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### **REVISITING DETERMINANTS OF OPEN UNEMPLOYMENT RATE IN WEST JAVA PROVINCE: A REGIONAL DATA ANALYSIS**

### **MENINJAU KEMBALI FAKTOR-FAKTOR PENENTU TINGKAT PENGANGGURAN TERBUKA DI JAWA BARAT: ANALISIS DATA REGIONAL**

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#### **ABSTRAK**

Provinsi Jawa Barat merupakan provinsi dengan tingkat pengangguran terbuka (TPT) tertinggi ketiga di Indonesia, yaitu sebesar 6,74% (BPS, 2025). Secara regional, tingkat pengangguran terbuka yang tinggi juga ditemukan pada kabupaten/kota dengan realisasi investasi tertinggi di Jawa Barat. Penelitian ini bermaksud untuk mengkaji kembali faktor-faktor yang mempengaruhi tingkat pengangguran terbuka di Jawa Barat dengan menggunakan data dari 27 kabupaten/kota selama periode 2018 hingga 2023. Analisis dilakukan dengan menggunakan regresi data panel *two-way fixed effect*. Berdasarkan hasil analisis statistik, tidak terdapat korelasi yang signifikan antara kebijakan upah minimum regional, tingkat inflasi dan realisasi investasi dengan tingkat pengangguran terbuka. Sementara itu, pertumbuhan ekonomi, tingkat partisipasi angkatan kerja, dan rata-rata lama sekolah memiliki korelasi negatif dan pengaruh yang signifikan terhadap tingkat pengangguran terbuka. Oleh karena itu, rekomendasi kebijakan yang dapat dilakukan terbagi menjadi dua tujuan utama, yaitu penciptaan lapangan kerja dan peningkatan kualitas sumber daya manusia di Jawa Barat.

**Keywords:** *inflasi, investasi, pengangguran, upah minimum regional*

#### **ABSTRACT**

West Java Province has the third highest open unemployment rate (TPT) in Indonesia, at 6.74% (BPS, 2025). Regionally, high open unemployment rates are also found in regencies/cities with the highest investment realization in West Java. This study aims to re-examine the factors that influence the open unemployment rate in West Java using data from 27 districts/cities during the period 2018 to 2023. The analysis was conducted using two-way fixed effect panel data regression. Based on the statistical analysis results, there was no significant correlation between regional minimum wage policies, inflation rates, and investment realization with the open unemployment rate. Meanwhile, economic growth, labor force participation rate, and average length of schooling have a negative correlation and a significant effect on the open unemployment rate. Therefore, the policy strategies that can be implemented are divided into two main objectives, which are creating jobs and improving the quality of human resources in West Java.

**Keywords:** *inflation, investment, regional minimum wage, unemployment*

#### **INTRODUCTION**

Indonesia is one of the developing countries that does not escape the problem of unemployment as faced by other developing countries. Unemployment is a challenging issue with many contributing factors. It is often the result of broader economic trends and

events (Amrullah, 2019). Unemployment has a significant impact on individuals and society, as the loss of an unsavable input such as labor means missed opportunities. Unemployment not only increases the costs of unemployment insurance, but also leads to a

decline in skills and proficiency (Rafiee et al., 2024).

In countries like Indonesia, where unemployment benefits are not available, the issue of open unemployment becomes increasingly complex. Those who are openly unemployed face the challenge of having no income, which leaves them at risk of falling into poverty and struggling to meet basic needs. This situation underscores the need for policies that provide safety nets and support for unemployed individuals to prevent them from slipping into economic hardship. Thus, the impact of unemployment does not only cover the labor sector but also other fields including the social sector (Ansar & Mario, 2017).

As the most populous province in Indonesia with more than 50 million people, West Java faces serious challenges in providing adequate employment opportunities, as evidenced by the high open unemployment rate that places it in the third highest position in Indonesia. This reflects the imbalance between rapid population growth and the availability of employment opportunities in various sectors of the economy. With high population growth, a new labor force continues to emerge every year, while available job opportunities have not been able to keep up with this rate of increase. West Java is one of the top five provinces with the highest number of unemployed people in Indonesia with 6.74%, This value is greater than the national open unemployment rate of 4.76%. Table 1 shows the five provinces with the largest TPT in Indonesia.

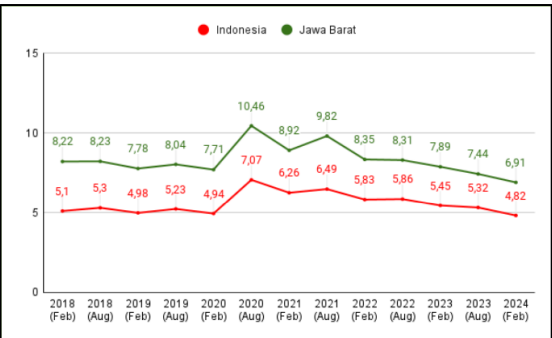
**Table 1. Five Provinces with the Highest Open Unemployment Rate in Indonesia**

| Province        | February 2025<br>(Percentage) |
|-----------------|-------------------------------|
| Papua           | 6.92                          |
| Riau Islands    | 6.89                          |
| West Java       | 6.74                          |
| Banten          | 6.64                          |
| Southwest Papua | 6.61                          |

Source: bps.go.id

The high open unemployment rate in West Java Province highlights a significant imbalance between available jobs and the workforce. It also reflects a large portion of the working-age population being unemployed. This issue demands serious government attention, as open unemployment serves as a key indicator of social welfare. Elevated

unemployment rates can lead to challenges such as poverty and economic instability, ultimately lowering the overall level of social welfare. Over the past six years, West Java has consistently recorded a higher Open Unemployment Rate compared to the national rate, as shown in Figure 1. This condition shows that although the province has an opportunity to great economic potential, the challenges in labor absorption are still significant. This situation needs to be a serious concern, given the large number of productive populations in West Java and its role as one of the most important provinces in Indonesia.



**Picture 1. Comparison of West Java and National Open Unemployment Rate (Percentage)**

Source: bps.go.id, processed by author

Since 2018, West Java has been the province with the highest investment realization in Indonesia. However, this achievement has been accompanied by high open unemployment rates in the regencies/cities with the highest investment realization in West Java as shown in Table 2.

**Table 2. Regencies/Cities with the Highest Open Unemployment Rates and Investment Realization in West Java (BPS, 2024 dan DPMPTSP, 2024)**

| Regency/City       | Open Unemployment Rate (%) | Investment on 2023 (Rupiah) |
|--------------------|----------------------------|-----------------------------|
| Bekasi Regency     | 8.87 %                     | 61,2 T                      |
| Karawang Regency   | 8.95 %                     | 45,9 T                      |
| Purwakarta Regency | 7.72 %                     | 14,8 T                      |
| Bogor Regency      | 8.47 %                     | 15,2 T                      |
| Bandung Regency    | 6.52 %                     | 8,1 T                       |

Source: bps.go.id

Countries or Regions with large populations often encounter the issue of labor surplus, where the demand for jobs exceeds the available opportunities, leaving many job seekers unemployed. Additionally, the diverse minimum wages across regencies/cities reflect the nation's varying economic conditions and the differences in living costs throughout its regions. The minimum wage is determined at the regional level, reflecting variations in local labor markets. These disparities are essential for analyzing regional economies and crafting policies that address the unique needs of each area.

The main objective of this research is to deepen understanding of the factors that affect the open unemployment rate in West Java, providing valuable insights through systematic analysis. A comprehensive analysis of the factors affecting the unemployment rate provides policymakers with insights to develop policies that are better aligned with existing conditions.

### Previous Study

Research by Ghinastri & Syafitri (2024) examines the impact of district/city minimum wages in West Java on the open unemployment and poverty rates. Their findings revealed that minimum wages positively influence the open unemployment rate, suggesting that higher wages may lead to increased unemployment due to elevated labor costs. Population size, the number of industries, and investment levels appear to have no significant impact on the open unemployment rate. On the other hand, minimum wage has a negative correlation with poverty, while investment shows no impact on poverty in West Java during the period of 2017-2021. (Luthfiyah Ghinastri & Syafitri, 2024).

Studies were also conducted by Siregar (2020) that investigate how minimum wages impact employment in both the formal and informal sectors, as well as their impact to unemployment rates in Indonesia. The research revealed that overall, an increase in minimum wages tends to reduce employment in both the formal and informal sectors. An increase in minimum wages is expected to decrease unemployment rates, primarily due to a reduction in labor force participation. However, this study identifies that female workers aged 15–24 experience the greatest

losses, making them the most affected group by rising minimum wages (Siregar, 2020).

The previous study was also conducted by Utomo and Prajanti (2022) to find out the determinants of unemployment in West Java by using different variables, namely GRDP, HDI, population, TPAK, and population growth rate with the results showing that only population and GRDP have a significant effect on the unemployment rate (Utomo & Suchatiningsih, 2022). Another study conducted in Yogyakarta Province found that higher economic growth leads to a reduction in the open unemployment rate. On the other hand, the findings revealed that an increase in minimum wages contributes to a rise in the open unemployment rate in Yogyakarta. the study also highlighted that the average length of schooling does not significantly influence open unemployment in the region (Susanto & Pratama, 2021).

Indonesia introduced its minimum wage policy in the early 1970s, but enforcement was weak, and the policy had little impact until the late 1980s, when it began to gain effectiveness (Rama, 2001). During this period, the government abstained from influencing wage decisions related to layoffs. Moreover, it maintained strict control over labor activities, allowing only a single government-approved labor union. As highlighted by Manning (1994), the government and labor unions had limited effective participation in the process of wage setting during that period. However, the early 1990s marked a turning point in Indonesia's labor market with two key developments: the emergence of independent labor unions, despite government attempts to suppress them, and the implementation of regional minimum wage regulations, which have been revised annually (Manning, 1994).

Previous research found that higher minimum wage increases the long-term unemployment rate. Additional findings indicate that expanding minimum wage coverage contributes to a rise in the long-term unemployment rate. Moreover, further analysis reveals consistent trends across other broad labor market indicators, supporting these observations. (Partridge & Partridge, 1999).

Based on the Phillips curve theory by A.W. Phillips (1958) on Mankiw (2000), the Phillips curve is a theoretical model that illustrates the inverse relationship between inflation and unemployment, suggesting that as

unemployment decreases, inflation tends to rise, and vice versa. The correlation between inflation and unemployment is linked to an increase in aggregate demand. According to demand theory, higher demand leads to rising prices (inflation). To meet this demand, producers expand their production capacity by employing more labor, as labor is the primary input for increasing output. Consequently, the heightened demand for labor, coupled with inflation, results in a reduction in unemployment. (Mankiw, 2000).

Unemployment and economic growth play a crucial role in shaping decisions and strategies for policymakers, influencing both social welfare and economic stability. Economic growth is the process of economic activity increasing in value over time (Jones, 1997). Okun (1962) demonstrated through his study of the U.S. economy that there is an inverse relationship between unemployment rates and potential output. This relationship is influenced by factors such as workforce participation, working hours, and productivity changes. The concepts of unemployment and growth are crucial for shaping both economic and social policies.

The research conducted by Soylu et al (2018) found that economic growth negatively affects unemployment in Eastern European countries. Another research done by Utomo and Prajanti (2022) shows that the determinant factor that has a significant effect on unemployment in West Java Province is PDRB or economic growth.

## METHODS

This study employs explanatory research, which aims to identify and understand the relationships between two or more variables through systematic and factual analysis. (Nazir, 2013). Research aims to delve into the specific context of West Java, analyzing how inflation and minimum wage levels correlate with the unemployment rate. By examining panel data and employing regression analysis, the study will seek to uncover patterns and relationships that could inform future economic policy in the region. Panel data analysis uses data from 27 regencies/cities in West Java from 2018 to 2023. We used Stata MP 14 as a statistical analysis tool in this study.

The type of data used in this study is panel data which combines time series data (T) and

cross-sectional data (N). Chalil (2024) suggests that panel data analysis combines cross-section data and time series data, which gives us more information than using only one type of data. This increases the degrees of freedom, enriches the analysis, and helps to better understand the variation that occurs between individuals. The use of panel data analysis also improves estimation efficiency, analyses dynamic relationships, and reduces selection bias. For panel data regression analysis, three techniques are commonly applied: Pooled Least Square (PLS), Fixed Effect Model (FEM), and Random Effect Model (REM). Each method offers unique approaches to analyzing relationships within the data. Furthermore, the analysis will use 95% confidence degree.

The dependent variable is the unemployment rate (UNEM), as well as the independent variables of the minimum wage (UMK), regional inflation (INFLASI), economic growth (PDRB Growth), labor force participation rate (TPAK), average length of schooling (LAMASKLH), and investment (INVEST). The type of data used is secondary data obtained from the West Java Province Central Agency of Statistics. The operational of variable shown by Table 3.

**Table 3. Operational of Variable**

| No | Variable                       | Scale      | Source  |
|----|--------------------------------|------------|---------|
| 1  | Open Unemployment Rate         | %          | BPS     |
| 2  | Regional Minimum Wage          | Rupiah     | BPS     |
| 3  | Inflation Rate                 | %          | BPS     |
| 4  | Economic/PDRB Growth           | %          | BPS     |
| 5  | Labor Force Participation Rate | %          | BPS     |
| 6  | Average Length of Schooling    | Years      | BPS     |
| 7  | Investment                     | Rp Million | DPMPTSP |

Source: Author

Unemployment refers to a situation where individuals who are part of the workforce are actively seeking employment but have not yet succeeded in finding a job. (Sukirno, 2010). Unemployment can be described as encompassing individuals who: 1) are actively searching for work, 2) are preparing to begin new ventures or positions, 3) have stopped looking for jobs due to believing employment opportunities are unattainable, and 4) are waiting to start a job they've already secured while not actively job hunting (Badan Pusat Statistik, 2022).

According to the International Labor Organization (2015), minimum wages are defined as “the minimum amount of remuneration that an employer must pay a wage earner for work performed during a given period, which cannot be lowered by collective labor agreements or individual contracts”. However, in reality, minimum wage policies differ across countries, shaped by political dynamics and considerations about possible drawbacks, such as impacts on employment rates and the competitiveness of businesses dependent on low-wage labor (Wascher, 2015).

The labor force participation rate (TPAK) represents the proportion of the population actively participating in the labor force, encompassing both employed and unemployed individuals, in relation to the working-age population aged 15 and above (BPS, 2022). It represents the proportion of the working-age population that is economically active within a specific country or region (Salsabila et al., 2022).

The inflation rate is calculated using the Consumer Price Index (CPI), which measures the general price level relative to specified base year. The CPI represents an index of the average prices of a variety of goods and services. The inflation rate that is used in this study is the average annual inflation data of regencies/cities in West Java.

Investment data consists of the realization of domestic investment and foreign investment in a given year. This investment realization data comes from the Investment and Integrated Services Agency (DPMPTSP) of West Java Province.

Average Length of Schooling is the average number of years spent by people aged 15 years and above in all types of education they have attended. It can be used to determine the level and quality of education in a region.

The panel data regression analysis focused on examining the impact of PDRB growth, labor force participation rate (TPAK), inflation rate, investment and average length of schooling on the open unemployment rate. According to Wooldridge (2010), the analysis will use 95% confidence degree ( $\alpha = 0,05$ ).

## RESULT AND DISCUSSION

The panel data equation as shown in Picture 2 is derived from previous study conducted by

Prayogo and Satria (2020), Putra et al (2021), Susanto and Pratama (2021), and Utomo and Sucihatiningsih (2022).

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $\text{Unem}_{it} = \alpha + \beta_1 \cdot \ln \text{UMK}_{it} + \beta_2 \cdot \text{Inflasi}_{it} + \beta_3 \cdot \text{pdrbgrowth}_{it} + \beta_4 \cdot \text{TPAK}_{it} + \beta_5 \cdot \text{Investasi}_{it} + \beta_6 \cdot \text{Lamasklh}_{it} + \beta_7 \cdot \text{year\_2019}_{it} + \beta_8 \cdot \text{year\_2020}_{it} + \beta_9 \cdot \text{year\_2021}_{it} + \beta_{10} \cdot \text{year\_2022}_{it} + \beta_{11} \cdot \text{year\_2023}_{it} + \epsilon_{it}$ |
| $i = 1, 2, \dots, n$ and $t = 1, \dots, T$<br>$i$ = number of entities (number of district/city) ,<br>$t$ = number of observation periods (years)<br>$\epsilon_{it}$ = Error term representing unobserved factors in the equation.                                                                                                                                                                                                                                              |

**Picture 2. Panel Data Equation**

Source: processed by author

Summary statistical data from each variable can be seen in Table 4.

**Table 4. Summary of Statistical Data from Each Variable**

| Variable         | Obs | Mean    | Min     | Max      |
|------------------|-----|---------|---------|----------|
| Unem             | 162 | 8.357   | 1.52    | 14.29    |
| Umk              |     | 2938018 | 1558793 | 5176179  |
| Pdrbgrowth       |     | 3.9755  | -3.8    | 9.76     |
| TPAK             |     | 65.37   | 55.74   | 80.15    |
| Inflation        |     | 2.951   | 0.63    | 7.45     |
| Length of School |     | 8.5989  | 5.98    | 11.66    |
| investment       |     | 5532155 | 0       | 61211.31 |

Source: processed by author

The next stage of analysis is involves determining the most efficient model by choosing between the Fixed Effect and Random Effect models by conducting the Hausman Test. The Hausman test results are shown in table 5:

**Table 5. Hausman Test Result**

|                                                     |
|-----------------------------------------------------|
| Test: H0: Difference in coefficients not systematic |
| Chi-square = 24.98                                  |
| Prob>Chi2 = 0.0003                                  |

Source: processed by author

Table 5 presents the result of the Hausman test, which belongs to the category of model specification test for panel data, specifically comparing the fixed effect and random effect models. The Chi-square value of 24.98 with Prob > Chi2 of 0.0003 (< 0.05) indicates that the null hypothesis stating that the difference in coefficients is not systematic is rejected. Therefore, the fixed effect model is selected as the appropriate estimation model in this study. Fixed effects models control unobserved variables that differ between individuals but remain constant over time and allows for a more accurate estimation of the

effect of variables that change over time (Greene, 2003). In addition, the fixed effect model can overcome endogeneity caused by correlation between independent variables and unobserved individual effects (Baltagi, 2008). By controlling for individual fixed effects, the fixed effect model reduces the bias generated by omitted variables that may remain constant over the observation period (Wooldridge, 2010).

Wursten (2017) suggests that before interpreting the results of the analysis it is necessary to test for correlation across panel units (cross-sectional dependence). The results indicate that there is no autocorrelation between units in panel data (Table 6). Multicollinearity is not an issue as long as the correlation between variables remains below 0.75. This ensures that the variables are sufficiently independent, allowing for reliable statistical analysis and accurate interpretation of the results (Wursten, 2017).

**Table 6. Correlation Coefficient Matrix Test Result**

| Variabel         | Unem    | Umk     | Inflation | Pdrb growth |
|------------------|---------|---------|-----------|-------------|
| Unem             | 1.000   |         |           |             |
| Umk              | 0.4867  | 1.000   |           |             |
| Inflation        | -0.1496 | 0.123   | 1.000     |             |
| Pdrb growth      | -0.3888 | -0.052  | 0.3551    | 1.000       |
| TPAK             | 0.5844  | -0.2371 | 0.0229    | 0.0182      |
| Length of School | 0.2221  | -0.483  | 0.0890    | 0.0674      |
| investment       | 0.3674  | 0.7271  | 0.1966    | 0.0180      |

| Variabel         | TPAK    | Length of School | Invest |
|------------------|---------|------------------|--------|
| Unem             |         |                  |        |
| Umk              |         |                  |        |
| Inflation        |         |                  |        |
| Pdrb growth      |         |                  |        |
| TPAK             | 1.000   |                  |        |
| Length of School | -0.2179 | 1.000            |        |
| investment       | -0.173  | 0.0991           | 1.000  |

Source: processed by author

In the analysis, a time fixed effect significance test was also conducted to see the variation between times. Testing time fixed effects on panel data has important significance in regression analysis. With  $H_0$ : time fixed effects are not significant in the model. The time fixed effect significance test results shown in Table 7 show that the probability value (prob > F) is 0.000, indicating that the time fixed effect is statistically significant within the model.

**Table 7. Parameter Test for the Time-Fixed Variable**

|                   |               |
|-------------------|---------------|
| (1)               | 2019.year = 0 |
| (2)               | 2020.year = 0 |
| (3)               | 2021.year = 0 |
| (4)               | 2022.year = 0 |
| (5)               | 2023.year = 0 |
| F(5,125) = 16.78  |               |
| Prob > F = 0.0000 |               |

Table 7 reports the parameter test for the time-fixed variable, which belongs to the category of panel data specification tests, specifically the joint significance test of time fixed effects. The null hypothesis states that the coefficients of the year dummy variables (2019–2023) are jointly equal to zero. The F-statistic of 16.78 with Prob > F = 0.0000 (< 0.05) indicates that the null hypothesis is rejected. This result implies that time fixed effects are jointly significant and, therefore, the model is specified with time fixed effects in the estimation. This also means that the model is statistically significant. The two-way fixed effect model effectively controls for unobserved individual and time effects that may affect the relationship between dependent and independent variables. Panel data analysis using the two-way fixed effect model shows the results as in Table 8.

**Table 8. Panel Data Regression Result**

| Variable         | Coef.    | P >  t  |
|------------------|----------|---------|
| UMK              | 7.864406 | 0.225   |
| Inflation        | -0.16138 | 0.060   |
| PDRB growth      | -0.17725 | 0.013** |
| TPAK             | -0.10279 | 0.002** |
| Length of School | -1.23672 | 0.045** |
| Investment       | -0.02797 | 0.645   |
| Year_2019        | -0.59457 | 0.273   |
| Year_2020        | -0.22559 | 0.855   |
| Year_2021        | -0.00072 | 1.000   |
| Year_2022        | -0.33228 | 0.809   |
| Year_2023        | -1.93027 | 0.282   |
| _Const           | -89.1153 | 0.352   |
| R-sq within      | = 0.7370 |         |
| Prob>F           | = 0.0000 |         |
| rho              | = 0.9010 |         |

Source: processed by author

The Prob>F = 0.0000 value shows that these variables determine the unemployment rate.

The coefficient shows the average change in the unemployment rate in response to a unit change in the independent variable, after controlling for individual and time effects. The analysis results in the table above show that the variables that significantly affect the dependent variable Open Unemployment Rate are GRDP growth, TPAK, and average years of schooling. Meanwhile, UMK (regional minimum wage), investment and inflation do not significantly affect the UNEM. From the analysis results, it can also be seen that UMK (regional minimum wage) has a positive correlation with the open unemployment rate, while inflation, GRDP growth, investment, TPAK, and average years of schooling are negatively related to the open unemployment rate. The interpretation of the analysis result is:

- 1) The regional minimum wage policy has an insignificant correlation with the open unemployment rate. The positive correlations suggest that elevated labor costs may lead to reduced hiring opportunities. The diverse minimum wages across West Java reflect the region's varying economic conditions and the differences in living costs throughout its regions. The minimum wage is determined at the regional level, reflecting variations in local labor markets. Based on empirical data, regencies/cities with high open unemployment rates such as Karawang and Bekasi are also areas with high regional minimum wages because they are industrial centers in West Java. The insignificant relationship between the regional minimum wage and the open unemployment rate may indicate that there are other more powerful variables that affect the open unemployment rate in West Java. The same finding was found: there is an insignificant correlation between the open unemployment rate and the regional minimum wage in East Java Province that may occur due to wage rigidity, where changes in labor demand or supply prevent the market from quickly achieving equilibrium (Prayogo & Satria, 2020). Similar to the study carried out by Mahendra and Parulian (2021), minimum wage has no significant effect on unemployment in Indonesia. High wages can reduce a company's incentive to hire new workers (Mahendra & Parulian, 2021).
- 2) The inflation rate has an insignificant correlation with the open unemployment

rate. This insignificant relationship may be due to the fact that the inflation rate is not driven by an increase in aggregate demand (Wulandari, 2019). This result has in line with research conducted by Putra, et al (2021) that inflation has negative correlation but does not show any significant association with unemployment in Sumatera, Indonesia (Putra et al., 2021). Jamaludin (2021) also found that inflation and unemployment in Indonesia have a direct negative relationship, but it is very low and statistically insignificant. The negative correlation between inflation rate and unemployment is also in accordance with the Philips curve theory that shows a trade-off between inflation rate and unemployment (Jamaludin, 2021).

- 3) The investment has insignificant correlation with the open unemployment rate. This could be due to current investments being more focused on capital-intensive sectors, thus not being able to absorb labor significantly. As mentioned by the World Bank (2016), low job opportunities occur when growth relies on sectors with high capital intensity. In addition, high investment in industrial centers has not been accompanied by high local labor absorption. This may be due to the low competitiveness of local labor compared to labor from outer regions (World Bank, 2016). This result is consistent with Fitrahwaty et al (2024) who found that investment does not show a significant effect on unemployment because it is still dominant in the capital-intensive sector.
- 4) Economic Growth (PDRB growth) has a negative and significant correlation with the open unemployment rate. This means that every 1% increase in GRDP growth will lead to a 0.177% decrease in the unemployment rate, assuming other variables remain constant. In line with Putra et al (2021), economic growth plays an essential role in explaining the variation of the open unemployment rate in Sumatera Island. Leasihwal et al (2022) also found that economic growth significantly reduces unemployment in Indonesia. As previously noted, Okun's law highlights a negative relationship between unemployment and economic growth. It suggests that as economic growth increases, unemployment tends to decrease, reflecting the interconnected

dynamics between economic activity and the labor market. In a regency/city where economic growth is increasing, the number of workers needed to support the production process tends to increase, so the unemployment rate is expected to decline (Soylu et al., 2018).

- 5) The labor force participation rate has a negative and significant correlation with the open unemployment rate. Every 1% increase in TPAK causes a 0.103% decrease in unemployment. A negative relationship that occurs because when there is a population increase, it indicates an increase in the labor force. There is negative relationship occurs between TPAK and the unemployment rate, as the population grows, the labor force expands, making it easier for companies to find workers. This surplus of labor leads to lower wages being offered by employers, as the excess supply of jobs intensifies competition among workers seeking employment (Filiarsari & Setiawan, 2021).
- 6) Average length of schooling/education has a negative and significant correlation with the open unemployment rate. Each 1-year increase in the average years of schooling will decrease the unemployment rate by 1.24%. This indicates that the higher the level of education in a society, the less likely they are to be unemployed, possibly because better skills improve job opportunities. This results in line with Kolomoiets and Petrushenko (1999) that human capital with a good level of education can reduce unemployment (Kolomoiets & Petrushenko, 2017). The research conducted by Karisma & Wardana (2021) also found that average years of schooling negatively affect unemployment in Indonesia (Kharisma & Wardhana, 2021). Similar results were also derived from a study by Hindun (2019), which found that higher education levels have a significant and negative influence on the unemployment rate in Indonesia (Hindun, 2019). Average length of schooling (ALS) is influenced by the number of school dropouts due to inability to pay for education. In addition, there are several other factors that cause children to drop out of school, such as environmental factors, understanding of the importance of education, culture, availability of educational facilities/infrastructure, and others (BPS, 2022).

- 7) The coefficient of determination, represented by R-squared, is a crucial metric in regression analysis. It assesses the quality of the regression model by indicating how well the model explains the variability of the dependent variable, thereby determining its overall effectiveness. The R-squared value of 0.7370 shows that the model explains the variation in the data quite well. 73.70% of the variability in the dependent variable (output) can be explained by the independent variables (inputs) in the model.

### Policy Recommendations

Therefore, we would like to suggest some policy recommendations. Policy recommendations are divided into two main goals: job creation and improvement of human resource quality.

#### 1. Job Creation

Despite the findings indicating that investment does not significantly affect unemployment, in principle, investment can create job opportunities. Empirically, data from DPMPSTP (2024) shows that in 2023, investment realization in West Java reached IDR 210.6 trillion and was able to absorb 253,424 workers. The government needs to increase investment in the real sector to increase job opportunities in West Java, especially for labor-intensive sectors and local labor. This policy can take the form of fiscal incentives or other investment facilities that can be offered to investors, one of which is through the establishment of Special Economic Zones, and others by prioritizing the absorption of local labor. In the context of development, Special Economic Zones (SEZ) have been established to accommodate industrial and economic activities in order to accelerate regional development (Setiawan, et al., 2022). Prioritizing local labor can also encourage an increase in labor force participation rates. There are already three Special Economic Zones in West Java that are expected to absorb local labor and contribute to reducing unemployment.

#### 2. Improvement of Human Resource Quality

Gray (2016) states that by 2025, 50% of workers will need reskilling due to the adoption of new technologies, and two-thirds of the skills that are important today will be obsolete in the next five years. This

highlights the importance of reskilling and upskilling for workers, especially with the rapid advancement of technology, automation, and Artificial Intelligence (AI). This can also contribute to the opportunities for workers to have better jobs. The government can organize various training programs to improve the competence of the workforce in accordance with labor market demand (World Bank, 2016).

According to Yulek (2016), the highest added value occurs in the early stages (innovation/design) and final stages (marketing/distribution networks) of the value chain, while basic manufacturing is in the middle stages, which generate the lowest added value. Industrial policy should encourage the development of high value-added activities such as research and innovation (R&D), product design, branding, and global marketing, so that the industry does not get stuck in low-margin manufacturing activities. The government can collaborate with universities or colleges to increase technological research and innovation that can be a catalyst for the growth of labor demand. Enhancing technological capabilities and innovation is very important because it can increase the value added and competitiveness of the industry. The government also can enhance entrepreneurship training and boost MSME's capacity to expand production and generate more job opportunities.

A study conducted by Kumalasari and Setyowati (2024) found a gap between education and skill levels and the labor market needs in West Java, which has led to high unemployment despite industrial growth. In relation to the length of schooling that most significantly affects the unemployment rate, the government can provide policies such as increasing compulsory education, free education up to high school, scholarship programs and other programs to improve the quality of education in West Java.

According to (Ra et al, 2015), the mismatch between workers' skills and technical abilities and industry needs can lead to unemployment. The existence of this gap in industry needs can cause industries to prefer workers from outside the region, resulting in lower absorption of local

workers. The government can establish vocational schools according to the economic potential in the area. For example, engineering vocational schools for industrial areas or fisheries vocational schools for coastal areas with marine economic potential.

These policy recommendations are formulated by considering the results of our analysis. Each policy chosen requires further study with related stakeholders. The implemented policies also require cooperation, participation, and collaboration of all stakeholders so that they can be implemented effectively and appropriately for public welfare.

## CONCLUSION

West Java still faces unemployment issues. The highest open unemployment rate is found in regencies with the highest investment realization in West Java. This paper attempts to analyze the determinants of the open unemployment rate in West Java using data from 27 districts/cities from 2018 to 2023. The analysis uses two-way fixed effect panel data regression. The results of the analysis show that the regional minimum wage policy, inflation rate and investment have insignificant correlation with the open unemployment rate. Meanwhile, economic growth, labor force participation rate, and average years of schooling have a negative correlation and significant effect on the open unemployment rate. To reduce the open unemployment rate in West Java province, policymakers can formulate policies that focus on two areas: job creation and human resource development.

To further complement studies related to unemployment in West Java, future studies can be expanded in terms of data, research methods, and depth of analysis. It needs a more in-depth study related to the characteristics of the unemployment rate in West Java, mapping the potential of regional leading sectors, mapping training/skill certification in accordance with the labor market needs of each district/city, linking the impact with other regions/provinces in Indonesia, and other studies that support the resolution of labor problems in West Java.

## REFERENCES

- Amrullah, A. (2019). Analisis Determinan Tingkat Pengangguran Terbuka di Pulau Jawa Tahun 2007-2016. *E-Journal Ekonomi Bisnis dan Akuntansi*, 6(1), 43. doi:10.19184/ejeba.v6i1.11074
- Ansar, S., & Mario. (2017). Dampak Sosial Pengangguran Terdidik di Desa Kading Kecamatan Tanete Riaja Kabupaten Barru. 10(2), 134–143. <http://eprints.unm.ac.id/id/eprint/6708>
- Badan Pusat Statistik. (2022). <https://www.bps.go.id/id>.
- Baltagi, B. (2008). *Econometric Analysis of Panel Data*. John Wiley & Sons.
- Chalil, T. M. (2024). *Panel Data Regression*. Materi Kuliah
- Filiarsari, A., & Setiawan, A. H. (2021). Pengaruh Angkatan Kerja, Upah, PDRB, dan Pendidikan Terhadap Tingkat Pengangguran di Provinsi Banten Tahun 2002-2019. *Diponegoro Journal of Economics*, 10(2). <https://doi.org/https://doi.org/10.14710/djoe.31615>
- Gray, A. (2016). The 10 skills you need to thrive in the Fourth Industrial Revolution. World Economic Forum, January 19, 2016. <https://www.weforum.org/agenda/2016/01/the-10-skills-you-need-to-thrive-in-the-fourth-industrial-revolution/>
- Greene, W. (2003). *Economic Analysis*. Pearson Education India.
- Hindun, H. (2019). Impact of Education Level on Unemployment Rate in Indonesia. *International Journal of Educational Research Review*, 4(3), 321–324. <https://doi.org/https://doi.org/10.24331/ijere.573866>
- Jamaludin, N. (2021). Inflation, Unemployment and Labor Force Change in Indonesia: What Does the Connection? *Krisnadipayana International Journal of Management Studies*. <https://doi.org/https://doi.org/10.35137/kijms.v1i2.708>
- Jones, C. (1997). *Introduction to Economic Growth*. <https://doi.org/https://doi.org/10.4324/9781315722467-1>.
- Kharisma, B., & Wardhana, A. (2021). Determinan Tingkat Pengangguran Antar Provinsi di Indonesia. *E-Jurnal Ekonomi Dan Bisnis Universitas Udayana*, 10(5), 241–250. <https://doi.org/10.24843/EEB.2021.v10.i05.p01>
- Kolomoiets, U., & Petrushenko, Y. (2017). The human capital theory. Encouragement and criticism. *SocioEconomic Challenges*, 1(1), 1–4.
- Leasiwal, T. C., Oppier, H., Tutupoho, A., & Palloma, A. (2022). Examining The Effects of Economic Growth on Unemployment in Indonesia. *Journal of Social Science*, 3(5), 972–985. <https://doi.org/10.46799/jss.v3i5.389>
- Luthfiyah Ghinastri, S., & Syafitri, W. (2024). Pengaruh Upah Minimum Kabupaten/Kota (UMK) Terhadap Tingkat Pengangguran Terbuka (TPT) Dan Kemiskinan. *Journal of Development Economic and Social Studies*, 3(1), 72–83.
- Mahendra, A., & Parulian, T. (2021). *Analysis of the Effect of Exchange Rates, Economic Growth and Minimum Wages on Unemployment with Inflation as a Moderating Variable in Indonesia*. 8, 439–445.
- Mankiw, G. (2000). *Macroeconomics*. Erlangga.
- Manning, C. (1994). What has Happened to Wages in the New Order? *Bulletin of Indonesian Economic Studies*, 30(3), 73–114. <https://doi.org/https://doi.org/10.1080/00074919412331336687>
- International Labour Organization. (2015). *Minimum Wage Policy Guide*. [www.ilo.org/minimumwage](http://www.ilo.org/minimumwage)
- Nazir, M. (2013). *Kualitatif, Memahami Penelitian Pendidikan, Metode Penelitian Besar, Kamus Indonesia, Bahasa Departemen, Pusat Bahasa*. 15(1), 18–33.
- Partridge, M. D., & Partridge, J. S. (1999). Do Minimum Wage Hikes Reduce Employment? State-Level Evidence from the Low-Wage Retail Sector. *Journal of Labor Research*, 20(3), 393–413.
- Prayogo, S. A., & Satria, D. (2020). Analisis Faktor-Faktor yang Mempengaruhi Tingkat Pengangguran Terbuka Kabupaten/Kota di Provinsi Jawa Timur Tahun 2014-2018. *Jurnal Ilmiah Mahasiswa FEB*, 8(2).
- Putra, R., Purmini, P., & Sukiyono, K. (2021). Economic Growth, Inflation, and Regional Minimum Wage: An Empirical Investigation of the Open Unemployment Rate in Sumatera, Indonesia. *Journal of Agri Socio Economics and Business*, 3(2), 109–122. <https://doi.org/https://doi.org/10.31186/jaseb.3.2.109-122>
- Rafiee, E., Shabani, Z. D., & Hadian, E. (2024). Driving factors on unemployment in Iran's provinces: Do temporal and spatial dynamics matter? *Regional Science Policy and Practice*, 16(2), 12715. <https://doi.org/10.1111/rsp3.12715>
- Rama, M. (2001). *The Consequences of Doubling the Minimum Wage: The Case of Indonesia*. 54(4), 864–881. <https://doi.org/https://doi.org/10.1177/001979390105400407>
- Salsabila, N. A., Andriani, S., Mirisda, M., & Nohe, D. A. (2022). Analisis Pengaruh Tingkat Partisipasi Angkatan Kerja dan Indeks

- Pembangunan Manusia Terhadap Tingkat Pengangguran Terbuka Menggunakan Regresi Probit Dan Logit. *Prosiding Seminar Nasional Matematika Dan Statistika*, 2.
- Setiawan, E., Prasetyawati, E., & Salim, W. A. (2022). Bitung Special Economic Zone (SEZ): A Dynamics Study of Establishment and Development Processes. *Jurnal GeoEco*, 8(2), 220-37.
- Siregar, T. H. (2020). Impacts of minimum wages on employment and unemployment in Indonesia. *Journal of the Asia Pacific Economy*, 25(1), 62–78. <https://doi.org/10.1080/13547860.2019.1625585>
- Soylu, Ö. B. (2018). Economic growth and unemployment issue: Panel data analysis in Eastern European Countries. *Journal of International Studies*, 11(1). <https://doi.org/10.14254/2071-8330.2018/11-1/6>
- Sukirno, Sadono. (2010). *Mikro Ekonomi Teori: Pengantar*. Rajawali Press.
- Susanto, J., & Pratama, M. A. W. (2021). Determinan Tingkat Pengangguran Terbuka di D.I Yogyakarta. *Develop*, 5. <https://doi.org/10.25139/dev.v5i1.3689>
- Utomo, B. ., & Sucihatiningsih, P. (2022). Determinant Analysis of Open Unemployment Rate in West Java Province. *Journal of Economic Education*. <https://doi.org/10.15294/JEEC.V11i2.68641>
- Wascher, W. (2015). Minimum Wages. *International Encyclopedia of the Social & Behavioral Sciences*, 15(2), 561–565.
- Wooldridge, J. M. (2010). *Econometric Analysis of Cross Section and Panel Data*. The MIT Press.
- World Bank. (2016). Indonesian Economic Transformation and Employment.
- Wulandari,et al. (2019). Nexus between Inflation and Unemployment: Evidence from Indonesia. *Journal of Asian Finance, Economics and Business* Vol 6 No 2 , 269-275.
- Wursten, J. (2017). Five ways to detect correlation in panels. *23rd London Stata User Group Meeting*.
- Yülek, M.A. (2016). On the Middle-Income Trap, the Industrialization Process and Appropriate Industrial Policy. *J Ind Compet Trade* 17, 325–348 <https://doi.org/10.1007/s10842-016-0237-9>
- Zheng, D.Z. (2015). Special Economic Zones: Lessons from the Global Experience. PEDL Syntesis Paper Series No 1.

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