



## ANALYSIS OF ECONOMIC GROWTH AND EMPLOYMENT IN CENTRAL JAVA PROVINCE PERIODE 2019-2022

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### Abstract

Looking at the current conditions in Central Java, both in the form of potential and opportunities that can be created, especially at the district/city level in the ability to absorb labor. The author of this study aims to determine the potential for labor absorption at the district/city level in Central Java Province and the relationship between economic growth and absorption of labor in Central Java Province.

This study examines the impact of Gross Regional Domestic Product and District/City Minimum Wage on Indonesia's Total Labour Force from 2019 to 2022. This study utilizes the effects of Gross Regional Domestic Product and District/City Minimum Wage as independent variables. At the same time, the dependent variable is the Total Labor Force. The data analysis method uses descriptive quantitative with 35 sample observations. The Gross Regional Domestic Product outcomes have a negative and insignificant effect, and the District / City Minimum Wage results also have a negative and little impact.

**Keywords:** Gross Regional Domestic Product, District/City Minimum Wage, and Total Labor Force.

### INTRODUCTION

Low wages, high unemployment rates, and Indonesia's rapidly growing population are the primary and most fundamental challenges facing the country's labor force. It is because the rise in the number of people entering the labor force is significantly higher than the employment growth that can be provided each year. A region can be developed if it is supported in terms of high community knowledge and adequate natural resources managed by human resources that have great potential to achieve the progress of regional development. One indication is the lack of unemployment in the region; if unemployment can be suppressed in such a way, the area can utilize its human resources to enter into its economic sectors to increase regional development. Based on BPS data, economic growth in the Central Java region fluctuates yearly; the most dominating sector is the processing industry sector; this is more due to the contribution of SMEs to employment in Central Java Province, around 96% (source: bappeda jateng). The approach to measuring unemployment is usually made through two indicators: the open unemployment rate (TPT) and the underemployment rate (TSP). The limited work options and sectoral absorption capacity provide a tough choice for workers by choosing to work improperly with low working hours or continue to look for work as desired; in other words, they are still unemployed.

One of the indicators to see the success of economic development is the unemployment rate. Unemployment is a person who has been classified in the labor force and is actively looking for work at a certain wage level but cannot get the desired job (Sukirno, 2006).

Looking at the current conditions in Central Java, both in the form of potential and opportunities that can be created, especially at the district/city level in the ability to absorb labor. The author of this study aims to determine the potential for labor absorption at the district/city level in Central Java Province and the relationship between economic growth and absorption of labor in Central Java Province.

## LITERATURE REVIEW

Labor force The increase in population will mainly produce a large labor force. This large labor force is expected to spur increased economic activity, which in turn can improve welfare (Anggoro and Soesatyo, 2015).

To improve workers' welfare and encourage workers' participation in increasing production, it is necessary to provide adequate wages (Aruan and Sriyono, 2016). According to Kaufman and Hotchkiss (cited from Prawira, 2018), there is a relationship between wages and unemployment where the higher the salary set by the government will decrease the number of people working. If the pay set in a region is higher, it will result in increased unemployment.

GRDP is used to determine economic development in a region both at current prices and at constant prices. According to Amrullah et al. (2019), if there is an increase in GRDP, it means that there has been an increase in the production of goods and services which results in an increase in production factors, one of which is an increase in labor demand, thereby reducing the unemployment rate.

Many researchers have conducted previous research on industrial sector labor absorption. Greer, Castrejon & Lee (2014) examined the relationship between minimum wage and the unemployment rate using a simple regression analysis method. This study used data from countries in the United States from 2002 to 2012. The results showed that the minimum wage significantly impacts unemployment when the economy is unstable, namely during recessions and post-recessions, that the minimum wage increases. Greece & Mursinto (2014) examined economic growth, employment, and social welfare in the district/city of South Kalimantan using the path analysis method. The results showed that economic growth significantly affected work, and occupation affected community welfare. Tambunsaribu (2013) examined the influence of labor productivity, real wages, and economic growth in the labor market of Central Java Province. The analysis technique used was multiple regression. This research shows that labor productivity hurts labor absorption, and real wages and economic growth positively affect labor absorption.

The variables used in this study

Y : Total Labor Force

X<sub>1</sub> : GRDP (Gross Regional Domestic Product)

X<sub>2</sub> : UMK (Regency/City Minimum Wage)

## METHOD

This research uses quantitative methods. As according to Sugiyono (2017: 23) defines quantitative methods as research methods that have a foundation in the philosophy of positivism, which is used to research specific populations or samples, data collection using research instruments, quantitative/statistical data analysis, which aims to describe and test predetermined hypotheses. The data taken is secondary data from the Central Statistics Agency (BPS) for 2020-2022; the variables used in this study are the total labor force as the dependent variable (Y), the independent variables (X) include GRDP (Gross Regional Domestic Product) ( $X_1$ ) and MSE (Regency / City Minimum Wage).

In this study, the estimated panel data regression analysis model is

$$Y = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \epsilon_{it}$$

Keterangan

$Y$  : Total Labor Force

$\beta_0$  : Constant

$\beta_1, \beta_2$  : Regression Coefficient

$X_1$  : GRDP (Gross Regional Domestic Product)

$X_2$  : UMK (Regency/City Minimum Wage)

$\epsilon_{it}$  : Error

## Classical Assumption Test

### Classic Test

The classic assumption test consists of a multicollinearity test and a heteroscedasticity test, where the multicollinearity test in this study aims to test whether the regression model forms a high or perfect correlation of independent variables. If a high correlation relationship is found between the independent variables, it can be stated that the study has multicollinear symptoms. A good regression model should not correlate with the independent variables. If the evidence proves that multicollinearity occurs or exists, one of the independents should be removed from the model, then the regression modeling should be repeated. The way to detect symptoms of multicollinearity can be seen from the Variance Inflation Factor (VIF) and Tolerance amount. A multicollinearity-free regression model has a guideline with a tolerance number close to 1. The VIF limit is 10; if the value is below 10, it can be concluded that there is no multicollinearity symptoms Gujarati, (2012: 432).

### Multicollinearity Test

The multicollinearity test tests whether a research regression model correlates with independent variables (free). A good regression model is one in which there is no correlation between the independent variables and is free from multicollinearity symptoms. Knowing whether or not there are symptoms of multicollinearity is by looking at the magnitude of the VIF (Variance Inflation Factor)

value and the Tolerance value. Tolerance measures the variability of selected variables that are not explained by other independent variables. The value used to indicate the presence of multicollinearity symptoms is the VIF value  $< 10.00$  and the Tolerance value  $> 0.10$  (Ghozali, 2018: 107).

### Heteroscedasticity Test

This Heteroscedasticity test aims to test the regression model to determine whether there is an inequality of variance from the residuals of one observation to another. The residual variant of a word to another comment is the same, called homoscedasticity, and the residual variant of a statement to another observation is different; it is called heteroscedasticity. Ghozali, (2011).

In this research, the measurement of heteroscedasticity uses the Breusch-Pagan-Godfrey test, with the following test steps:

$H_0$ : The model does not have heteroscedasticity

$H_1$ : The model has heteroscedasticity

If the probability of  $Obs^*R > 0.05$  then significant,  $H_0$  is accepted

If the probability of  $Obs^*R < 0.05$ , then it is insignificant, and  $H_0$  is rejected.

## RESULTS AND DISCUSSION

### Best Model Selection Test

#### Chow Test

Chow Test is a test to choose whether the model is the standard or fixed effect. This test is conducted with the following hypothesis:

$H_0$ : Common effect model

$H_1$ : Fixed effect model

The basis for rejecting the null hypothesis is to use the calculated Chow statistic (F statistic), which will follow the F statistical distribution with n-1 degrees of freedom (df) for the numerator. If the estimated F value is greater than the F table, then  $H_0$  is rejected, so the panel data regression technique with a fixed effect is better than the typical effect.

Source	SS	df	MS	Number of obs	=	105
				F(2, 102)	=	8.43
Model	1.4223e+14	2	7.1117e+13	Prob > F	=	0.0004
Residual	8.6070e+14	102	8.4382e+12	R-squared	=	0.1418
				Adj R-squared	=	0.1250
Total	1.0029e+15	104	9.6436e+12	Root MSE	=	2.9e+06
Y_TAK	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
X1_PDRB	.0385223	.0103061	3.74	0.000	.0180802	.0589644
X2_UMK	-1.939189	1.724953	-1.12	0.264	-5.360626	1.482247
_cons	3277180	3116638	1.05	0.296	-2904657	9459017

Figure 1 Chow Test Results

The figure above shows the results of the redundant fixed effect or likelihood ratio for this model has an F probability value of 0.0000, smaller than alpha 0.05, so the appropriate model from these results is fixed effects.

### Hausman Test

Hausman Test is a statistical test as a basis for consideration in choosing the best model between fixed effect or random effect models. This test is carried out with the following hypothesis:

H<sub>0</sub>: Random effect model

H<sub>1</sub>: Fixed effect model

The basis for rejecting H<sub>0</sub> is using the Hausman statistic and comparing it with the chi-square. Suppose the Hausman test result is greater than the table (the critical value of the chi-square statistic). In that case, H<sub>0</sub> is rejected, which means that the correct estimation for panel data regression is the fixed effect model and vice versa.

Fixed-effects (within) regression		Number of obs =	105			
Group variable: ID		Number of groups =	35			
R-sq:		Obs per group:				
within =	0.1924	min =	3			
between =	0.1316	avg =	3.0			
overall =	0.1308	max =	3			
corr(u_i, Xb) = 0.2938		F(2, 68) =	8.10			
		Prob > F =	0.0007			
Y_TAK	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
X1_PDRB	.0064058	.0022293	2.87	0.005	.0019573	.0108542
X2_UMK	.0073051	.0874734	0.08	0.934	-.1672453	.1818555
_cons	807788.3	126754.3	6.37	0.000	554854.1	1060723
sigma_u	3058022.2					
sigma_e	60151.866					
rho	.99961323 (fraction of variance due to u_i)					
F test that all u_i=0: F(34, 68) = 6994.38				Prob > F = 0.0000		

Figure 2 Hausman Test Results

The results of the Hausman test show that the F value in this Hausman test is 0.0007, so the best model is fem.

## CLASSICAL ASSUMPTION TEST

### Multicollinearity Test

To find out whether the research data contains multicollinearity or not, it can be based on the following assumptions:

1. If the VIF value > 10 and the Tolerance value is 0.1, then the data can be said not to contain multicollinearity.
2. If the VIF value is 0.1, then the data can be told not to have multicollinearity.

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. vif

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Variable	VIF	1/VIF
X1_PDRB	1.72	0.581180
X2_UMK	1.72	0.581180
Mean VIF	1.72	

Figure 3 Multicollinearity Test Results

The VIF value of each independent variable X1 is 1.72, and X2 is 1.72; then, the average VIF value is 1.72. The probability value is 0.000. A good regression model is that there is no correlation between the independent variables. The test criteria are that if the VIF value is less than ten and the start tolerance is more than 0.10, the proposed regression model does not contain multicollinearity symptoms.

Table 1 Multicollinearity Test Results

Free Variable	VIF	Description
GRDP	1,72	No multicollinearity
MSEs	1,72	No multicollinearity

The data above shows that all independent variables have a VIF value of less than 10. Thus the regression model used in this study does not contain multicollinearity symptoms.

### Heteroscedasticity Test

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Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of Y_TAK

chi2(1)          =    245.51
Prob > chi2      =    0.0000

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Figure 4 Heteroscedasticity Test Results

From the picture above, all independent variables show insignificant test results, so it can be concluded that all independent variables do not occur heteroscedasticity in error variance.

### Statistic Test

Statistic test is one of the techniques commonly used in data analysis. In data analysis, statistical tests are used to test hypotheses and determine the significance of the relationship between variables. This Descriptive Statistical Test aims to provide an overview or description of data seen from the average value (mean), standard deviation, maximum, and minimum.

### T Test

The t-test technique is used to compare two samples or population averages. This type of t-test helps determine whether the difference between two samples or population averages is significant. The t-test can be used on small samples assuming the data comes from a normal distribution.

Y_TAK	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
X1_PDRB	.0064058	.0064991	0.99	0.331	-.006802	.0196135
X2_UMK	.0073051	.0988152	0.07	0.942	-.1935115	.2081218
_cons	807788.3	115027.7	7.02	0.000	574023.9	1041553
sigma_u	3058022.2					
sigma_e	60151.866					
rho	.99961323 (fraction of variance due to u_i)					

Figure 5 T Test Result

The results of the above calculations show no significant value because the p-value value is smaller than alpha. Then we reject the null hypothesis, meaning the research results are statistically significant. If the p-value is smaller than the alpha, we fail to reject the null hypothesis, meaning the research is statistically insignificant.

### F Test

This F test is a statistical testing method carried out simultaneously with two or more objects as a comparison. This d statistical test is used to test the hypothesis. The aim is to determine the accuracy of the method used, namely, repeatedly determining the size of the variance of the test method. According to Ghozali (2012: 98), the statistical test f aims to show whether an independent variable that is entered will influence the dependent variable.

Number of obs	=	105
Number of groups	=	35
Obs per group:		
min	=	3
avg	=	3.0
max	=	3
F(2, 34)	=	3.94
Prob > F	=	0.0288

Figure 6 F Test Result

This F test is a statistical testing method carried out simultaneously with two or more objects as a comparison. This d statistical test is used to test the hypothesis. The aim is to determine the accuracy

of the method used, namely, repeatedly determining the size of the variance of the test method. According to Ghozali (2012: 98), the statistical test  $f$  aims to show whether an independent variable that is entered will influence the dependent variable.

### R-Square Test

R-square is a statistical measure representing the proportion of variance for the dependent variable explained by the independent variables in the regression model. While correlation explains the strength of the relationship between the independent and dependent variables, R-squared explains the extent to which one variable's variance explains the second variable's variance.

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R-sq:  
  within  = 0.1924  
  between = 0.1316  
  overall = 0.1308  
  
corr(u_i, Xb) = 0.2938
```

Figure 7 R-Square Test Result

From the figure above, the adjusted R2 test value in the regression test is 0.1924, which means that the independent variable can explain the dependent variable by 19%. In comparison, the remaining 81% is explained by other variables.

### Effect of Gross Regional Domestic Product on the Size of the labor force

When GRDP increases by IDR 1,000,000, the labor force decreases by 0.006 people. The variable harms the number of the labor force because if the amount of GRDP increases, it is followed by a decrease in the labor force in Central Java.

Sofiatuz Zahroh's journal (2017) supports my research in which the rise follows an increase in GRDP growth in unemployment. According to Amrullah et al. (2019), if there is an increase in GRDP, it means that there has been an increase in the production of goods and services which results in an increase in production factors, one of which is an increase in labor demand, thereby reducing the unemployment rate. In addition, this study's results align with research conducted by Priastiwi and Handayani (2019) and Amrullah et al. (2019), which state that GRDP negatively affects the unemployment rate. Population growth encourages applying innovation (technology) (Mulyadi, 2003). It will make unemployment increase.

### The Effect of Regency / City Minimum Wage on the labor force

When the minimum wage increases by Rp 1, the labor force decreases by 0.007 people. The variable harm the labor force because if the number of MSEs increases, it is followed by a decrease in the labor force in Central Java.

Increasing the minimum wage will encourage individuals to look for work and immediately accept existing job offers, reducing unemployment (Kuntiarati, 2018). Raising the minimum wage will also motivate and help people get a decent salary (Sembiring and Sasongko, 2019). This study's results align with research conducted by Sembiring and Sasongko (2019) and Putri (2016), which stated that wages negatively affect the unemployment rate.

## CONCLUSION

According to the findings of the study that was carried out, it is possible to conclude that the district/city minimum wage and the gross regional domestic product together have a relatively insignificant effect on the number of people who will be working in Central Java Province during the years 2019-2022. gross regional domestic product has a negative and insignificant effect on the number of labor forces in Central Java Province in 2019-2022 because if the amount of GRDP increases, it will be followed by a decrease in the number of labor forces in Central Java. Because a decline typically follows an increase in the minimum wage in the total number of people actively seeking employment, the minimum wage is expected to have a negative and insignificant impact on the total number of people actively seeking employment in the Central Java Province in 2019-2022.

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