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# THE IMPACT OF ECONOMIC GROWTH, FOREIGN INVESTMENT, WAGES, AND HUMAN DEVELOPMENT INDEX ON EDUCATED UNEMPLOYMENT

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**ABSTRACT**
This study aims to measure four independent variables and one dependent variable using secondary data in the form of panel data comprising 27 districts/cities in a cross-section and a time series over 5 years. The data analysis method employed is panel data regression with the random effects method. Eviews version 12 was utilized for data processing, including testing classical assumptions, hypothesis testing, and testing the Adjusted coefficient of determination (R2). The research findings indicate significant relationships between specific variables and educated unemployment. Economic Growth negatively and significantly impacts educated unemployment, demonstrating its ability to decrease educated unemployment in the region. Minimum District Wage positively and significantly influences educated unemployment, implying that increasing UMK in an area can elevate the number of educated unemployed individuals. Additionally, the Human Development Index (HDI) exerts a negative and significant effect on educated unemployment, suggesting that higher HDI can reduce educated unemployment. However, foreign investment does not significantly affect educated unemployment. Overall, the study shows that these four independent variables explain 67.8% of educated unemployment, while the remaining 32.2% is influenced by factors beyond the study's scope.

**Keywords:** Economic Growth; Foreign Investment; MSE; HDI; Educated Unemployment.

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## INTRODUCTION

A problem that is very difficult for every country to avoid is unemployment. Unemployment is the difference between the level of the labour force and the level of employment opportunities; if the supply of labour is higher than the demand for labour, then this can cause an increase in the number of unemployed (Yuksel & Adali, 2017). The main cause of unemployment is the imbalance between demand and supply of labour (Alam et al., 2020).

The increasing number of unemployed is also considered a government failure to improve society's welfare. The increasing number of people who do not have jobs can trigger increasing poverty rates, which will affect a country's economy. Thus, unemployment is a major factor in a region's economy because it can slow down the pace of a country's economy (Manaa & ul Haq, 2020).

The issue of unemployment is a crucial problem and is also very worrying for every region, including West Java Province. According to Kata Data (2022), it is reported that West Java is the province with the highest number of unemployed as of February 2022 at 8.35% of the total population, after Banten Province at 8.53% of the total population. Excessive unemployment levels in a region negatively impact the economy, causing unstable economic conditions (Maqbool et al.,

2013). For example, increasing the number of poverty and the amount of government spending, low per capita income, and decreasing tax revenues.

The educated unemployed category dominates the number of unemployed in West Java Province. The educated unemployed are people who have obtained a secondary or higher level of education and are looking for or available for work (Reimeingam, 2014). Due to the crisis in the job market, graduates' lives have become more difficult than ever (Aktar et al., 2021). This condition occurs because competition for labour is increasing while the number of available jobs is increasingly limited. Therefore, this research focuses on the educated unemployed, high school/vocational school graduates, and above. Data on the comparison of educated unemployment with open unemployment is as follows.

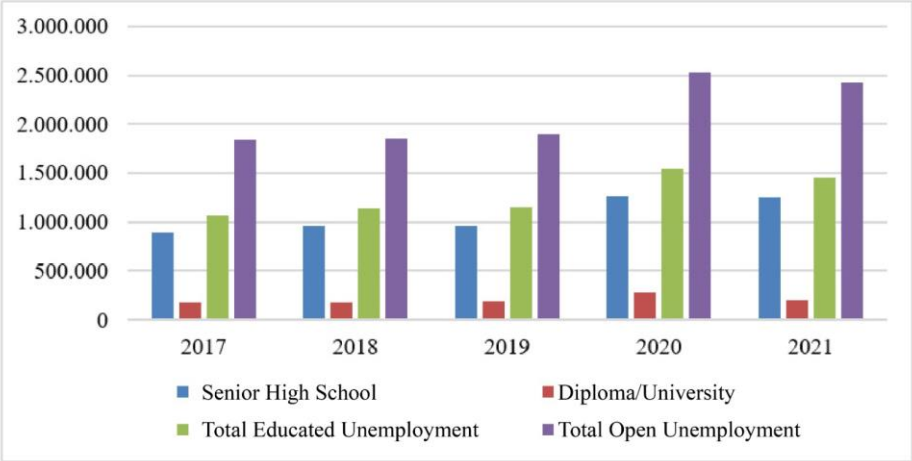


**Figure 1. Data on the number of unemployed in West Java Province 2017-2021**
Source: Survey data from BPS West Java Province (2022)

Figure 1 shows that the number of open unemployed in West Java Province from 2017 to 2021 continues to increase. The highest increase occurred in 2020, from 1,901,498 to 2,533,076, in other words, an increase of 34.2%. This increase was caused by Covid 19, which caused the economy to experience a contraction, so many employees were laid off. From 2017 to 2021, it shows that the number of unemployed in this province is dominated by educated high school/vocational school graduates and diploma/university graduates. On average, the number of educated unemployed is 1,271,129, or 60.2% of the total open unemployment. It is a very worrying condition that many high school/vocational school and diploma/university graduates considered skilled workers still have not found work.

Widowati et al. (2022) state that educated unemployment is a serious problem. This is when many educated people do not have jobs, which can increase the country's socioeconomic chaos. Socially, educated unemployment can hinder a country's economic development, reduce productivity, and increase social inequality. Four factors are thought to influence the number of educated unemployed, namely: 1) Economic Growth as measured through Gross Regional Domestic Product (GRDP), foreign investment, Regency/City Minimum Wage, and Human Development Index (HDI). Data on Economic Growth, foreign investment, MSEs, and HDI are as follows.

**Table 1 . Trends in GDP Growth, Foreign Investment, MSEs, and HDI in West Java Province**

| Category | 2019 | 2021 | Growth |
|---|---|---|---|
| GRDP (%) | 5.02% | 3.74% | -25.50% |
| Foreign Investment (Rp Million) | 3,267.25 | 2,821.42 | -13.65% |
| UMK (Rp. Thousand) | 2,731,081 | 3,073,079 | 12.52% |
| HDI (Unit) | 72.03 | 72.45 | 0.58% |

Source: Survey data from BPS West Java Province (2022)

Table 1 shows that the average GRDP growth in 2021 has decreased from 5.02% in 2019 to 3.74% in 2021, or a decrease of 25.50%. On average, foreign investment decreased from IDR 3,267.25 billion in 2019 to IDR 2,821.42 billion in 2021 or a decrease of 13.65%. On average, MSEs have increased from IDR 2,731,081 in 2019 to IDR 3,073,079 in 2021 or 12.52%. Meanwhile, the HDI has increased from 72.03 in 2019 to 72.45 in 2021 or an increase of 0.58%.

Economic growth can produce high commodity demand shocks (Wang & Liao, 2022). The soaring demand for these commodities can also encourage companies to increase their production capacity so that the demand for educated workers will increase. This can reduce the number of educated unemployed. Previous research results prove that high economic growth can reduce the number of educated unemployed (Lativa & Susilastuti, 2022; Kinasih & Nihaya, 2022; Yunitasari et al., 2021; Chris, 2015). However, contrary to the research results by Alam et al. (2020), economic growth can increase unemployment. Meanwhile, according to (Dachito et al., 2021), Magazzino (2014) states that economic growth does not affect educated unemployment.

Foreign investment is investment from abroad that can help the government develop and establish new companies ( Sadikova et al., 2017). Projects funded by foreign investors generate more market share of both skilled and unskilled labour (Irpan et al., 2016). Increasing employment opportunities can reduce the number of educated unemployed in the region. The research results by Ma'in et al. (2021) prove that foreign investment can significantly reduce graduate unemployment. However, this differs from the results of research by Eneji et al. (2013), which states that foreign investment does not affect educated unemployment.

Wages are an interesting issue because most of the unemployed prefer the informal sector to fulfil their working life even though they are still looking for other jobs compared to the formal sector, which pays minimum wages (Harahap, 2018). Wage determination in this research focuses on the Regency/City Minimum Wage (UMK). The higher the UMK setting in an area can attract the interest of prospective workers to apply for jobs, thereby increasing job competition. Meanwhile, the amount of energy required is very limited. Regions with a high MSE can increase operational costs for companies, especially employee salary costs. This condition impacts Termination of Employment (PHK) so that the number of educated unemployed increases. The results of research by Lativa and Susilastuti (2022) and Setyadi et al. (2019) show that the number of educated unemployed can be increased by increasing the minimum wage. However, Yunitasari et al. (2021) and Adesola et al. (2017) prove that the minimum wage does not affect educated unemployment.

Another factor that influences educated unemployment is HDI. The Human Development Index (HDI) measures how people obtain health, income and education (Assa, 2021). The higher the HDI in a region, the more human resources that have graduated with superior competencies and economic expansion so that it can reduce the number of educated unemployed. Previous research

results prove that HDI can reduce the number of unemployed (Auliya & Agusalim, 2022; Soekapdjo & Oktavia, 2021 ). However, contrary to the research results by Widowati et al. (2022), HDI does not affect educated unemployment.

Referring to the previous explanation regarding the problem of educated unemployment in West Java Province, which is increasing and difficult to avoid because it can increase socio-economic chaos in the province. Educated unemployment, in particular, refers to a situation where highly educated and qualified individuals cannot find suitable employment opportunities. Educated unemployment is a problem in many countries worldwide and has economic and social implications. Therefore, exploring the factors influencing educated unemployment to develop policies and measures to address this problem effectively is very important. Therefore, this research aims to analyze economic growth, foreign investment, wages, and the human development index on educated unemployment in West Java province for 2017-2021. The benefit of this research is that it is hoped that it will become reference material and references for readers to carry out further research, especially related to the factors that influence educated unemployment, and it is also hoped that the research results can contribute ideas to the government, especially the West Java Provincial Government in determining employment policies. , as well as being a consideration for the central and regional governments, especially the West Java Provincial governments, in formulating policies to reduce educated unemployment.

## METHOD

This research uses secondary data, panel data with a cross-section of 27 districts/cities and a time series for 5 years from 2017 to 2021. Panel data is a combination of time series data and cross-section data (Widarjono, 2013). The approach in this research uses quantitative research. According to Cooper & Schindler (2014), quantitative data is a type of research that is measured through a set of numbers to obtain information; then, these numbers can be processed statistically through the Eviews Program version 12. The data used in this research is educated unemployment data, processed from a survey on the West Java Province Central Statistics Agency website based on data on the State of the Labor Force in West Java Province from 2017 to 2021. This research was conducted in West Java Province, involving 18 Regencies and 9 Cities in the province. The research period was carried out from December 15 2022, to March 30 2023, from preliminary research until data collection for processing. The data analysis technique used is model selection, such as the Chow test, Hausman test, Lagrange-Multiplier (LM) test, and classical assumption test and hypothesis test.

## RESULTS AND DISCUSSION

### Panel Data Regression Test

The initial step taken in this research was to collect data from 18 districts and 9 cities obtained from BPS West Java Province for the 2017-2021 period with the variables Economic Growth, Foreign Investment, Wages, HDI and educated unemployment. Then, after collecting the data, proceed with describing the research variables with descriptive statistics consisting of average, standard deviation, minimum and maximum values.

Next, panel data regression testing was carried out with three procedures for selecting the best model, namely the Chow test to choose between CEM or FEM, the Hausman test to choose between FEM or REM, and the Lagrange multiplier (LM) test, which was used to choose between CEM or REM. The results obtained were that the Chow test's F-calculated probability value was 0.0000, where < sig. 0.05. This means the Fixed Effect Model is more suitable than the Common Effect Model. Then, continuing by carrying out the Hausman test, the random cross-section probability value was 0.1810, where > sig.0.05, which means the Random Effect model is more suitable than the Fixed Effect Model. So, it is necessary to carry out the next test, namely the LM test; based on the results of the LM test, the Breusch-Pagan Cross-section probability value is 0.000, where < sig. 0.05 means the Random Effect Model is more suitable than the Common Effect Model. This results in the conclusion that the more appropriate model is the Random Effect Model.

The next step is to carry out the classical assumption test, which consists of four tests: normality, multicollinearity, heteroscedasticity, and autocorrelation. The first classical assumption test is the normality test, and it is known that the probability value is 0.120891 so that the residuals are normally distributed. The second classical assumption test, namely the multicollinearity test, concluded that there was no high correlation between independent variables (above 10). This means that multicollinearity does not occur. Then, the next test, namely heteroscedasticity, obtained a probability value for each independent variable above 0.05, meaning there were no cases of heteroscedasticity. Furthermore, the autocorrelation test obtained a value of dw=2.198 so that dU<dw<4-dU (1.7802<2.198<2.220), so it can be concluded that there is no case of autocorrelation.

After carrying out the classical assumption test, the next step is hypothesis testing consisting of the t-test, F-test, and R2 determination. In the t-test, only the Foreign Investment variable ($X_2$) does not have a partial positive effect on Educated Unemployment (Y), with a coefficient value of Foreign Investment ($X_2$) of 0.376599. So, hypothesis 2 ($H_2$) is rejected. Meanwhile, based on the results, the variables Economic Growth ($X_1$), Wages ($X_3$), and HDI ($X_4$) can be concluded that they have a partial effect on Educated Unemployment.

The F test results show that the variables Economic Growth ($X_1$), Foreign Investment ($X_2$), Wages ($X_3$), and HDI ($X_4$) simultaneously influence Educated Unemployment (Y) because of the prob value. The result obtained is 0.000, meaning it is smaller than 0.05. The coefficient of the determination test obtained a figure of 0.945403. This means that the contribution of all independent variables (Economic Growth ($X_1$), Foreign Investment ($X_2$), Wages ($X_3$), and HDI ($X_4$) in explaining the dependent variable (Educated Unemployment (Y) is 94.5%. Moreover, the remaining 5.5% is explained by other variables outside this research model.

This analysis design is carried out by processing the data that has been collected and then analyzing it using statistical tools. Panel data regression has a development of linear regression with the Ordinary Least Square (OLS) method, which has specificities in data type and analysis objectives. Regarding data type, panel data regression has cross-section and time series data types. The cross-section nature of data is shown by data that consists of more than 1 entity, and then the time series nature is shown by more than 1-time observation.

**Selection of Panel Data Estimation Model Techniques**

There are three procedures in testing the selection or suitability of modelling that will be used to select a panel data regression model, namely:

a) A statistical test is used to choose between CEM or FEM or Chow test.
b) The Hausman test is used to choose between FEM or REM.
c) The Lagrange multiplier (LM) test is used to choose between CEM or REM.

**1. Test Chow**

The Chow test chooses the appropriate method between Common Effect Mode or Fixed Effect Mode. This test follows the F-statistic distribution.

The hypothesis used in this research is as follows:

$H_0$ : Then the model is used. Common Effects

Ha: Then use Fixed Effect mode and continue testing Hausman

If the F-calculated value is greater than the F-table value, it is considered significant and rejects H0. In other words, accepting Ha, which states that the estimate with Fixed Effect Mode I is better than the estimate with Common Effect Mode I.

The guidelines used in drawing Chow test conclusions are:

a. If the value of probability F ≥ 0.05 means $H_0$ is accepted, then the model is used Common Effects.
b. If the probability value F < 0.05 means $H_0$ is rejected, then model is used Fixed Effect and continued with the Hausman test to choose whether to use model Fixed Effect or Random Effect.

**Table 1. Chow test**

Redundant Fixed Effects Tests
Equation: Untitled
Cross-section fixed effects test

| Effects Test | Statistics | df | Prob. |
|---|---|---|---|
| Cross-section F | 16.160240 | (26,104) | 0.0000 |
| Chi-square cross-section | 218.351431 | 26 | 0.0000 |

Source: 2023 data processing

Based on the results of the Chow test, the F-calculated probability value is 0.0000, where < sig. 0.05. This means the Fixed Effect Model is more suitable than the Common Effect Model.

**2. Hausman test**

The Hausman test is used to choose the best approach between the Random Effect Model (REM) and Fixed Effect Model (FEM) approaches in estimating panel data. The basis for decision-making is as follows:

a. Suppose the probability value for a random cross-section is > 0.05 significant value. $H_0$ is accepted in that case, so the most appropriate model to use is the Random Effect Model (REM).
b. If the probability value for a random cross-section is <0.05 significant, then H0 is rejected, so the most appropriate model to use is the Fixed Effect Model (FEM).

**Table 2. Hausman test**

Correlated Random Effects - Hausman Test
Equation: Untitled
Cross-section random effects test

| Test Summary | Chi-Sq. Statistics | Chi-Sq. df | Prob. |
|---|---|---|---|
| Random cross-section | 6.253750 | 4 | 0.1810 |

Source: Data Processing 2023

Based on the Hausman test results, the random cross-section probability value is 0.1810,> 0.05. This means the **Random Effect Model** is more appropriate than the Fixed Effect Model.

**3. LM Test**

the test aims to determine the best estimation model between the CEM and REM models. LM test calculations were carried out using the Breusch-Pagan method. Hypotheses in the LM test include :

a. If the Breusch-Pagan Cross-section value ≤ significance 0.05, reject $H_0$, meaning the Random Effect Model (REM) is selected.
b. If the Breusch-Pagan Cross-section value ≥ significance 0.05, then accept $H_0$, that is, the Common Effects Model (CEM) selected.

**Table 3. LM Test**

Lagrange Multiplier Tests for Random Effects
Null hypothesis: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

| | Test Hypothesis | | |
|---|---|---|---|
| | Cross-section | Time | Both |
| Breusch-Pagan | 137.4160 | 1.344587 | 138.7606 |
| | (0.0000) | (0.2462) | (0.0000) |

Source: Data Processing 2023

Based on the LM test results, the Breusch-Pagan Cross-section probability value was equal to 0.000 where < sig. 0.05. This means the **Random Effect Model** is more appropriate than the Common Effect Model.

**4. Results of Panel Data Regression Model Selection**

After looking at the three test results for selecting the panel data regression model that had been tested, the researchers concluded that the more appropriate model was the Random Effect Model. The regression equation model and summary of research results are as follows.

**Table 4. Random Effect Model Results**

| Variables | Coefficient | Std. Error | t-Statistics | Prob. |
|---|---|---|---|---|
| C | 27434.91 | 20529.01 | 1.336397 | 0.1838 |
| Economic growth | -4.688526 | 1.229111 | -3.814565 | 0.0002 |
| Foreign Investment | -0.080902 | 0.540808 | -0.149595 | 0.8813 |
| Wages | 22.58810 | 2.888918 | 7.818878 | 0.0000 |
| HD | -852.2376 | 298.9419 | -2.850847 | 0.0051 |

Source: 2023 data processing

**$PT = 27434.91 + 4.688526\ Economic\ Growth_{i.t} - 0.080902\ Foreign\ Investment_{i.t} + 22.58810\ Wages_{i.t} - 852.2376\ HDI_{i.t}$**

**Classic assumption test**

**1. Normality test**

The classic normality test is carried out to test whether the regression model's residual values are normally distributed. If the probability value is above 0.05, the data in the equation is normally distributed. Test results can be seen:

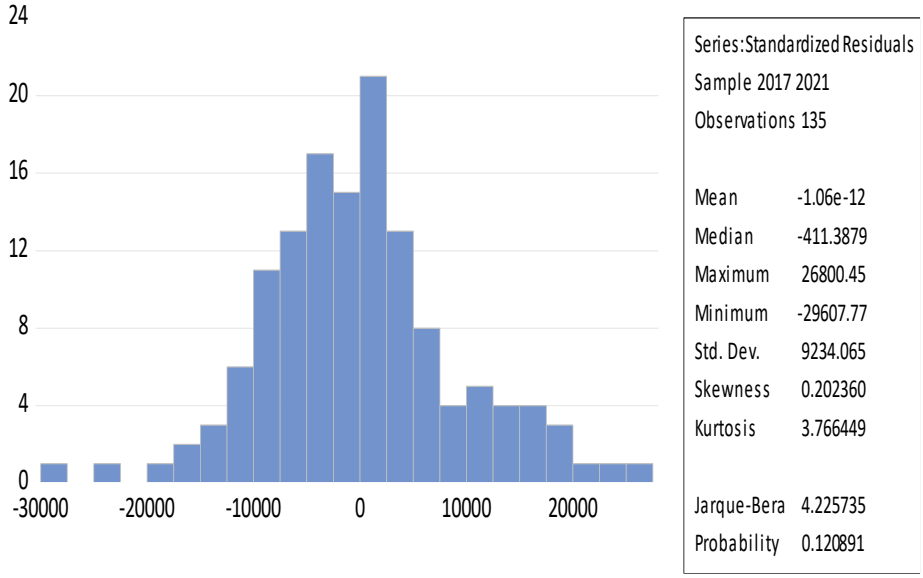


**Figure 8. Normality Test**

Source: 2023 data processing via *Eviews* version 12

Based on the normality test in Eviews 12 in Figure 4.1, it can be seen that the normality test produces a probability value of 0.120891 so that the residuals are normally distributed.

**a. Multicollinearity Test**

The multicollinearity test was carried out to determine whether or not there was a correlation between independent variables. A regression model that is said to be good should not have any correlation between independent variables. If a VIF value above 10 is found, it is suspected that there is multicollinearity in the equation model. Test results can be seen:

**Table 5. Multicollinearity Test**

| | Coefficient | Uncentered | Centred |
|---|---|---|---|
| Variables | Variance | VIF | VIF |
| C | 5.34E+08 | 159.0174 | NA |
| Economic growth | 3.644991 | 4.953995 | 2.648287 |
| Foreign Investment | 0.172601 | 2.550322 | 2.150002 |
| Wages | 8.046426 | 19.75825 | 1.982520 |
| HDI | 129902.2 | 189.2771 | 1.239792 |

Source: 2023 data processing via *Eviews* version 12

Based on the results from Table 5, the results of the multicollinearity test state that if there is no high correlation between independent variables (Economic Growth, Foreign Investment, Wages, and Human Development Index) where the VIF value is less than 10, then

H0 is accepted. Thus, there is no multicollinearity problem between the independent variables in the regression model.

**b. Heteroscedasticity Test**

The heteroscedasticity test violates classical assumptions where disturbance is detected in the regression equation model. Test heteroscedasticity can be done using the Glejser test, which regresses the absolute value of the residual on the independent variable.

Based on decision-making:

1) If the probability value is > 0.05, then Ha is rejected, and Ho is accepted, which means there is no heteroscedasticity problem.
2) If the probability value is <0.05, Ho is rejected, and Ha is accepted, meaning there is a heteroscedasticity problem.

The following are the results of the heteroscedasticity test which can be seen:

**Table 6. Heteroscedasticity Test**

Dependent Variable: ABSRESSION
Method: Panel EGLS (Cross-section random effects)
Date: 08/17/23 Time: 01:38
Sample: 2017 2021
Periods included: 5
Cross-sections included: 27
Total panel (balanced) observations: 135
Swamy and Arora estimator of component variances

| Variables | Coefficient | Std. Error | t-Statistics | Prob. |
|---|---|---|---|---|
| C | 7163,798 | 15462.98 | 0.463287 | 0.6439 |
| Economic growth | 3.222665 | 423.2471 | 0.007614 | 0.6790 |
| Foreign Investment | -0.044732 | 0.366120 | -0.122178 | 0.9029 |
| Wages | 6.921003 | 2.122270 | 3.261132 | 0.1400 |
| HDI | -161.9488 | 232.1549 | -0.697590 | 0.4867 |

Source: 2023 data processing via *Eviews* version 12

Based on these tests, the prob. of each independent variable was obtained above 0.05. This means that there are no cases of heteroscedasticity.

**Table 7. Interpretation of the Glejser Test**

| Independent Variable | Prob. | Decision |
|---|---|---|
| Economic growth | 0.5790 | Heteroscedasticity does not occur |
| Foreign Investment | 0.9029 | Heteroscedasticity does not occur |
| Wages (UMK) | 0.1400 | Heteroscedasticity does not occur |
| Human Development Index (HDI) | 0.4867 | Heteroscedasticity does not occur |

Source: 2023 data processing via *Eviews* version 12

**c. Autocorrelation Test**

The autocorrelation test aims to determine whether, in a model, there is a correlation between disturbing errors in periods t and t-1. The results of the autocorrelation test can be seen as follows:

**Table 8. Autocorrelation Test**

| | |
|---|---|
| Durbin-Watson stat | 1.890993 |

Based on Table 8, it can be seen that the Watson Durbin value is between dU and 4-dU with n=135 and K=4. The value of dw=1.891 so that dU < dw < 4-dU (1.7802 < 1.891 < 2.220) means it can be concluded that there is no case of autocorrelation.

**Hypothesis testing**

Hypothesis testing consists of a partial test (t test), simultaneous test (F test), and Adjusted coefficient of determination test ($R^2$) with estimates for panel data linear regression using the Fixed Effect Model (FEM) as follows:

**1. Partial test (t-Test)**

According to Ghozali (2018), the t-test is a test to see the correlation between independent and dependent variables, carried out individually (partially). The t-test was used with a significance level of 0.05 in this study.

**Table 9 . Partial Test (t-Test)**

| Variables | Coefficient | Std. Error | t-Statistics | Prob. |
|---|---|---|---|---|
| C | 27434.91 | 20529.01 | 1.336397 | 0.1838 |
| Economic growth | -4.688526 | 1229.111 | -3.814565 | 0.0002 |
| Foreign Investment | -0.080902 | 0.540808 | -0.149595 | 0.8813 |
| Wages | 22.58810 | 2.888918 | 7.818878 | 0.0000 |
| HDI | -852.2376 | 298.9419 | -2.850847 | 0.0051 |

Source: 2023 data processing via *Eviews* version 12

Based on Table 9 above, it can be seen from the results of the t-test the influence of the variables Economic Growth ($X_1$), Foreign Investment ($X_2$), Wages ($X_3$), and HDI ($X_4$) on the Educated Unemployment variable (Y). Based on the table above, the prob value can be known. The Economic Growth variable ($X_1$) is 0.0002 with a coefficient value -4.689. This means that the Economic Growth variable ($X_1$) partially has a negative and significant effect on Educated Unemployment (Y). If the Economic Growth variable ($X_1$) increases by one per cent, Educated Unemployment (Y) will decrease by 4.689%.

Meanwhile, the value of prob. the Foreign Investment variable ($X_2$) is 0.8813. This means that the Foreign Investment variable ($X_2$) does not have a positive effect on Educated Unemployment (Y) partially with a coefficient value of Foreign Investment ($X_2$) of -0.080902. So, in this way, hypothesis 2 ($H_2$) is rejected.

Prob value. On the Wage variable ($X_3$) of 0.000. This means that the Wage variable ($X_3$) has a positive effect on Educated Unemployment (Y) partially with a Wage coefficient value ($X_3$) of 22.58810. So, hypothesis 3 ($H_3$) is accepted.

Prob value. The HDI variable ($X_4$) is 0.0051. This means that the HDI variable ($X_4$) harms Educated Unemployment (Y) partially with an HDI coefficient value ($X_4$) of -852.2376. Thus, hypothesis 4 ($H_4$) is accepted.

**2. Simultaneous Test (F Test)**

The F test determines the magnitude of all independent variables' influence on the dependent variable. Alternatively, in other words, the F test (simultaneous test) is used to determine whether all independent variables influence the dependent variable together.

**Table 10. Model Test (F Test)**

| | |
|---|---|
| F-statistic | 29.79688 |
| Prob(F-statistic) | 0.000000 |

Source: 2023 data processing via *Eviews* version 12

The F test is useful in simultaneously measuring the influence of independent variables on the dependent variable. The F test results show that the variables Economic Growth ($X_1$), Foreign Investment ($X_2$), Wages ($X_3$), and HDI ($X_4$) simultaneously influence Educated Unemployment (Y) because the prob value obtained is 0.000 meaning it is smaller from 0.05.

**3. Determination Coefficient Test (R2 Test )**

$^2$ test measures the size of the dependent variable that the independent variable can explain. The criteria used for the $R^2$ value are in the form of a percentage:

**Table 11. Determination Coefficient Test (R2 Test)**

| | |
|---|---|
| R-squared | 0.678305 |

Source: Data Processing 2023

The coefficient of determination test obtained a figure of 0.678305. This means that the contribution of all independent variables (Economic Growth ($X_1$), Foreign Investment ($X_2$), Wages ($X_3$), and HDI ($X_4$) in explaining the dependent variable Educated Unemployment (Y) is 67.8% and other variables outside this research model explain the remaining 32.2%.

**The Effect of Economic Growth on Educated Unemployment**

This research analyzes the effect of Economic Growth on educated unemployment in West Java Province from 2017 to 2021. The research results prove that Economic Growth has a *probability value.* 0.0002 < 0.05 means that economic growth statistically affects educated unemployment. The results of this research proved the proposed hypothesis so that $H_1$ could be accepted. Several previous studies support the results of this research, such as research by Yunitasari et al. (2021), which analyzed the relationship between the level of Economic Growth and educated unemployment in Indonesia, which has proven that statistically, Economic Growth can also reduce educated unemployment. Another study was conducted by Chris (2015) in his research in Nigeria, which proved that the two have a significant relationship.

Economic growth in West Java Province can also trigger increased consumption in society, which will encourage some industrial sectors in the region to increase production. Increasing production to meet people's needs can create new job opportunities and can also increase demand for high-skilled workers, which leads to a decrease in the level of educated unemployment. This condition can reduce the mismatch between the skills possessed by workers and the skills required by employers. The research results by Galbraith Hale (2007) found that economic growth was associated with a decrease in the overall unemployment rate, including reducing educated unemployment.

**The Effect of Foreign Investment on Educated Unemployment**

The research results prove that foreign investment has *prob value.* 0.8813 > 0.05 means that foreign investment statistically has no effect on educated unemployment, so $H_2$ is rejected. This study's results align with several previous studies, such as those conducted by Eneji et al. (2013), that foreign investment has no significant effect in reducing educated unemployment. Widowati et

al. (2022) also conducted research in Central Java Province, which failed to prove the effect of foreign investment on educated unemployment. This means that the high or low amount of foreign investment entering West Java Province has no impact on reducing the number of educated unemployed.

The influx of foreign capital can fund new projects, so this requires labour (Irpan et al., 2016). However, in this research, it is proven that the use of foreign capital allows investors to bring in their workforce rather than employing local workers. According to Open Data, West Java (2023) reports that the number of foreign workers from foreign capital absorption in 2021 will be 72,554. This results in minimal opportunities for local workers who have high skills. Besides that, foreign investors may focus on industries that require more low-skilled workers compared to high-skilled workers so that foreign investment does not impact reducing educated unemployment. These results contrast with research by Ma'in et al. (2021), which proves that foreign investment can reduce educated unemployment.

**The Effect of Wages on Educated Unemployment**

The relationship between wages and educated unemployment has a *prob value.* 0.000 < 0.05. These results state that MSEs can significantly influence educated unemployment, so $H_3$ is accepted. Lativa & Susilastuti (2022), in their research in the province of Indonesia, prove that increasing wages can increase the number of educated unemployed. Anjarwati Juliprijanto (2021) confirm that higher wages can significantly increase educated unemployment.

This research proves that wages that are too high can cause job switching and a mismatch between skills and job requirements. If wages are too high, employers may not hire workers with the necessary skills and expertise, leading to a lack of job opportunities for highly skilled workers. This, in turn, may lead to an increase in educated unemployment. In addition, high wages can cause the movement of skilled workers to be replaced by automation (Widowati et al., 2022). This, in turn, may lead to a decline in the rate of job creation, which may exacerbate the problem of educated unemployment.

**The Influence of HDI on Educated Unemployment**

The research results between HDI and educated unemployment have a *prob value.* Equal to 0.0051 < 0.05. These results prove that HDI has a significant effect on educated unemployment. Previous studies support that a higher HDI can reduce the number of educated unemployed. For example, research by Auliya Agusalim (2022) in provinces in Indonesia has proven that HDI can have a significant effect on the educated unemployment variable. Research by Soekapdjo Oktavia (2021) confirms that HDI can reduce the number of educated unemployed.

HDI measures a country's social and economic development and considers life expectancy, education and per capita income (BPS, 2021). HDI can significantly impact educated unemployment (Auliya & Agusalim, 2022) because a higher level of development can increase access to education and training, better job opportunities, and reduce the level of educated unemployment. The method used by the local government is to provide appropriate education and training. Various types of public and private high schools and universities, as well as training institutions, can help reduce the mismatch between the skills possessed by workers and the skills required by employers.

## CONCLUSION

In this study analyzing the influence of Economic Growth, Foreign Direct Investment, Wages, and Human Development Index (HDI) on educated unemployment in West Java Province, several conclusions can be drawn: 1) Economic Growth: The research affirms a significant negative impact of Economic Growth on educated unemployment (with a probability value of 0.0002 < 0.05), supporting the hypothesis (H1). Regions with higher economic growth tend to have lower levels of educated unemployment due to increased job opportunities, particularly in sectors requiring high-skilled labor. This underscores the importance of policies promoting economic growth, business development, entrepreneurship, and investment in education and training. 2) Foreign Direct Investment (FDI): FDI does not significantly affect educated unemployment, as indicated by the probability value of 0.8813 > 0.05, rejecting the hypothesis (H2). This finding aligns with previous studies, suggesting that the influx of foreign investment does not necessarily lead to a decrease in educated unemployment. Policymakers should focus on other factors beyond FDI to address educated unemployment effectively. 3) Wages: The study demonstrates a significant positive impact of Minimum District Wage on educated unemployment (with a probability value of 0.000 < 0.05), confirming hypothesis H3. Higher wages can increase educated unemployment, especially in sectors relying on low-skilled labor. Policymakers should encourage policies supporting high-skilled labor, such as investments in high-tech industries and tailored education and training programs. 4) Human Development Index (HDI): The research proves the significant negative influence of HDI on educated unemployment (with a probability value of 0.0051 < 0.05), supporting hypothesis H4. Higher HDI correlates with better-educated workforce, enhancing adaptability to labor market changes. Policymakers should prioritize investments in education, healthcare, and policies promoting social mobility and economic growth to reduce educated unemployment. In summary, the study underscores the importance of economic growth, improvement in human development indicators, and strategic wage policies to address educated unemployment effectively. Policymakers should focus on creating a conducive environment for business development, promoting high-skilled labor, and investing in education and technology to tackle the challenges of educated unemployment in the region.

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