However, 2018 and 2019 managed to increase again. In 2019, the proportion of the workforce for SMA and above was 49,90% and was the highest figure during the 2010-2019 period.

Education is included in human capital which can improve the quality of human resources. Based on human capital theory, someone who has higher education will have higher productivity as well. This will have an effect on greater employment opportunities for a person. The quality of the workforce can be seen from the level of education. In 2019, the workforce who graduated from high school and above was 49,90%. Nearly 50% of the total workforce had a good education, namely

SMA/Equivalent and tertiary education. The current compulsory education program from the government is 12 years.

However, the people of Banten Province are aware of the importance of education and pursue higher education. The study was conducted to see the effect of literacy rates, government expenditure on education, Gross Enrollment Rate (APK) of SMA/Equivalent, and the proportion of Senior High School workforce and above on the Open Unemployment Rate (TPT) in Banten Province.

RESEARCH METHODS

This research was a descriptive quantitative research. Quantitative research is research that analyzes data in the form of numbers. Meanwhile, descriptive research according to Prawira (2018) is research that describes and explains the results of research in the form of numeric data. The type of data used was secondary data. It was in form of panel data (pooled data). Panel data are a combination of time series data and cross section data. The span of the period of the research was annual, namely 2010 to 2019.

Meanwhile, data between spaces or places were eight regencies/cities in Banten Province, namely South Tangerang City, Tangerang City, Serang City, Cilegon City, Tangerang Regency, Serang Regency, Pandeglang Regency, and Lebak Regency. The data were obtained from the official website of the national, provincial, and regional Statistics indonesia. Also, those were obtained from the official website of the Directorate General of Fiscal Balance and the Directorate General of Treasury, Ministry of Finance. The method of analysis of this research was multiple regression analysis. Since the type

of data used was panel data, so it is called multiple regression analysis of panel data. The mathematical model of the TPT function is :

$$TPT = \beta_0 + \beta_1AMHit + \beta_2PPENDit + \beta_3APKit + \beta_4PROPORSIit + \mu it.....(1)$$

Information :

- TPT : Variable Open Unemployment Rate (TPT) (Percent)
- β_0 : Parameters or constants
- β_1 : The coefficient of the variable literacy rate
- β_2 : The coefficient of the variable government expenditure on education
- β_3 : The coefficient of the variable Gross Enrollment Rate (APK) of SMA/Equivalent
- β_4 : The coefficient of the variable proportion of Senior High School workforce and above
- AMH : Variable literacy rate (Percent)
- PPEND : Variable government expenditure on education (IDR)
- APK : Variable Gross Enrollment Rate (APK) of SMA/Equivalent (Percent)
- PROPO-RTION : Variable proportion of Senior High School workforce and above (Percent)
- i : Eight regencies/cities in Banten Province
- t : Year (2010-2019)
- μ : Error

The process of processing data using panel data multiple regression analysis used EViews 9 software. Common Effect Model (CEM), Fixed

Effect Model (FEM), and Random Effect Model (REM) are the approaches commonly used to estimate panel data regression models. The determination of the most appropriate approach to estimate the panel data regression model generally use three kinds of tests, namely the Chow Test, Hausman Test, and Lagrange Multiplier Test. The test will produce the best approach that will be used to estimate panel data.

A multiple regression equation must fulfill classical assumptions to produce an equation that is BLUE (Best Linear Unbiased Estimator) or the regression equation is unbiased. There are four kinds of assumptions in the classical assumption test, namely normality, multicollinearity, heteroscedasticity, and autocorrelation. However, there were only two kinds of classical assumption tests to be carried out in this study, namely multicollinearity and heteroscedasticity. This is based on the opinion of Basuki and Prawoto (2016) that the panel data regression model only needs to be tested for multicollinearity and heteroscedasticity.

RESULTS AND DISCUSSION

The determination of the best approach in panel data regression analysis was carried out in three types of tests, namely Chow Test, Hausman Test, and Lagrange multiplier Test. First, the researchers performed Chow test to determine the best model between the Common Effect Model (CEM) and the Fixed Effect Model (FEM).

The Chow Test result showed that the cross-section probability value of Chi-square was 0,0000. This value was less than $\alpha = 0,05$ so that it rejected H_0 and accepted H_a . Here, the Fixed Effect Model was a model chosen in this test. Afterwards, the Hausman Test was run to

determine the best model between the Fixed Effect Model (FEM) and the Random Effect Model (REM).

Table 2. Chow Test Estimation Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	9.992125	(7,68)	0.0000
Cross-section Chi-square	56.587714	7	0.0000

Source : Output Using EViews 9

The Hausman Test results in table 3 above showed that the probability value of cross-section random was 0,0190. This value was less than $\alpha = 0,05$ so that the model chosen based on the Hausman Test was the Fixed Effect Model (FEM).

Table 3. Hausman Test Estimation Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	11.789725	4	0.0190

Source : Output Using EViews 9

Lagrange Multiplier Test is the final test to determine the best model in panel data regression analysis. This test is used to determine the best model between the Common Effect Model (CEM) and the Random Effect Model (REM). This test was not carried out in this study because the results of the Chow Test and the Hausman Test indicated that the selected model was the Fixed Effect Model (FEM).

Based on the results of the Chow Test and the Hausman Test, the best model chosen in this panel data regression analysis was the Fixed Effect Model (FEM). The Fixed Effect Model assumes that the equations of each individual

have different interceptions, but the regression coefficients are the same (Algifari, 2020). The panel data regression equation with the Fixed Effect Model approach is written as follows :

$$TPT = 83,86690 - 0,614087*AMHit - 1,49E-12*PPENDit - 0,070223*APKit - 0,190660*PROPORSlit + \mu it.....(2)$$

T-test is used to partially test the effect of the independent variable on the dependent variable. One-tail t-test is carried out by comparing the t-count value with the t-table value. If the t-count value < t-table value, it

means that partially the independent variable cannot significantly influence the dependent variable. Conversely, if the t-count value > t-table value, it means that partially the independent variable can significantly influence the dependent variable.

The t-count value is obtained from the EViews 9 output while the t-table value is obtained from the t-table. The way to get the t-table value is to know the degree of freedom (df). The df value obtained from $n - k$, was $80 - 5 = 75$, while the alpha or the level of significance used was 5% or 0,05.

Table 4. The Results of Panel Data Regression Fixed Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	83,86690	38.25968	2.192044	0.0318
AMH	-0.614087	0.405051	-1.516074	0.1341
PPEND	-1.49E-12	8.33E-13	-1.789504	0.0780
APK	-0.070223	0.032307	-2.173637	0.0332
PROPORTION	-0.190660	0.058637	-3.251533	0.0018

Source: Output Using EViews 9

Based on table 5, the t-test was done by comparing the t-count value with the t-table value. The independent variables that had a significant effect on the dependent variable of the Open Unemployment Rate (TPT) were partially government expenditure on education (PPEND), Gross Enrollment Rate (APK) of SMA/Equivalent, and the proportion of Senior High School workforce and above (PROPORTION). These were decided based on the value of $t\text{-count} > t\text{-table}$ value.

Meanwhile, the independent variable literacy rate (AMH) had no significant effect on the dependent variable Open Unemployment Rate (TPT) partially because the $t\text{-count value} <$

$t\text{-table}$ value. The coefficient of determination serves to determine the extent to which the ability of the independent variable to explain the dependent variable. The coefficient of determination used is Adjusted R^2 or the adjusted coefficient of determination.

The value is between zero and one. In this study, the adjusted R^2 value was 0,569771 or 56,9771%. This value reflected the ability of the independent variable in literacy rates, government expenditure on education, Gross Enrollment Rate (APK) of Senior High School/Equivalent, and the proportion of Senior High School workforce and above in explaining the dependent variable Open

Unemployment Rate (TPT) with the value of 56,9771. %, while the remaining 43,0229% was explained by other variables outside the model. The literacy rate gained a t-count value of -1,516074. Based on the results of the t-

test, the t-count value < t-table value, namely -1,516074 < -1,66543 respectively so that the literacy rate did not have a significant effect on TPT. Moreover, the literacy rate had a negative sign coefficient of -0,614087.

Table 5. Result of Partial Significance Test or t-Test

Variable	T-Count	T-Table	Results of t-Test
Literacy Rate	-1.516074	-1.66543	Not Significant
Government Expenditure on Education	-1.789504	-1.66543	Significant
Gross Enrollment Rate (APK) of SMA/Equivalent	-2.173637	-1.66543	Significant
Proportion of Senior High School Workforce and Above	-3.251533	-1.66543	Significant

Source : Output Using EViews 9 and Table t

The results of this study are different from research of Rizqi (2019) which states that the literacy rate of the poor aged 15-55 years has a significant and negative effect on TPT. The research results of Rizqi (2019) show that an increase in the literacy rate of the poor aged 15-55 years will reduce TPT in Central Java in 2018. Another different research result is from Hajji and Nugroho (2013). Their research found that literacy rates have a positive and significant effect on the number of TPT. In contrary, the researchers assume that the higher the education of the people of Central Java Province, the more high wages demand will be because educated people will wait for jobs that can pay the wages they want.

The results of this study are in line with the research of Hossain, et al. (2018) which revealed that the level of education does not have a significant effect or has a weak relationship with fresh graduates unemployment. The level of education in this study which was stated in literacy rate did not have a significant effect on TPT due to the high

literacy rate in the regencies/cities of Banten Province. The literacy rate in each regency/city of Banten Province also tended to increase. Only a few of the population were still illiterate. The population who were illiterate usually covers the old age group. If the literacy rate is high, the effect on TPT is insignificant because the literacy rate is almost maximal.

The negative coefficient is following statement of Adriani (2019) which states that education is one part of human capital that functions to increase knowledge and skills for someone. The knowledge and skills capital will increase one's productivity so that the job opportunities that will be obtained are greater. Greater work opportunities will provide a higher chance of getting a job so that unemployment can be reduced.

Government expenditure on education obtained a t-count value of -1,789504. This value was more than the t-table value, namely -1,66543 so the government expenditure on education had a significant effect on TPT. The coefficient of the variable government expenditure on

education showed a negative sign, namely $-1,49E-12$. This coefficient meant that if government expenditure on education increased by one IDR, the TPT would decrease by $1,49E-12$ or $0,0000000000149$ percent, assuming *ceteris paribus* or other factors were constant.

This result is different from a previous research conducted by Mardiana, et al. (2017) that government spending on education has a direct and insignificant effect. A research by Singh and Shastri (2020) states that government spending on education does not effectively affect educational attainment and unemployment rates. This study is in line with research conducted by Zulhanafi, et al. (2013) that government spending has a significant and negative effect on the unemployment rate.

Similarly, a research conducted by Muslim (2014) states that government spending has a negative coefficient and has a significant effect on TPT. Based on the results of the Muslim study (2014), an increase in government spending will increase national income and aggregate demand. The multiplier effect that will occur is the creation of jobs.

Government expenditure on education had a significant and negative effect because through large government expenditure on education, the education sector can be well developed. The large regency/city government expenditures on education have made basic education, consisting of Elementary School and Junior High School, Early Childhood Education, and non-formal education well developed so that the community can continue to the next higher level.

Another support is in the formation of educational affairs division between basic education as authority of the regency/city government, and secondary education as

authority of the provincial government (Ministry of Education and Culture, 2019). The division of educational affairs makes the education development process more focused and gets good results. If a person's education is higher, his productivity will also be greater. Therefore, the opportunity to get a job is also greater.

The coefficient showed by the variable government expenditure on education was negative, meaning that if there was an increase in government expenditure on education, TPT would decline. According to Mongan (2019), government spending that plays a role in developing human resources is government spending on education. Expenditures on education function to improve educational facilities and infrastructure so that the quality of education in an area will also increase.

Following the theory of human capital put forward by Todaro and Smith (2006), an increase in education will be able to increase one's productivity. Therefore, if the quality of education increases due to increased government spending on education, the unemployment rate will decrease due to an increase in one's productivity.

The t-test results showed that the t-count value of APK of SMA/Equivalent was more than the t-table value, with a value of $-2,173637 > -1,66543$. Therefore, the APK of SMA/Equivalent had a significant effect on TPT. By having the regression coefficient of $-0,070223$, whenever the APK for SMA/Equivalent increased by one percent, the TPT would decrease by $0,070223$ percent by assuming *ceteris paribus* or other factors remained constant.

According to Simanjuntak (1998), educated workers have higher productivity than uneducated workers. If a person has a higher

education and a lot of training is being followed, his abilities and skills will be even higher. This causes the productivity of someone with higher education will be better. The APK of SMA/Equivalent which tended to increase indicated that the number of educated people was increasing. The level of school participation at the SMA/Equivalent level was indicated by the APK value.

The increase in the APK value showed the success of the government program, namely the 12 years Compulsory Education. The program has a goal that everyone must get a minimum education of 12 years or SMA/Equivalent. The results of this study are in line with a previous research conducted by Tantri and Ratnasari (2016) that the variable APK of SMA/Equivalent has a significant effect on TPT. If the APK of SMA/Equivalent increases, the Indonesian TPT will decrease. The study results of Singh and Shastri (2020) show that educational attainment proxied by the Gross Enrollment Rate at the secondary education level has a negative effect on the unemployment rate in the long and short term.

Based on the partial significance test, the t-count value of the variable proportion of the SMA workforce and above was more than the t-table value, namely $-3,251533 > -1,66543$. It gained the coefficient value of $-0,190660$ which meant that if the proportion of the SMA workforce and above increased by one percent, the TPT would decrease by $0,190660$ percent by assuming *ceteris paribus* or other factors remained constant.

The results of this study are different from a research conducted by Puspadjuita (2018) which results a variable proportion of SMA workforce and above has a positive and significant effect on unemployment in

Indonesia. The positive effect is caused by population growth which is still quite high and is followed by the growth of the workforce who have graduated from high school and above. This causes employment opportunities to be unable to accommodate the existing workforce.

Also, the high school workforce and above do not want to work in jobs that are not linear to their education. According to Simanjuntak (1998), the educated labor market generally has higher work productivity than the uneducated so that the job opportunities of an educated person will be higher. According to the World Bank (2020), education is part of human capital that can increase one's knowledge. Human capital will create a skilled and competitive workforce in the global economy.

Herispon (2009) states that a factor causing unemployment is the mismatch between a person's skills and the skills needed by the world of work or industry. Someone who has higher education will have more skills. These skills will be the capital to get a job. Even with skills, someone can open their own business which can create jobs.

According to Pasay and Indrayanti (2012), The categories of sufficient or well-educated graduates are those with high school education, Diploma programs, and universities. Therefore, someone who has the last SMA/Equivalent and tertiary education is in the well-educated group. The community in Banten Province realized the importance of education. The proportion of the population who have studied up to tertiary institutions has increased. Their productivity would be higher because they have more knowledge and skills. The educated group will meet the qualifications of the world of work so that the opportunity to get a job is greater.

CONCLUSION

The results of research on the examination of the effect of literacy rates, government expenditure on education, Gross Enrollment Rate (APK) of Senior High School/Equivalent, and the proportion of Senior High School workforce and above on the Open Unemployment Rate (TPT) in Banten Province from 2010 to 2019 using the panel data regression method shows that the literacy rate has no significant effect with the coefficient or gains negative effect on the Open Unemployment Rate (TPT).

Government expenditure on education has a significant effect with a coefficient that is negative on the Open Unemployment Rate (TPT). The Gross Enrollment Rate (APK) of SMA/Equivalent has a significant effect with the coefficient by having a negative sign on the Open Unemployment Rate (TPT). The proportion of SMA workforce and above has a significant effect with the coefficient being negative on the Open Unemployment Rate (TPT).

The literacy rate of Banten Province is already high, meaning that almost all of the people of Banten Province can read and write. The thing that needs to be considered is the last level of education taken. The current government compulsory education for 12 years program needs to be improved again so that its implementation can be maximized and comprehensive in various regions.

REFERENCES

- Adriani, E. (2019). Pengukuran Modal Manusia (Suatu Studi Literatur). *J-MAS (Jurnal Manajemen Dan Sains)*, 4(1), 176. <https://doi.org/10.33087/jmas.v4i1.86>.
- Algifari. (2020). *Regresi Data Panel*. Yogyakarta: STIE YKPN Yogyakarta.
- Badan Pusat Statistik Provinsi Banten. *Angka Melek Huruf Menurut Kabupaten/Kota di Provinsi Banten, 2005-2013*.
- Badan Pusat Statistik Provinsi Banten. *Angka Partisipasi Kasar (APK) Menurut Kabupaten/Kota Provinsi Banten 2010-2019*.
- Badan Pusat Statistik Provinsi Banten. *Keadaan Ketenagakerjaan di Provinsi Banten (Survei Angkatan Kerja Nasional atau Sakernas) Tahun 2010-2019*.
- Badan Pusat Statistik Provinsi Banten. *Statistik Kesejahteraan Rakyat Provinsi Banten Tahun 2014-2019*.
- Badan Pusat Statistik. (2019). *Keadaan Ketenagakerjaan Indonesia Februari 2019*. Jakarta: Badan Pusat Statistik.
- Badan Pusat Statistik. (2020). *Angka Melek Huruf (AMH)*. <https://sirusa.bps.go.id/sirusa/index.php/indikator/313>. (Diakses pada 10 November 2020).
- Badan Pusat Statistik. *Tingkat Pengangguran Terbuka Menurut Provinsi, 1986-2020*.
- Basuki, A. T. & Prawoto, N. (2016). *Analisis Regresi dalam Penelitian Ekonomi & Bisnis (Dilengkapi Aplikasi SPSS dan EViews)*. Depok: RajaGrafindo Persada.
- Bidang Pembinaan Pelaksanaan Anggaran II. (2020). *Kajian Fiskal Regional Tahun 2019*. Serang: Kantor Wilayah Direktorat Jenderal Perbendaharaan Provinsi Banten.
- Direktorat Jenderal Perimbangan Keuangan. *Realisasi Belanja Per Fungsi Pada APBD 2010-2018*.
- Fitri, F. & Junaidi, J. (2016). *Pengaruh Pendidikan, Upah dan Kesempatan Kerja terhadap Pengangguran Terdidik di Provinsi Jambi*. *E-Jurnal EKonomi Sumberdaya Dan Lingkungan*, 5(1), 26-32.
- Hajji, M. S. & Nugroho, SBM. (2013). *Analisis PDRB, Inflasi, Upah Minimum Provinsi, dan Angka Melek Huruf terhadap Tingkat Pengangguran Terbuka di Provinsi Jawa Tengah*. *Diponegoro Journal of Economics*, 2(3), 1-10.
- Hartanto, T. B. & Masjkuri, S. U. (2017). *Analisis Pengaruh Jumlah Penduduk, Pendidikan, Upah Minimum Dan Produk Domestik Regional Bruto (PDRB) terhadap Jumlah Pengangguran di Kabupaten dan Kota Provinsi Jawa Timur Tahun 2010-2014*. *Jurnal Ilmu Ekonomi Terapan*, 2(1), 21-30. <https://doi.org/10.20473/jiet.v2i1.5502>.
- Herispon. (2009). *Buku Ajar Ekonomi Makro (Buku 1)*. Pekanbaru: ResearchGate.

- Hossain, M. I., Yagamaran, K. S. A., Afrin, T., Limon, N., Nasiruzzaman, M., & Karim, A. M. (2018). Factors Influencing Unemployment among Fresh Graduates: A Case Study in Klang Valley, Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 8(9), 1494-1507. <https://doi.org/10.6007/ijarbss/v8-i9/4859>.
- Kementerian Pendidikan dan Kebudayaan. (2017). *APK-APM*. <http://apkapm.data.kemdikbud.go.id>. (Diakses pada 10 November 2020).
- Kementerian Pendidikan dan Kebudayaan. (2019). *Pahami Ketentuan dalam Menyusun Anggaran Pendidikan dalam Simulasi Ini*. <https://npd.kemdikbud.go.id/simulasi/ketentuan.html>. (Diakses pada 3 Maret 2021)
- Mardiana, Militina, T., & Utary, A. R. (2018). Analisis Pengaruh Pengeluaran Pemerintah Daerah Sektor Pendidikan dan Kesehatan serta Infrastruktur terhadap Tingkat Pengangguran serta Tingkat Kemiskinan. *Inovasi*, 13(1), 50. <https://doi.org/10.29264/jin.v13i1.2437>.
- Mongan, J. J. S. (2019). *Pengaruh Pengeluaran Pemerintah Bidang Pendidikan dan Kesehatan terhadap Indeks Pembangunan Manusia di Indonesia*. *Indonesian Treasury Review Jurnal Perbendaharaan Keuangan Negara Dan Kebijakan Publik*, 4(2), 163-176. <https://doi.org/10.33105/itrev.v4i2.122>.
- Muslim, M. R. (2014). *Pengangguran Terbuka Dan Determinannya*. *Jurnal Ekonomi & Studi Pembangunan*, 15(2), 171-181. <https://doi.org/10.18196/jesp.15.2.1234>.
- Pasay, N. H. A. & Indrayanti, R. (2012). *Pengangguran, Lama Mencari Kerja, dan Reservation Wage Tenaga Kerja Terdidik*. *Jurnal Ekonomi dan Pembangunan Indonesia*, 12(2), 116-135.
- Prawira, S. (2018). *Pengaruh Pertumbuhan Ekonomi, Upah Minimum Provinsi, dan Tingkat Pendidikan terhadap Pengangguran Terbuka di Indonesia*. *Jurnal Ecogen*, 1(4), 162. <https://doi.org/10.24036/jmpe.viii.4735>.
- Puspadijuita, E. A. R. (2017). Factors that Influence the Rate of Unemployment in Indonesia. *International Journal of Economics and Finance*, 10(1), 140. <https://doi.org/10.5539/ijef.v10n1p140>.
- Rizqi, U. A. A. (2019). *Aplikasi Regresi Spasial untuk Menganalisis Tingkat Pengangguran Terbuka di Jawa Tengah Tahun 2018*. *JIEP*, 19(2), 139-148.
- Sari, N. R. F. (2016). *Pengaruh Variabel Ekonomi Makro terhadap Pengangguran Terdidik di Jawa Timur Tahun 2010-2014*. *Jurnal Ekonomi Pembangunan*, 14(01), 71-84.
- Setyawan, D. (2018). *Evaluasi Implementasi Kebijakan Program Indonesia Pintar Di SDN Magersari Kabupaten Rembang*. *Efficient: Indonesian Journal of Development Economics*, 1(3), 270-281. <https://doi.org/10.15294/efficient.v1i3.27872>
- Simanjuntak, P.J. (1998). *Pengantar Ekonomi Sumber Daya Manusia Edisi Kedua*. Jakarta: Lembaga Penerbit Fakultas Ekonomi Universitas Indonesia.
- Singh, D. & Shastri, S. (2020). Public Expenditure on Education, Educational Attainment and Unemployment Nexus in India: an Empirical Investigation. *International Journal of Social Economics*, 47(5), 663-674. <https://doi.org/10.1108/IJSE-06-2019-0396>.
- Siregar, H. & Sukwika, T. (2007). *Faktor-Faktor yang Mempengaruhi Kinerja Pasar Tenaga Kerja dan Implikasi Kebijakannya terhadap Sektor Pertanian di Kabupaten Bogor*. *SOCA: Socioeconomics of Agriculture and Agribusiness*, 7(3), 1-22.
- Suaidah, I. & Cahyono, H. (2013). *Pengaruh Tingkat Pendidikan terhadap Tingkat Pengangguran di Kabupaten Jombang*. *Jurnal Pendidikan Ekonomi, Volume 1 No. 3*
- Tantri, E. & Ratnasari, V. (2016). *Pengaruh Indikator Kependudukan terhadap Tingkat Pengangguran Terbuka di Indonesia dengan Pendekatan Regresi Panel*. *Jurnal Sains Dan Seni ITS*, 5(2), 6.
- The World Bank. (2020). *Tentang Proyek Modal Manusia*. <https://www.worldbank.org/in/publication/human-capital/brief/about-hcp>. (Diakses pada 10 November 2020).
- Todaro, M. P. & Smith, S. C. (2006). *Pembangunan Ekonomi Jilid 1 Edisi Kesembilan*. Jakarta: Penerbit Erlangga.
- Zulhanafi, Aimon, H., & Syofyan, E. (2013). *Analisis Faktor-Faktor Yang Mempengaruhi Produktivitas Dan Tingkat Pengangguran Di Indonesia*. *Jurnal Kajian Ekonomi*, 2(03), 7087.

APPENDIX

Appendix 1. The Open Unemployment Rate (TPT) of Provinces in Indonesia 2010-2019 (in Percent)

Province	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Aceh	8,37	9,00	9,06	10,12	9,02	9,93	7,57	6,57	6,36	6,20
North Sumatera	7,43	8,18	6,28	6,45	6,23	6,71	5,84	5,60	5,56	5,41
West Sumatera	6,95	8,02	6,65	7,02	6,50	6,89	5,09	5,58	5,55	5,33
Riau	8,72	6,09	4,37	5,48	6,56	7,83	7,43	6,22	6,20	5,97
Jambi	5,39	4,63	3,20	4,76	5,08	4,34	4,00	3,87	3,86	4,19
South Sumatera	6,65	6,60	5,66	4,84	4,96	6,07	4,31	4,39	4,23	4,48
Bengkulu	4,59	3,46	3,62	4,61	3,47	4,91	3,30	3,74	3,51	3,39
Lampung	5,57	6,38	5,20	5,69	4,79	5,14	4,62	4,33	4,06	4,03
Bangka Belitung Islands	5,63	3,86	3,43	3,65	5,14	6,29	2,60	3,78	3,65	3,62
Riau Islands	6,90	5,38	5,08	5,63	6,69	6,20	7,69	7,16	7,12	6,91
DKI Jakarta	11,05	11,69	9,67	8,63	8,47	7,23	6,12	7,14	6,24	6,22
West Java	10,33	9,96	9,08	9,16	8,45	8,72	8,89	8,22	8,17	7,99
Central Java	6,21	7,07	5,61	6,01	5,68	4,99	4,63	4,57	4,51	4,49
DI Yogyakarta	5,69	4,39	3,90	3,24	3,33	4,07	2,72	3,02	3,35	3,14
East Java	4,25	5,38	4,11	4,30	4,19	4,47	4,21	4,00	3,99	3,92
Banten	13,68	13,74	9,94	9,54	9,07	9,55	8,92	9,28	8,52	8,11
Bali	3,06	2,95	2,10	1,83	1,90	1,99	1,89	1,48	1,37	1,52
West Nusa Tenggara	5,29	5,25	5,23	5,30	5,75	5,69	3,94	3,32	3,72	3,42
East Nusa Tenggara	3,34	3,11	3,04	3,25	3,26	3,83	3,25	3,27	3,01	3,35
West Kalimantan	4,62	4,60	3,54	3,99	4,04	5,15	4,23	4,36	4,26	4,45
Central Kalimantan	4,14	3,54	3,14	3,00	3,24	4,54	4,82	4,23	4,01	4,10
South Kalimantan	5,25	6,29	5,19	3,66	3,80	4,92	5,45	4,77	4,50	4,31
East Kalimantan	10,10	11,43	9,02	7,95	7,38	7,50	7,95	6,91	6,60	6,09
North Kalimantan	-	-	-	8,59	6,47	5,68	5,23	5,54	5,22	4,40
North Sulawesi	9,61	10,10	7,98	6,79	7,54	9,03	6,18	7,18	6,86	6,25
Central Sulawesi	4,61	6,78	3,95	4,19	3,68	4,10	3,29	3,81	3,43	3,15
South Sulawesi	8,37	8,13	6,01	5,10	5,08	5,95	4,80	5,61	5,34	4,97
Southeast Sulawesi	4,61	4,69	4,14	4,38	4,43	5,55	2,72	3,30	3,26	3,59
Gorontalo	5,16	6,74	4,47	4,15	4,18	4,65	2,76	4,28	4,03	4,06
West Sulawesi	3,25	3,35	2,16	2,35	2,08	3,35	3,33	3,21	3,16	3,18
Maluku	9,97	10,81	7,71	9,91	10,51	9,93	7,05	9,29	7,27	7,08
North Maluku	6,03	5,34	4,82	3,80	5,29	6,05	4,01	5,33	4,77	4,97
West Papua	7,68	6,73	5,42	4,40	5,02	8,08	7,46	6,49	6,30	6,24
Papua	3,55	5,02	3,71	3,15	3,44	3,99	3,35	3,62	3,20	3,65
Indonesia	7,14	7,48	6,13	6,17	5,94	6,18	5,61	5,50	5,34	5,28

Source : Statistics Indonesia, 2020