Journal Pemberdayaan Ekonomi dan Masyarakat Vol: 1, No 3, 2024, Page: 1-9

Analysis of the Influence of Economic Growth, Average Length of Schooling, and Provincial Minimum Wage on the Open Unemployment Rate (TPT) in 6 Provinces of Java

Muhammad Adib Habibi*, Muhammad Taufiq, Annisa Fitria Utami

Universitas Pembangunan Nasional Veteran Jawa Timur, Indonesia

DOI:
https://doi.org/10.47134/jpem.v1i3.380
*Correspondence: Muhammad Adib Habibi
Email: adibhabibi69@gmail.com

Received: 01-05-2024
Accepted: 15-06-2024
Published: 31-07-2024

Abstract: Unemployment poses an urgent issue globally and correlates with various factors but follows a non-systematic pattern. This Study examine the impact of economic growth, minimun wages, average years of schooling on the open unemployment rate (OUR) six Province in Java Island. Using secondary panel data regression analysis from 2013 to 2022, a quantitative approach with multiple linear regression analysis was employed, processed with Eviews 13 software. The finding indicate that, simultaneously, all variables significant influence the open unemployment rate(OUR). Specifically, economic growth shows a negative and significant effect, average length of Schooling (ALOS) has a negative and significant effect, and minimum wage has a negative and significant effect. This study provides insights into the dynamic influencing unemployment six Province in Java Island, highlighting the critical roles of minimum wage, education, and economic growth in shaping the unemployment landscape. Understanding these factors can help policymakers develop strategies to reduce unemployment and promote economic stability.

Keywords: Economic growth, OUR, Minimum Wage, Unemployment, ALOS

Introduction

Unemployment is often a hot topic of discussion and a primary concern in political debates aimed at comprehensive job creation (Mankiw, 2010). Unemployment poses an urgent issue globally and correlates with various factors but follows a non-systematic pattern (Herniwati & Handayani, 2019). Addressing this problem is crucial as it impacts economic burdens due to inefficient utilization of production factors, leading to poverty from insufficient welfare levels (Muslim, 2014). According to Sukirno as cited in (Prakoso, 2020), unemployment is a condition that generates economic and social problems. High unemployment rates can manifest issues such as crime driven by poverty.

Indonesia is a developing country that continually grapples with unemployment issues. Individuals categorized under open unemployment include those who are not working or actively seeking employment, preparing to start a business, not currently seeking employment, and those who have secured jobs but have not yet started working (Chalid & Yusuf, 2014). Data from the Central Statistics Agency (Badan Pusat Statistik) indicates varying levels of Open Unemployment Rates (OUR) across different provinces in

Java Island. Banten Province holds the highest position in open unemployment rates at 9.24%. DKI Jakarta, as a metropolitan area often sought after for job opportunities by Indonesians, ranks third below West Java Province with a rate of 7.18%. The high supply of labor cannot match the demand for jobs, resulting in the high Open Unemployment Rate (OUR) in DKI Jakarta. Yogyakarta Province records the lowest Open Unemployment Rate (TPT) in Java Island. Yogyakarta's OUR is 3.96%, significantly lower compared to West Java, Central Java, and East Java provinces.

Education serves as the primary foundation for human investment in the theory of human capital, leading to increased economic growth and contributing to the reduction of unemployment rates by fostering improved societal prosperity. It is a key factor influencing unemployment, as higher levels of education enhance the quality of the workforce. Human investment can be viewed through the lens of human capital theory, where individuals, after receiving education in various forms, are expected to contribute to the escalation of values such as personal income, productivity, and individual rationality. Education also indirectly influences meeting individual needs by enhancing productivity, thereby achieving a better standard of living. Unlike physical capital, land, and labor, which experience diminishing returns, knowledge does not (Muslim, 2014).

Economic growth is one of the variables that influences unemployment. Rapid economic growth implies increased profitability for companies, leading to the creation of more job opportunities (Suparman & Muzakir, 2023). This condition identifies that a decrease in economic growth correlates with higher unemployment rates. Badan Pusat Statistik (BPS) records the growth rates in six provinces on the island of Java. The pandemic has significantly impacted economic growth, resulting in contraction across all six provinces simultaneously. However, in 2020, Yogyakarta Province did not experience an increase in unemployment rates and remained relatively stable. This contrasts with other provinces in Java.

The implementation of wages also affects the unemployment rate, where an increase in wages can escalate the unemployment rate, while a decrease in wages benefits companies by reducing their financial burden (Widiantari et al., 2023). According to research by (Prawoto, 2017)wages have a negative impact on the open unemployment rate. The study indicates that regardless of the wage level, people will continue to work. This phenomenon occurs due to an oversupply of labor but an imbalance in demand for formal sector employment when the minimum wage increases, thereby leading to a shift in labor supply to the informal sector.

The efficiency wage theory states that higher wages lead to increased labor productivity (Rahmi & Riyanto, 2022). The increase in minimum wage is also believed to have a spillover effect due to externalities, both positive and negative, on employment and labor productivity. Wage increases also impact the substitution of labor inputs and influence the escalation of demand for skilled labor (CAMPOLIETI, 2015).

Methodology

The research regarding the analysis of economic growth, average years of schooling, and wages on unemployment in Java Island adopts a quantitative approach. This type of approach is chosen because it allows for the measurement of human behavior and social issues. The research results are not deviated from the actual conditions because they are supported by the selection of credible problems, formulation of the problem, identification of issues, and accompanied by accurate population and sample determination (Yusuf, 2014)

This research uses independent variables such as Economic Growth, Provincial Minimum Wage, and average years of schooling, with open unemployment rate as the dependent variable. The data source for obtaining information related to this research was obtained from the (Badan Pusat Statistik, BPS) for the period 2013-2022.

The method of analysis used in this study is panel data regression analysis. Panel data combines time series data with cross-sectional data (Syukron & Fahri, 2018).Time series data refers to data on a single entity observed over multiple time periods, whereas cross-sectional data refers to data collected from one or more entities at a single point in time. Eviews 12 is used to process the research data.

Result and Discussion

A. Multicollinearity Test

Tabel 1. Multicollinearity Test

	PE	UMP	RLS
PE	1.000000	0.092002	0.142401
UMP	0.092002	1.000000	0.255748
RLS	0.142401	0.255748	1.000000

Source: *Eviews 13*

Referring to Table 1, it illustrates the results of the test on independent variables comprising Economic Growth, Provincial Minimum Wage (UMP), and Average Years of Schooling (RLS), indicating that there is no multicollinearity issue as their correlation values are below 0.8.

B. Heteroscedasticity Test

Tabel 2. Heteroscedasticity Test Results

Dependent Variable: RESABS
Method: Panel Least Squares
Date: 07/03/24 Time: 13:19
Sample: 2013 2022
Periods included: 10
Cross-sections included: 6
Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6747.420	4491.270	-1.502341	0.1392
X1_PE	-0.000991	0.000902	1.098947	0.2770
X2_UM	0.000953	0.000850	1.121193	0.2675
X3_RLS	0.038636	0.024199	1.596591	0.1165

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.570777	Mean dependent var	3529.974
Adjusted R-squared	0.503448	S.D. dependent var	3232.739
S.E. of regression	2277.997	Akaike info criterion	18.43746
Sum squared resid	2.65E+08	Schwarz criterion	18.75161
Log likelihood	-544.1239	Hannan-Quinn criter.	18.56034
F-statistic	8.477408	Durbin-Watson stat	1.432905
Prob(F-statistic)	0.000000		

Source: *Eviews 13*

Referring to Table 2, it shows that all independent variables—Economic Growth (PE), Average Years of Schooling (RLS), and Provincial Minimum Wage (UMP)—are free from heteroskedasticity issues as their probabilities collectively exceed 0.05.

C. Panel Data Regression Analysis

Tabel 3. Panel Data Regression Analysis

Dependent Variable: Y_TPT
Method: Panel Least Squares
Date: 07/03/24 Time: 13:03
Sample: 2013 2022
Periods included: 10
Cross-sections included: 6
Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	45646.92	10197.05	4.476485	0.0000
X1_PE	-0.000284	0.002048	0.138603	0.0389
X2_UM	-0.002005	0.001930	-1.039167	0.0336
X3_RLS	-0.791147	0.054942	14.39965	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.997261	Mean dependent var	218208.0
Adjusted R-squared	0.996831	S.D. dependent var	91877.94
S.E. of regression	5171.999	Akaike info criterion	20.07739
Sum squared resid	1.36E+09	Schwarz criterion	20.39154
Log likelihood	-593.3216	Hannan-Quinn criter.	20.20027
F-statistic	2321.007	Durbin-Watson stat	1.202520
Prob(F-statistic)	0.000000		

Source: *Eviews 13*

Based on Table 3, the regression equation model can be formulated as follows

TPT= 45646.92-0.000284PE-0.002005RLS+0.791147UMP+ ε

1. Economic Growth (PE) with a coefficient of -0.000284 and a probability of 0.0389. The regression output illustrates that an increase in economic growth by one unit is associated with a decrease in the open unemployment rate across six (6) provinces in Java Island by 0.000284, assuming other variables remain constant.
2. Wage, proxied through Provincial Minimum Wage (UMP), has a coefficient output of 0.791147 with a probability of 0.0000. The regression results indicate that an increase in wage in the six (6) provinces of Java Island by one unit is followed by an escalation in the open unemployment rate across these provinces by 0.791147, assuming other variables remain constant.
3. Average Length of Schooling (RLS) has a coefficient value of -0.002005 with a probability of 0.0336. The regression results indicate that an increase in average length of schooling by one unit is followed by a decrease in the open unemployment rate by 0.002005 units, assuming other variables remain constant.

D. Coefficient of Determination

Tabel 4. Coefficient Of Determination Result

R-Squared	0.997261
Adjusted R Squared	0.996831
S.E. of regression	5171.999

Source: *Eviews 13*

Based on the regression output, the R-squared (R2) in Table 4 records a value of 0.9972 or 99.72%, indicating that the independent variables comprised of Economic Growth (PE), Minimum Regional Wage (UMP), and Average Length of Schooling (RLS) collectively explain 99.72% of the variation in the dependent variable, Open Unemployment Rate (TPT). The remaining 0.28% is influenced by other variables not included in the study but still impacting the dependent variable.

E. F Test

Tabel 5. Uji F

F-statistic	2321.007
Prob (F-statistic	0.000000

Source: *Eviews 13*

Table 5 illustrates the data processing results with an F-statistic test yielding a Prob(F-statistic) value of 0.00000. Therefore, the Prob(F-statistic) value is smaller than the significance level α=0.05 (0.0000 < 0.05). Consequently, it can be concluded that H0 is rejected and H1 is accepted, indicating that the collective independent variables—economic growth, minimum regional wage, and average length of schooling—simultaneously influence the dependent variable approximated through the open unemployment rate across six (6) provinces in Java Island from 2013 to 2022.

F. T Test

Tabel 6. Hasil Uji T

Variabel	Coefficient	Std. Error	t-Statistic	Prob.
C	45646.92	10197.05	4.476485	0.0000
PE_X1	-0.000284	0.002048	0.138603	0.0389
RLS_X2	-0.002005	0.001930	-1.039167	0.0336
UMP_X3	-0.791147	0.054942	14.39965	0.0000

Source: *Eviews 13*

Referring to Table 6, which presents the results of the t-test in panel data regression, the probabilities of each research variable are obtained as follows

1. The hypothesis test shows a probability value of 0.0389, which is smaller than α=0.05 (0.0389 < 0.05), therefore H0 is rejected and H1 is accepted, yielding a significant output. It can be concluded that economic growth significantly influences the open unemployment rate in six (6) provinces of Java Island.

2. The hypothesis test indicates a probability value of 0.0336, which is smaller than α=0.05 (0.0336 < 0.05). Therefore, H0 is rejected and H1 is accepted, resulting in a significant output. It can be concluded that the average length of schooling significantly influences the open unemployment rate in six (6) provinces of Java Island..
3. The hypothesis test yields a probability value of 0.0336, which is smaller than α=0.05 (0.0000 < 0.005), thus rejecting H0 and accepting H1, indicating significant output. It can be concluded that the average length of schooling significantly influences the open unemployment rate in the six (6) provinces of Java Island.

Discussion

Referring to the output of panel data regression analysis on the independent variable of economic growth against the unemployment rate in six provinces of Java Island, it shows a probability value of 0.0389, which is smaller than (α=0.05) (0.038 < 0.05). Therefore, H0 is rejected and H1 is accepted, indicating that economic growth has a negative and significant impact on the unemployment rate in these six provinces of Java Island. The coefficient value of -0.000284 signifies the magnitude of this effect. The regression test output aligns with Okun's Law theory, where each increase in economic growth automatically reduces the unemployment rate. Hence, the correlation between economic growth and the unemployment rate open is consistent with the hypothesis that it is positive and significant due to the probability value being smaller than α = 0.05.

The assumption is based on the escalation of economic growth leading to increased economic activity across all sectors. The labor market always correlates with economic phenomena, as higher consumer consumption levels naturally prompt producers to increase the quantity of goods and services produced. This increased demand for labor naturally absorbs the workforce and helps mitigate unemployment issues. (Astari et al., 2019)

Referring to the regression output of panel data analysis, the dependent variable, average years of schooling, against the unemployment rate in six provinces of Java Island shows a probability value of 0.0000, which is smaller than α=0.0005 (0.000 < 0.0005). Therefore, H0 is rejected and H1 is accepted. The research output indicates that average years of schooling has a significant negative impact on the unemployment rate in these six provinces of Java Island, with a coefficient value of -0.002050. The regression test output is consistent with the theory of human capital as proposed by Todaro on (Suhendra & Wicaksono, 2020).. This theory suggests that investments in education and human capital development lead to increased productivity and reduced unemployment rates. Through education that individuals have acquired, it is expected to cultivate superior human resources. Based on human resource development efforts, individuals' skills are escalated, facilitating their placement into jobs. Education serves as a pathway to reduce unemployment by enhancing productivity and skills. The higher level of education an individual achieves, the more it implies an escalation of skills and quality, enabling individuals to secure employment and avoid becoming part of the unemployed group. Therefore, the correlation between average years of schooling and the open unemployment

rate aligns with the hypothesis assumption that it is significant, given that the probability value is smaller than $\alpha = 0.05$.

Java Island is a center for economy and governance in Indonesia. Referring to the regression test output of panel data, the dependent variable Minimum Provincial Wage (UMP) against the open unemployment rate in six provinces of Java Island shows a probability value of 0.0000, which is smaller than $\alpha = 0.005$ ($0.000 < 0.005$). Therefore, Ho is rejected and H1 is accepted. It is illustrated that the minimum wage has a significant negative impact on the open unemployment rate in these six provinces of Java Island, with a coefficient value of -0.791147. This test output is consistent with the theory proposed by Keynes (Setyawan et al., 2021) where government-set wage levels in a country will impact the unemployment rate, as higher wage levels tend to reduce unemployment in that country. The relationship between wages and unemployment is also explained in A.W. Phillips' theory, which states an inverse relationship between wage levels and unemployment rates. In the short term, when wages rise, unemployment tends to decrease, and vice versa. This occurs because higher wages stimulate higher consumption, which then boosts aggregate demand and promotes economic growth. However, in the long term, the Phillips curve may become more vertical, indicating no permanent relationship between wage levels and unemployment. The correlation between wages and the open unemployment rate aligns with the hypothesis assumption that it is significant, given that the probability value is smaller than $\alpha = 0.05$.

Conclusion

Based on the analysis of the impact of economic growth, minimum wages, and average length of school on the open unemployment rate (OUR) 6 Province on Java Island from 2013-2022, the conclusions are as follow : The research results indicate that economic growth has a negative and significant effect on OUR. Average Length of School have a negative and significant on OUR. Minimum wages have a negative and significant on OUR.

The Indonesian government bears a significant responsibility in optimizing human resources through credible educational reforms and comprehensive infrastructure improvements. These steps are crucial to ensuring equitable educational quality nationwide, aligning with the vision of Indonesia Emas 2045 that emphasizes the creation of superior human resources. Through the enhancement, maintenance, and development of educational facilities, the government can build a strong foundation to support the potential of future generations in facing global challenges.

Additionally, adjustments to the minimum wage need to be carefully considered, taking into account the economic conditions and labor needs of each region. This is essential to ensure that wages reflect the balance between labor supply and demand, which will positively impact worker welfare and regional economic stability.

Furthermore, the government needs to further explore strategic economic sectors to support economic growth. Support in creating jobs and facilitating business establishment is expected to significantly reduce unemployment rates. In-depth analysis of factors influencing unemployment rates in Java Island provides valuable insights for designing effective policies to address this issue and stimulate inclusive economic growth in the Province of Java Island. This research also suggests that further studies integrate variables such as inflation and technological advancements to gain a more comprehensive and accurate understanding of unemployment dynamics.

References

Astari, M., Hamzah, L. M., & Ratih, A. (2019). Hukum OKUN: Pertumbuhan Ekonomi dan Tingkat Pengangguran di Indonesia. Jurnal Ekonomi Pembangunan, 8(1), 37–44. https://doi.org/10.23960/jep.v8i1.32

CAMPOLIETI, M. (2015). Minimum Wages and Wage Spillovers in Canada. Canadian Public Policy / Analyse de Politiques, 41(1), 15–34. http://www.jstor.org/stable/24365150

Chalid, N., & Yusuf, Y. (2014). PENGARUH TINGKAT KEMISKINAN, TINGKAT PENGANGGURAN, UPAH MINIMU KABUPATEN/KOTA DAN LAJU PERTUMBUHAN EKONOMI TERHADAP INDEKS PEMBANGUNAN MANUSIA DI PROVINSI RIAU. Jurnal Ekonomi, 22.

Herniwati, D. P., & Handayani, R. (2019). PENGANGGURAN TERBUKA DI PROVINSI JAWA TENGAH. DIPONEGORO JOURNAL OF ECONOMICS, 1, 159. https://ejournal2.undip.ac.id/index.php/dje

Mankiw, G. (2010). MACROECONOMICS (P. Shensa, Ed.; 7th ed.). Worth Publishers.

Muslim, M. R. (2014). PENGANGGURAN TERBUKA DAN DETERMINANNYA. In Jurnal Ekonomi dan Studi Pembangunan (Vol. 15, Issue 2).

Prakoso, E. (2020). ANALISIS PENGARUH TINGKAT PENDIDIKAN, INFLASI, DAN INVESTASI TERHADAP TINGKAT PENGANGGURAN DI INDONESIA PERIODE 2010-2019.

Prawira, S. (2018). PENGARUH PERTUMBUHAN EKONOMI, UPAH MINIMUM PROVINSI, DAN TINGKAT PENDIDIKAN TERHADAP PENGANGGURAN TERBUKA DI INDONESIA. EcoGen, 1(1).

Prawoto, A. N. (2017). Analisis Faktor-Faktor yang Mempengaruhi Tingkat Pengangguran Terbuka di Provinsi Lampung (Periode 2009-2015). In Journal of Economics Research and Social Sciences Sisnita (Vol. 1, Issue 1).

Qausar, najasyi, & Shinta Aminda, R. (2022). Determinan Tingkat Pengangguran Terbuka Di Kabupaten/Kota Provinsi Kepulauan Riau. In Journal Of Development Economic and Digitalization (Vol. 1, Issue 1).

Rahmi, J., & Riyanto. (2022). DAMPAK UPAH MINIMUM TERHADAP PRODUKTIVITAS TENAGA KERJA: STUDI KASUS INDUSTRI MANUFAKTUR INDONESIA (The

Impact of Minimum Wage on Labor Productivity: Evidence from Indonesian Manufacturing Industry). In Jurnal Ekonomi & Kebijakan Publik (Vol. 13, Issue 1).

Setyawan, A., Suparta, I., & Aida, N. (2021). GLOBALISASI EKONOMI DAN PENGANGGURAN: STUDI KASUS INDONESIA. Jurnal Ekonomi Bisnis Dan Kewirausahaan (JEBIK), 10, 263–278. http://dx.doi.org/10.26418/jebik.v10i3.49278

Suhendra, I., & Wicaksono, B. (2016). TINGKAT PENDIDIKAN, UPAH, INFLASI, DAN PERTUMBUHAN EKONOMI TERHADAP PENGANGGURAN DI INDONESIA. 6(2541–1314).

Suhendra, I., & Wicaksono, B. H. (2020). TINGKAT PENDIDIKAN, UPAH, INFLASI, DAN PERTUMBUHAN EKONOMI TERHADAP PENGANGGURAN DI INDONESIA. Jurnal Ekonomi-Qu, 6(1). https://doi.org/10.35448/jequ.v6i1.4143

Suparman, S., & Muzakir, M. (2023). Regional inequality, human capital, unemployment, and economic growth in Indonesia: Panel regression approach. Cogent Economics and Finance, 11(2). https://doi.org/10.1080/23322039.2023.2251803

Syukron, M., & Fahri, H. M. (2018). Pendekatan Regresi Data Panel untuk Pemodelan Jumlah Angkatan Kerja dan Penanaman Modal Luar Negeri terhadap PDRB Provinsi di Indonesia. Indonesian Journal of Applied Statistics.

Widiantari, I. A. A., Sahri, H., & Suriadi, I. (2023). The Influence of Labor Force Participation Rate, Total Population and Minimum Wage on Unemployment in West Nusa Tenggara Province in 2017-2021. JOURNAL OF ECONOMICS, FINANCE AND MANAGEMENT STUDIES, 06(05). https://doi.org/10.47191/jefms/v6-i5-46

Yusuf, A. (2014). METODE PENELITIAN Kuantitatif, Kualitatif & Penelitian Gabungan (I. Fahmi & Suwito, Eds.; 1st ed.). K E N C A N A.