

**THE EFFECT OF GROSS REGIONAL DOMESTIC
PRODUCT, MINIMUM WAGES RATE AND EDUCATION ON
EMPLOYMENT IN JAVA**

2011-2015

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ABSTRACT

Indonesia is an archipelago country which more than a thousand islands. One of the islands is Java. Java is a densely populated that give a massive contribution in Indonesia economy. Even Java donated big amount of number in Gross Regional Domestic Product, the number of unemployment in Java still remains high. This research has purpose to understand about the effect of gross domestic regional product, minimum wages rate and education to the employment in Java from 2011-2015. The data used in this research is secondary data from Central Bureau of Statistics in Indonesia. This research contain 6 provinces in Java namely Jakarta, West Java, Banten, Yogyakarta, Central Java and East Java. The data processed with Eviews 7.0 with panel data estimation. The result of this study indicates that GRDP and Education have positive and significant effect on employment, while minimum wages rate has negative impact even there is significant effect to the employment in Java.

Keywords: *Gross Regional Domestic Product, Minimum Wages Rate, Education, Employment.*

INTRODUCTION

Background of Study

Indonesia is the largest archipelago country in the world, because Indonesia has many islands from Sabang to Merauke with 33 Provinces included, but by 2012 become 34 since North Borneo was added. Indonesia also a country with rich of natural and human resources that are so potential to encourage Indonesia to be a success developing country.

According to Meier and Baldwin (1967), one of the characteristics of developing countries is the rapid population growth which is not accompanied by the improvement of facilities for a decent life. Indonesia is one of the developing countries having these characteristics as it often experiences rapid population growth

which is not accompanied by the improvements in its facilities such as infrastructure, educational facilities, health, employment and other supporting facilities.

One of islands in Indonesia that affected by population problem is Java. Compare to other island, Java has massive amount of population. This population problem will always led to employment problem as well. Even Java donate huge number in Indonesia economy, it's not reducing the number of unemployment.

Based on explanation above description of the unemployment problem, economic growth and wages rate should be considered because it will affect the economy of a country. Besides that education is also important, because the higher education achieved or the greater the skill of a person will give them huge opportunity in finding a job. So that, the researcher is interested and feel motivated to conduct a research entitled "**THE EFFECT OF GRDP, MINIMUM WAGES RATE AND EDUCATION ON EMPLOYMENT IN JAVA PERIODE OF 2011-2015**"

LITERATURE REVIEW

Economic Growth

Economic growth is the development of activities in the economy that causes goods and services produced in society increases and the welfare of society increases as well (Sadono Sukirno, 1999). Economic growth could be seen by the number of Gross Regional Domestic Product.

Gross Regional Domestic Product (GRDP)

According to the Central Bureau of Statistics (BPS), the gross regional domestic product is defined as the amount of added value generated by all units of production in an area over a given period or a sum of all final goods and services produced by all production units in the region in one certain period. GRDP can describe the ability of an area to manage its natural resources. Therefore, the amount of GRDP produced by each region depends on the potential of production factors in the area.

Minimum Wages Rate

The minimum wage is a minimum wage setted at minimum regional, regional sector and sub sectors. In this case the minimum wage is the basic wage and allowance. the minimum wage is determined by the consent of the wage council consisting of government, employers and unions. the aim of the minimum wage is to meet the minimum standard of living so as to raise the low-income population (Tjiptoherijanto, 1990).

Education

Education reflects the level of intelligence (quality) or the attainment of formal education of a country's population. The higher the graduate of a person's education, the higher the ability of one's work or productivity in work. Formal education is a technical requirement that is very influential on the achievement of employment opportunities.

Employment

Employment is the acceptance of employers to perform the duties as appropriate or a condition that describes the availability of work or employment to be filled by job seekers (Todaro 2003: 307). Employment absorption in general shows the amount of ability of a company in absorbing labor to produce a product. The ability to absorb labor is not the same magnitude between sectors one with other sectors.

The Relationship of GRDP on Employment

GRDP can affect the employment with the assumption if the value of GRDP increases, then the total value of output or sales in all units of the economy in an area will increase. The greater the output or sales made by the company, it will encourage the company to increase the workforce to increase production to pursue increased sales. it can directly increase employment.

The Relationship of Minimum Wages Rate on Employment

The changes of minimum wages rate could affect the employment. For the company, wages are the cost of production, so that entrepreneurs will minimize production costs, including wages to achieve optimal profit. Rising wage rates will increase the company's production costs, which will further increase the price per unit of goods produced. If prices rise, consumers will reduce consumption. consequently a lot of unsold goods, and producers are forced to reduce the amount of production. The decline in production targets, resulting in reduced labor required.

The Relationship of Education on Employment.

The relationship of education to employment is that the higher of education that achieved will give the person an opportunity to get a better job. Indeed, not all companies have high education standards in finding employees, but most companies are still have that requirements. Although not only highly educated, but at least the person has really good skills to be able competing in getting the dreamed job. This is because large companies usually have a high standard in choosing applicants to become employees. Not only is high education, but if the person has excellent skills then it is also very likely he will survive in the competition to find a job.

RESEARCH METHODOLOGY

The Type of Research

This type of research using quantitative data.

The Scope of Research

To focus on the research on the object to be studied, the author gives the scope of the research that conducted in Java. This study focuses on the fields of human resources, minimum wages rate and education in six provinces in Java which is Jakarta, West Java, Banten Yogyakarta, Central Java and Java.

Dependent Variable

The dependent variable is a variable that affected by independent variable. The dependent variable in this research is employment (Y).

Independent Variable

- Gross Regional Domestic Product (X1)
- Minimum Wages Rate (X2)
- Education (X3)

Type and Source of the Data

This study uses secondary data. The data on employment, minimum wage and GRDP are obtained from the publication of the Central Bureau of Statistics (BPS) of each province in Indonesia. The data used for this study includes data for five years from 2011 to 2015 while cross section data in this study is obtained from 6 Provinces in Java Island. The dependent variable in this research is labor absorption while the independent variable in this research is GRDP, minimum wages rate, and education.

Method of Data Analysis

Regression Analysis

Here is the estimation of equation model in this study:

$$EMP_{it} = \beta_0 + \beta_1 GRDP_{it} + \beta_2 PMW_{it} + \beta_3 EDU_{it} + e_{it}$$

Note :

Emp = Employment (people)

t = Research year of 2011-2015

i = Province

β_0 = Intercept

β_1, β_2 = Regression Coefficient of each variable

GRDP = Gross Regional Domestic Product

PMW = Provincial Minimum Wages

EDU = Education

e = Error

Classical Assumptions Test

In this study, we will use multicollinearity test, heteroscedasticity test, normality test and autocorrelation.

Normality Test

Normality test is used to test whether in a regression model, dependent variable, independent variable, or both have a normal distribution or not. In the EViews program, normality testing is performed by the Jarque-Bera test. The Jarque-Bera test has a chi square value with two free degrees. If the jarque-bera test results are greater than $\alpha = 5\%$, then the null hypothesis (H_0) is accepted which means the data is normally distributed. If the test result is smaller than the chi square value at $\alpha = 5\%$, then the null hypothesis is rejected which means it is not normally distributed.

Multicollinearity Test

Multicollinearity test is a test used to see the correlation between each independent variable. One method that can be used to determine the presence or absence of multicollinearity can be seen from the correlation value between two independent variables. If the correlation value is less than 0.8 then the independent variable does not have multicollinearity problem, and vice versa.

Heteroscedasticity Test

The basis of decision making of heteroscedasticity test through Glejser test are:

1. If probability of Chi-Square value $< \alpha = 0.05$, there has been heteroscedasticity.
2. If probability of Chi-Square value $> \alpha = 0.05$, it means no heteroscedasticity occurs.

Autocorrelation

Autocorrelation is the correlation between a series of observation members sorted by time series. According to Gujarati (2006: 37), the most popular test for detecting autocorrelation is the Durbin-Watson statistical test. Decision-making on this assumption requires two auxiliary values obtained from the Durbin-Watson table, dL and dU, with K = the number of independent variables and n = sample size. Testing is done by looking at the value of Durbin-Watson.

Hypothesis Test

Partial Regression Test (t test)

Partial regression test is the test of partial regression relationship, in order to determine whether there is partial significant influence between the dependent variable with the independent variable in the study.

Simultaneous test (F Test)

F test is the testing of regression relationship simultaneously or synchronously between the independent variables on the dependent variable.

Multiple Determination Coefficient Test (R^2)

Multiple Determination Coefficient Test (R^2) could be used to determine the amount of contributions of independent variables (X_1 , X_2 , and X_3) on the dependent variable (Y).

RESULT AND DISCUSSION

Regression Estimation Result

The data related to this research has been processed by a software namely Eviews 7.0. The data processed are consisting of dependent and independent variable, such as GRDP (X_1), Minimum Wages Rate (X_2), and Education (X_3). The regression estimation result can be seen as follows:

Table 1

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8469598.	664490.3	12.74601	0.0000
GRDP	2541.480	1212.914	2.095351	0.0484
PMW	-0.425326	0.253463	-1.678060	0.0108
EDU	174.7939	84.68656	2.064010	0.0056
R-squared	0.999456			
Adjusted R-squared	0.999249			
F-statistic	4824.389			
Prob(F-statistic)	0.000000			
Obs	30			

Source: Primary Data, 2017. Processed

Multiple linear regression analysis is used to know the relationship and how much influence of independent variables to dependent variable in ceramics industry. Based on table above, that result can be formulated a multiple linear regression equation, such:

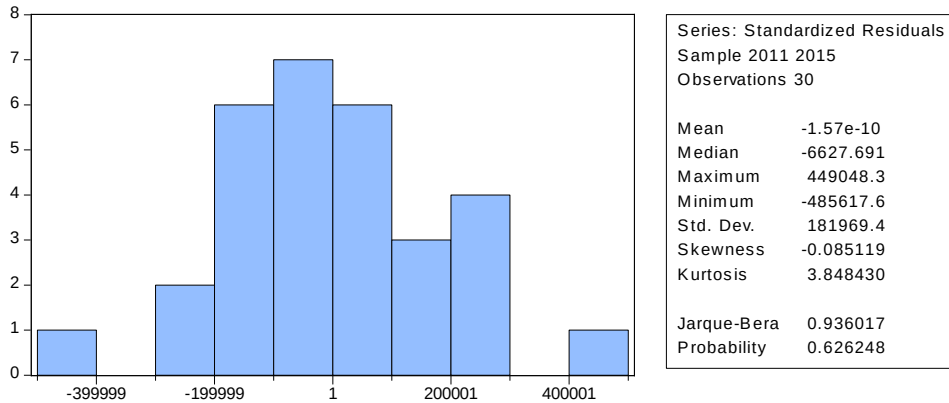
$$EMP = 8469598.0 + 2541.480GRDP - 0.0425326PMW + 174.7939EDU$$

From the results of the above equation, it shows that the effect of PRDB on labor absorption is 2541,480 and significant. This means that any increase in PRDB of 1000 rupiah will cause an increase in employment of 2541 people. The effect of provincial minimum wage on labor absorption is -0.0425326 and significant. This means that every minimum wage increase of 10,000 rupiah will cause a decline in employment of 4253 inhabitants. The effect of education on

labor absorption is 174.7939 and significant. This means that every 1% increase in education growth will lead to an increase in employment of 175 people.

Normality Test

Figure 1



Source: Primary Data, 2017. Processed

Based on figure 1 it is known that probability value is 0.626248. Because the value of prob. $0.626248 > 0.05$ then the data is normally distributed. So it can be concluded that the normality distribution assumptions in the model are met.

Multicollinearity Test

Table 2

	GRDP	PMW	EDU
GRDP	1.000000	0.344486	0.605350
PMW	0.344486	1.000000	-0.385195
EDU	0.605350	-0.385195	1.000000

Source: Primary Data, 2017. Processed

From table 2 it is known that the correlation value between the independent variables is smaller than 0.8 ($r < 0.8$) which means the model does not contain multicollinearity problem or assumption does not occur multicollinearity in the model is met.

Heteroscedasticity Test

Table 3. Glejser Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.001354	155143.7	-8.72E-09	1.0000
GRDP	-7.00E-06	155.2078	-4.51E-08	1.0000
PMW	-3.72E-09	0.121627	-3.06E-08	1.0000
EDU	1.45E-06	11.85503	1.22E-07	1.0000

Source: The result of processed reviews 7

Based on table 9, the probability of each independent variable is not significant (p value > 0.05). This indicates that the model is homocedastic or the assumption does not contain heterokedastis fulfilled.

Autocorrelation Test

Table 4. The Result of Autocorellation

R-squared	0.999456	Mean of dependent var	11639419
Adjusted R-squared	0.999249	S.D. dependent var	7803206.
S.E. of regression	213839.4	Akaike info criterion	27.62716
Sum squared resid	9.60E+11	Schwarz criterion	28.04752
Log likelihood	-405.4075	Hannan-Quinn criter.	27.76164
F-statistic	4824.389	Durbin-Watson stat	2.266097
Prob(F-statistic)	0.000000		

Source: The result of reviews 7

Based on table 8 it is known that the value of Durbin Watson is 0.2636485. Since the value of d_U (1.6498) $< d$ (2.266097) $< 4 - d_U$ (2.3502) then the regression model does not contain autocorrelation or it is assumed that no autocorrelation is met.

Result of Hypothesis Testing

Partial Regression Test (t Test)

Table 5

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8469598.	664490.3	12.74601	0.0000
GRDP	2541.480	1212.914	2.095351	0.0484
PMW	-0.425326	0.253463	-1.678060	0.0108
EDU	174.7939	84.68656	2.064010	0.0056

Based on table 4, the following results are:

- GRDP has probability value of 0.0484. It shows that the GRDP variable has a positive effect on labor absorption ($\alpha = 0.05$). Based on the proposed hypothesis, H_0 is rejected (H_a is accepted) which means that the GRDP statistically has a positive effect on the absorption of labor.
- Minimum wages rate variable estimation has a probability value of 0.0108. This shows that the provincial minimum wage variable has a positive effect on labor absorption ($\alpha = 0.05$). Based on the proposed hypothesis, H_0 is rejected (H_a is accepted) which means that the minimum wages rate statistically has positive effect on the absorption of labor..
- Education variable estimation has a probability value of 0.0108. It shows that educational variable has positive effect on labor absorption ($\alpha = 0.05$). Based on the proposed hypothesis, H_0 is rejected (H_a is accepted) which means that the statistically education has positive effect on the absorption of labor.

Simultaneous Test (F Test)

Table 6

R-squared	0.999456	Mean of dependent var	11639419
Adjusted R-squared	0.999249	S.D. dependent var	7803206.
S.E. of regression	213839.4	Akaike info criterion	27.62716
Sum squared resid	9.60E+11	Schwarz criterion	28.04752
Log likelihood	-405.4075	Hannan-Quinn criter.	27.76164
F-statistic	4824.389	Durbin-Watson stat	2.266097
Prob(F-statistic)	0.000000		

Source: Primary Data, 2017. Processed

Based on the estimation results in table 9, it shows that the value of Prob (F-statistic) of 0.00000. The significance value of $0.00000 < 0.05$ indicates that simultaneously the independent variables affect the absorption of labor ($\alpha = 0.05$). Based on the proposed hypothesis H_0 is rejected (H_a is accepted) which means statistically all independent variables simultaneously affect the absorption of labor.

Multiple Determination Coefficient Test (R^2)

Based on the value of determination coefficient (R^2) of 0.999456. This value indicates that the ability of GRDP variable, provincial minimum wage and education are able to explain variation of labor absorption variable that reaches 99.99%, while the remaining 0.01% is explained by other variables outside the variables used in this research.

Research Implications

The Effect of GRDP (X_1) on Employment

From the estimation results in table 9, it shows that the regression coefficient of GRDP variables have a positive and significant effect on employment in Java. It is proven by the regression result in table 9 showed coefficient value which is equal to 2541.480 with significance value equal to 0,0484. Therefore, the result of this research is in accordance with the initial hypothesis stating that the growth of GRDP has a positive effect on labor absorption.

The findings of this study are consistent with the early theory stating that economic growth is the output of economic activity. According to Keynesian theory in Boediono (1998), it is mentioned that the labor market follows what is happening in the goods market. With the increase in demand for goods / services (outputs) which is offset by the strong purchasing power of the people, it will result in increased production capacity of society which means the addition of the number of workforce (input). Then the demand for goods / services in an economy affects the level of output generated so it also affects the input used (labor).

In line with the production theory, it is stated that the input demand will occur when there is output demand. Demand for goods / services is behind the

company / industry to produce. To increase production it is necessary to have additional input (labor) to increase profits because each company / industry will seek profit as much as possible by seeing every opportunity entering the market. Moreover, the results of this study are also supported by a research from Nindya Eka Sobita and I Wayan Suparta (2014) which concluded that economic growth significantly and positively influences GRDP of Lampung Province.

The Effect of Minimum Wages Rate (X_2) on Employment

Based on regression output results, the provincial minimum wage variable has a negative and significant effect on labor absorption in Java Island with the value of provincial minimum wage coefficient of -0.425326 and significance value of 0.0108. The regression results show that the phenomenon that occurs in Java Island is in accordance with the hypothesis. It is also in line with the labor demand theory which states that when the minimum wage level of labor decreases there will be an increase in the demand for labor if it is assumed to increase the number of demand for goods / services by consumers (derived demand), and vice versa. Wages from the producer side are costs that must be paid to pay for the services of the workers. But if the cost incurred is not proportional to the productivity then it will cause the employer to reduce the amount of workforce because the wage entrepreneur is a burden.

The Effect of Education (X_3) on Employment

The output of educational regression in the study states that education has a positive and significant effect on labor absorption with coefficient value of 174.7939 and significant value of 0.0056. In line with the theory of human capital which in theory it is stated that through formal education then one can increase income. From the theory, it is known that education is one important factor in the development of human resources. This research is in line with research by Wijaya et al (2014), where education variables have a positive and significant effect on the absorption of manpower in Riau Province.

Education can be interpreted as an investment in the field of human resources. In this case, the sacrifice is in the amount of funds spent and the opportunity to earn an income during education, earned in return is a higher level of income as it gains knowledge from the education. Education is not only to gain knowledge but also to increase its income by improving education. Each additional one year of school on the one hand will improve the work ability and income level of a person, but on the other hand delay the receipt of income for one year following the school (Simanjutak, 1985).

From the theory above it can be said that the higher level of education one will increase the skills and knowledge to increase the level of productivity, which level of productivity will affect the conditions of demand for labor itself. So a person with low productivity will be subject to termination of employment (layoffs) with the imposition of layoffs will increase the number of unemployed. According to Todaro (2003), things that affect the level of productivity is the human capital itself which includes education and health. Both are fundamental for shaping the broader human capabilities that enter the core of development meaning.

CONCLUSION AND SUGGESTION

Conclusions

1. Gross Regional Domestic Product (GRDP) has a positive and significant influence on employment in Java Island in 2011-2015. This is shown from the value of regression coefficient of GDP which is 2541.480 with probability value of 0.0484. The regression coefficient of GRDP level variable is 2541,480 which shows that every 1% increase of GRDP will tend to be followed by the increase of labor absorption for about 2541 population.
2. Provincial minimum wage has a negative and significant influence on employment in Java Island in 2011-2015. This is shown from the regression coefficient value of the provincial minimum wage variable of -0.425326 with probability value of 0.0108. The provincial minimum wage regression coefficient is -0.425326 which also shows that any increase of 1000 rupiah provincial minimum wage will tend to be followed by a decrease in employment of 4253 population.
3. Education has a positive and significant influence on employment in Java Island in 2011-2015. It is shown from regression coefficient value of education variable for 174.7939 with probability value of 0.0056. The regression coefficient of education level is 174.7939 which also shows that every 1% increase of education level will tend to be followed by increase of labor absorption for 174 people.
4. Gross Regional Domestic Product (GDP), provincial minimum wage, and education have a positive and significant influence simultaneously on employment in Java Island in 2011-2015. This is shown from the value of F arithmetic which is equal to 4824.389 with probability value of 0.0000000.

Suggestion

- 1) Local governments increase the quality of education in Indonesia. The higher quality of people can get, the higher of welfare that will happen to the society.
- 2) Local governments should encourage and spur an increase in gross regional domestic product in every sector of the economy so that the absorption of labor increases.
- 3) Local governments should encourage investment in labor intensive sectors and be more selective in granting permits to owners of capital related to projects to be realized for the purpose of absorbing more labor.

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