



## Determinant Analysis of Open Unemployment Rate in West Java Province

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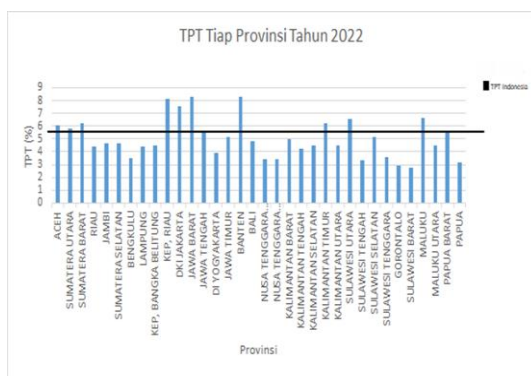
### Abstract

Unemployment is a condition where individuals belonging to the workforce want to get a job but have not yet found a job. One of the unemployment problems that needs to be solved immediately is Tingkat Pengangguran Terbuka. Tingkat Pengangguran Terbuka is the percentage of the number of unemployed to the total labor force. This study aims to determine the determinants of TPT in West Java Province. The data source used comes from BPS for the 2018-2021 period where the determinants of TPT include PDRB, IPM, population, TPAK, and LPP. Data analysis used panel data regression with the Fixed Effect Model (FEM) approach. The results showed that simultaneously PDRB, IPM, population, TPAK, and LPM had an effect on TPT. Partially, PDRB has a significant negative effect on TPT, IPM has a non-significant negative effect on TPT, population has a significant positive effect on TPT, TPAK has a non-significant negative effect on TPT, and LPP has a non-significant positive effect on TPT. The coefficient of determination (R<sup>2</sup>) shows the number 0.877 which means that the total variation in TPT in West Java Province in 2018-2021 can be explained by PDRB, IPM, population, TPAK, and LPM of 87.7%..

**INTRODUCTION**

increasing national stability, spurring economic growth, improving the investment climate, and reducing the response rate. Indonesia, as a developing country, has the same problems as other developing countries, namely the difficulty of controlling response rates (Mulyadi, 2017). Unemployment is a complex problem because it affects and is influenced by many factors that interact with each other in a pattern that is not easy to understand. The problem of hostility is one result of the economic phenomenon that occurs (Amrullah et al, 2019). Unemployment in Indonesia is a complex economic problem because many factors and types cause reactions.

Unemployment is a condition where individuals belonging to the workforce want to get a job but have not gotten a job yet (Sukirno, 2010). One of the unemployment problems that needs to be solved immediately is open unemployment. The Open Unemployment Rate (TPT) is the percentage of the number of unemployed to the total labor force. The Labor Force is the population of working age (15 years and over) who are working or have jobs but are temporarily not working, and are unemployed. Unemployment, namely: (1) residents who are actively looking for work, (2) residents who are preparing for new businesses/jobs, (3) residents who are not looking for work because they feel it is impossible to get work, (4) groups of residents who are not actively looking for work with reasons already have a job but have not started working (BPS, 2022).



Source : Badan Pusat Statistik

Image 1. TPT Indonesia 2012 – 2022

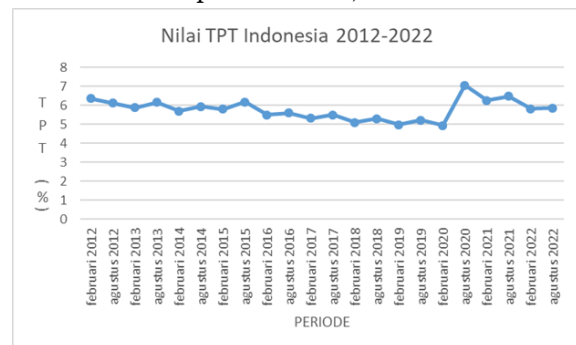
The figure above shows that there have been fluctuations in the Open Unemployment Rate

(TPT) in Indonesia during the last 10 years. The highest TPT value occurred in the August 2020 period then decreased slowly in the following period. The increase in the value of TPT is the impact of the economic crisis due to the Covid-19 pandemic. The economic crisis due to the Covid-19 pandemic is not only experienced by Indonesia but also the whole world (Central Bureau of Statistics, 2020).

Source : Badan Pusat Statistik, 2022

Image 2. TPT Figures for Each Province in Indonesia Year 2022

From the picture above, it can be seen that



West Java is the province with the highest TPT score (8.33) in 2022. This value is far above the National TPT score of only 5.85%. The high value of TPT in West Java Province shows that there is no balance between the number of jobs and the number of workers in West Java. In addition, the high TPT value gives an indication of the large working-age population that is included in unemployment (Corolina and Panjawa, 2020). The high value of TPT in West Java Province is of course a serious problem that the government needs to pay attention to. This is because the Open Unemployment Rate (TPT) is an indicator used to assess people's social welfare (Kurniawati and Budiantara, 2019). Where the higher the value of TPT, the lower the level of social welfare.

Unemployment is a complex problem because it influences and is influenced by several interrelated factors. One indicator that can be used to measure unemployment is the Open Unemployment Rate (TPT). Amrullah et al (2019) reported that the Gross Regional Domestic Product (GDP), Provincial Minimum Wage (UMP), and inflation simultaneously had a significant effect on the Open Unemployment Rate in Java Island. Partially, GRDP has a significant effect on TPT, but UMP and inflation have no significant effect on

TPT. In another study conducted by Susanto and Pratama (2021) found that increased economic growth caused a decrease in the value of TPT, while an increase in the minimum wage caused an increase in the value of TPT in DI Yogyakarta. Another independent variable in this study, namely the average length of schooling, has no effect on TPT in DI Yogyakarta. The analysis of TPT modeling in West Java in 2017 conducted by Kurniawati and Budiantara (2019) reports that the Labor Force Participation Rate (TPAK), dependency ratio, average length of schooling and economic growth rate have a significant effect on the Open Unemployment Rate (TPT) in the Province West Java in 2017.

Based on the description of the data above, it is known that West Java Province is the Province with the highest TPT value compared to other Provinces in Indonesia in 2022. In addition, the TPT value for West Java Province is higher than the National TPT value. The Open Unemployment Rate is a complex problem because it affects and is influenced by many factors that interact with each other so that it is not easy to understand. This study aims to determine the determinants of the Open Unemployment Rate in West Java Province.

**RESEARCH METHODS**

This research is explanatory research, namely research that explains factually, systematically, and accurately about an object to determine whether there is a relationship between two or more variables (Nazir, 2003). Based on the data, this research is a quantitative research, namely research with data measured on a numerical scale (Sugiyono, 2017). The type of data used in this study is panel data, which is a combination of time series data (T) and cross section (N). The types of data sources used are secondary data sources, namely data sources

Effects Test	Statistic	d.f.	Prob.
Cross-section F	11.230255	(26,76)	0.0000
Cross-section Chi-square	170.349833	26	0.0000

obtained indirectly from data sources, for example through other people or through documents that are deliberately collected by researchers to

complement research data needs (Sugiyono, 2017). The data source for this research was obtained from the Central Bureau of Statistics for 2018 – 2021.

A research variable is an attribute or characteristic or value of a person, object or activity that has certain variations determined by the researcher to be studied and then drawn conclusions (Sugiyono, 2019). This study has two variables, namely the independent variable (X) and the dependent variable (Y). The independent variables consist of GRDP, HDI, population, TPAK, and population growth rate. The dependent variable in this study is the open unemployment rate.

Data analysis in this study used panel data regression with the help of the eviews 10 program. Panel data regression analysis in this study aims to determine the effect of GRDP, TPAK, population, human growth index, and population growth rate on the open unemployment rate in West Java 2018 – 2021 There are three types of analysis techniques that can be used for panel data regression, namely Pooled Least Square (PLS), Fix Effect Model (FEM), and Random Effect Model (REM) (Amrullah et al, 2019).

The structure of this model assumes that the influence of each individual is the same. To determine the best model structure that can be used, the Chow, Hausmann, and Lagrange Multiplier (LM) tests were carried out (Amrullah et al, 2019). The next test after knowing the best model structure is the hypothesis test. The hypothesis testing in this study included the F-statistic test, the t-statistic test, and the coefficient of determination test (R2).

**RESULTS AND DISCUSSION**

Based on the Panel Data Regression Results, the PLS R2 value is 0.408; the R2 FEM value is 0.877; the R2 REM value is 0.306. To determine the best estimation model that can be used in measurement, the Chow test and Hausman test are performed.

Tabel 1. Chow Test Results

The Chow test results show that the Prob. Cross-section Chi-square is 0.00 (<0.05). This

shows that the fixed effect model is better than PLS or common effect.

Tabel 2. Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	87.417142	5	0.0000

The Hausman test results show that the Prob. Random cross-section is 0.00 (<0.05). This shows that the best method that should be used is the fixed effect rather than the random effect.

Tabel 3. Hasil Uji Fixed Effect Model (FEM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.062915	22.84920	-0.090284	0.9283
_X1_PDRB	6.069107	9.551208	-6.350873	0.0000
_X2_IPM	-0.269587	0.390500	-0.690363	0.4921
_X3_POPULASI	1.153205	2.515506	4.566139	0.0000
_X4_TPAK	-0.117938	0.060226	-1.958258	0.0539
_X5_LPP	0.040277	0.242448	0.166126	0.8685

Effects Specification			
Cross-section fixed (dummy variables)			
Root MSE	0.793489	R-squared	0.877776
Mean dependent var	8.789907	Adjusted R-squared	0.827922
S.D. dependent var	2.280251	S.E. of regression	0.945901
Akaike info criterion	2.967837	Sum squared resid	67.99940
Schwarz criterion	3.762543	Log likelihood	-128.2632
Hannan-Quinn criter.	3.290061	F-statistic	17.60677
Durbin-Watson stat	2.414413	Prob(F-statistic)	0.000000

The results of the hypothesis test show that the value of the F-statistic is 17.60 with a Prob value. Is equal to 0.00. Based on this, it can be concluded that all independent variables used in this study simultaneously have a significant effect on the dependent variable. The coefficient of determination (R<sup>2</sup>) shows a value of 0.877 so that it can be said that the independent variables in this study can explain 87.7% of the dependent variable, while the remaining 12.3% is explained by other variables not used in this study. The table above also shows that the probability values of GRDP, HDI, population, TPAK, and LPP are 0.0000

(<0.05), 0.4921 (>0.05), 0.0000 (<0.05), 0.0539 (>0) respectively. .05), and 0.8685 (>0.05). The results mean that GRDP and Population have a significant effect on the Open Unemployment Rate, while HDI, TPAK, and LPP have no significant effect on the Open Unemployment Rate.

GRDP is known to have a significant negative effect on TPT. The negative effect means that an increase in the value of GRDP causes a decrease in the value of TPT. The results of this study are in line with Arizal and Marwan (2019) who in their research reported that GRDP had a negative and significant effect on TPT in Sumatra Province. In addition, research by Rahmah and Murgianto (2016) also states that GRDP has a negative and significant effect on the Open Unemployment Rate in the City of Surabaya. The significance of the influence of GRDP on TPT in West Java Province in 2018-2021 is believed to be related to the increase in GRDP of each district/city in West Java Province which is allocated for various economic activities oriented to the real sector so that it can absorb labor and reduce open unemployment. Rahmah & Murgianto, 2016).

The Gross Regional Domestic Product (GRDP) has a negative effect on open unemployment, meaning that an increase in GRDP causes a decrease in the number of open unemployment. George Mankiw (2003) revealed that the relationship between the GRDP level which is very influential on the unemployment rate. This is based on Okun's Law, which examines the relationship between the unemployment rate and the GRDP of a region. Okun's law describes the relationship between unemployment and economic growth as inversely (negative), the higher the level of economic growth, the lower the unemployment rate (Okun, 1962). Several studies have been conducted and provide a conclusion that Okun's Law is indeed proven to exist even though there are variations in Okun's coefficient in each country (Astari et al, 2019).

HDI is known to have a negative effect on TPT in West Java Province but the effect is not significant. The results of this study are in line with the findings of Latifah et al (2017) which stated that HDI had no effect on TPT in Manado City. The absence of HDI influence on TPT is related to the

fact that unemployment is not only caused by the quality of human resources but also caused by limited employment opportunities, and the existing employment opportunities are not in accordance with the interests of prospective workers or job seekers (Marwan, 2019).

Based on the results of statistical analysis, it can be said that the Human Development Index is not able to drive a reduction in the Open Unemployment Rate. The Human Development Index is high in West Java Province based only on education, health and purchasing power figures. While Productivity, Sustainability and Empowerment are still underdeveloped, so this will have an impact on the work quality of each individual workforce. Because producers will recruit a workforce that has the quality according to what the company needs, it will be difficult for individuals with low quality to get a job (Nugroho & Marseto, 2022).

The population is known to have a significant positive effect on TPT in West Java province. The results of this study are in line with research by Albarqi (2016) who argues that population size has a significant positive effect on the unemployment rate in East Java. The positive and significant influence of the population on TPT is due to the continuous increase in population which can cause problems in the economic and employment sectors (Sisnita and Prawoto, 2017). The large number of residents will have an impact on the size of the workforce where the higher the population, the more limited the available jobs (Albarqi, 2016).

The results of this study are also in line with the results of Muminin and Rianto's research (2017) which explain that the population has a positive and significant effect on the open unemployment rate, this is due to the increasing number of residents in an area with a higher level of labor force, and without being accompanied by jobs. then the unemployment rate will also increase in the region.

TPAK is known to have a negative effect on TPT in West Java Province but the effect is not significant. The results of this study are in line with the findings of Salsabila et al (2022) which stated that TPAK had no significant effect on TPT. Expanding employment opportunities can reduce TPT rates, but the mismatch between jobs and

skills possessed makes the effect of expanding employment on TPT insignificant (Marwan, 2019).

The definition of the labor force participation rate (TPAK) is based on the Central Bureau of Statistics (2011), namely the proportion of the population included in the labor force, namely those who are employed and unemployed to the working age population (15 years and over). The Labor Force Participation Rate (TPAK) indicates the size of the economically active working age population in a country or region (Salsabila et al, 2022). The results of this study are in line with Khotimah's research (2018) which states that TPAK has a negative effect on TPT. A negative relationship occurs because when there is an increase in population it indicates an increase in the workforce, it will be easier for companies to get labor and the wages offered by companies are low because there is an excess supply of jobs so that workers will compete to get jobs (Filiarsari & Setiawan, 2021).

LPP is known to have a positive effect on TPT in West Java Province but the effect is not significant. The results of this study are in line with David Albarqi (2016) which states that LPP has a positive effect on TPT in West Java Province but the effect is not significant. In another study, LPP had a significant positive effect on TPT in Lampung Province in 2009 – 2015. Population growth also affects the unemployment rate because with an increase in population, the number of workers and labor force also increases. The labor force needs jobs and generally in developing countries, the population growth rate is greater than the number of existing jobs (Sisnita & Prawoto, 2017). Therefore, not all of the labor force can get a job and there will be unemployment.

The positive relationship between the population growth rate and the open unemployment rate is one of the effects of a very rapid population growth rate that is not matched by an increase in employment opportunities. Population growth, low quality Human Resources (HR) and limited employment opportunities are the roots of the problem of poverty because rapid population growth and not matched by available jobs will cause unemployment everywhere (Syam, 2013).

## CONCLUSION

Based on the research results, it can be concluded that GRDP, HDI, population, TPAK, and LPP simultaneously have a significant effect on TPT in West Java Province. The test results for the coefficient of determination (R<sup>2</sup>) obtained a value of 0.877 so that it can be interpreted that the total variation in TPT in West Java Province can be explained by the variables GRDP, HDI, population, TPAK, and LPP. While the remaining 12.3% is explained by other variables not used in this study. Partially, (1) GRDP has a negative and significant effect on TPT, which means that the relationship between unemployment and economic growth is inversely (negative), where the higher the level of economic growth, the unemployment rate will decrease. (2) HDI has a negative but not significant effect on TPT, this is because producers will recruit workers who have quality according to what the company needs, so individuals with low quality will find it difficult to get a job. (3) The population has a negative and significant effect on TPT, this is due to the increasing number of residents in an area with a higher level of labor force, and without being accompanied by new jobs, the unemployment rate will also increase in that region. (4) TPAK has a negative but not significant effect on TPT, because when there is an increase in population it indicates an increase in the workforce, it will be easier for companies to get workers and the wages offered by companies will be low due to an excess of job offers so that workers will compete to get jobs. (5) LPP has a positive but not significant effect on TPT, this is related to population growth, the low quality of Human Resources (HR) and limited employment opportunities are the root causes of poverty because rapid population growth and not matched by available jobs will causing unemployment everywhere.

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