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DETERMINANTS OF UNEMPLOYMENT RATE IN INDONESIA

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Abstract

This study aims to analyze the effect of population, human development index, minimum wage and education on unemployment in Indonesia. This study uses a quantitative approach with panel data which is a combination of cross-section data from 34 provinces in Indonesia and time series from 2022 to 2024. Data analysis using a panel data regression model using e views software and classical assumption tests. Secondary data was obtained from the Central Statistics Agency and the Ministry of Manpower of the Republic of Indonesia. Based on the results of the research that has been conducted, it was found that there is a negative and significant influence between the human development index and unemployment in Indonesia. Then the population and provincial minimum wages have a negative and insignificant effect on unemployment in Indonesia. And education has a positive and significant effect on unemployment in Indonesia.

***Keywords** : Unemployment, Population, Human Development Index, Minimum Wage, Education.*

Introduction

Indonesia is the fourth most populous country in the world, based on data from the Central Statistics Agency of Indonesia, the population continues to increase every year. Until 2024, the population recorded in Indonesia is 281,603 people. A large population will not directly increase an economy, in fact this can be a serious problem and have an indirect impact on national development. The big challenge faced by many developing countries is the unemployment rate which continues to increase but the limited number of jobs available. Indonesia is one of the countries with a high unemployment rate, this unemployment problem is a condition that cannot be avoided by Indonesia or other countries.

Currently, the unemployment phenomenon is closely related to companies closing or reducing business sectors due to economic or security conditions, regulations that limit investment, restrictions on export and import procedures and so on. Increasing unemployment also has an impact on social and political conditions such as increased crime and political instability. In addition, high unemployment will give rise to new poor people and this will have an impact on state revenues (Febriani et al., 2021)

Unemployment is a significant problem, especially in developing countries like Indonesia. Developing countries often face high unemployment rates due to their large population but limited job opportunities. But this is not the only unemployment problem, the fact is that unemployment is also influenced by many factors such as the human development index, minimum wage and education. Unemployment can generally be defined as a situation where a person who is included in the workforce category who does not have a job and is actively looking for work (Sambaulu et al., 2022) .

Phenomenon unemployment No can released from dynamics amount the population continues to grow increase every year . Growth high population No always accompanied with creation field work that is commensurate , so that cause pressure towards the power market work . In addition , the quality source Power reflected human in The Human Development Index (HDI) also play a role in determine Power competition individual in the world of work . IPM, which includes dimensions education , health and standards live , be indicator important in see how much Ready a population in face challenge employment . Other factors that contribute influence level unemployment is policy wages , especially the Provincial Minimum Wage (UMP). UMP which is too tall can cause obstacle for sector business in recruiting power work , especially in the informal sector and MSMEs, while the UMP is too high low can lower incentive For work and improve number poverty . Education also plays a role role central in absorption power Work . Low level of education often become barrier in access decent and productive work .

Based on the research results from (Siahaan Olindayanti et al., 2022) entitled " Analysis of the Influence of the Human Development Index and Education on the Open Unemployment Rate in North Sumatra Province ", research from (Pangemanan, Kalangi, & Tolosang, 2023) entitled " The Influence of Population and Education on Unemployment in Minahasa Regency in 2010-2020 ", then research from (Saputri & Yefriza,

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2025) entitled "The Influence of Minimum Wages, Human Development Index and Population on the Unemployment Rate in the Riau Islands Province" and research from (Pasuria & Triwahyuningtyas, 2022) entitled "The Influence of the Labor Force, Education, Minimum Wages and GRDP on Unemployment in Indonesia" . There is a relationship between the theory and previous studies that are the source of this research. However, there are different results from previous research studies regarding the final results of the research. So the purpose of this study is to determine partially and simultaneously the influence of population, HDI, minimum wages and education on unemployment in Indonesia. It is hoped that this research can be useful for seeing the picture and thoughts regarding unemployment problems in Indonesia and can be a reference for further research.

Methods

This study uses a qualitative approach to analyze the influence of population, human development index, provincial minimum wage and education on unemployment. This study uses secondary data sources from the Central Bureau of Statistics website . The data used in this study are panel data with a combination of cross-sectional data. section 34 provinces in Indonesia and time series from 2022 – 2024. The data processing techniques used are panel data regression tests using e- views 12 software and classical assumption tests.

Results and Discussions

Results

The results of data processing explain the influence of independent variables on dependent variables. The influence that will be explained in the results of data processing , namely the influence both simultaneously and partially. There are three testing conducted use determine the panel data estimation model then will used For managing panel data, namely the *Chow* Test , the Hausman Test *, and the Lagrange multiplier* Test . The Chow test is used to compare or choose which is the best between *Common Effect Model* (CEM) or *Fixed Effect Model* (FEM). Hausman test was conducted use compare or choose which model is best between *Fixed Effect Model* and *Random Effect Model.* Selected models is *Fixed effect model*

Assumption Test Classic

a. Heteroscedasticity Test

Heteroscedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.527193	3.512143	1.004285	0.3190
JP	5.96E-05	3.49E-05	1.709093	0.0923
IPM	-0.077719	0.095793	-0.811329	0.4202
UMP	-5.63E-08	2.83E-07	-0.198880	0.8430
PENDIDIKAN	0.212856	0.295840	0.719496	0.4745

Effects Specification				

Cross-section fixed (dummy variables)

Root MSE	0.114443	R-squared		0.688316
Mean dependent var	0.181356	Adjusted R-squared		0.508124
S.D. dependent var	0.206002	S.E. of regression		0.144477
Akaike info criterion	-0.752382	Sum squared resid		1.335915
Schwarz criterion	0.225549	Log likelihood		76.37146
Hannan-Quinn criter.	-0.356384	F-statistic		3.819903
Durbin-Watson stat	4.066876	Prob(F-statistic)		0.000001

Source: Results of processing using *Eviews 12*

Based on table 1. It can be seen that the Probability value of the population is 0.09, HDI 0.42, UMP 0.84, and education 0.47. It can be seen that all data are more than 0.05 (> 0.05). So it can be concluded that there is no heteroscedasticity.

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b. Multicollinearity Test

Multicollinearity test is conducted to determine the correlation between independent or free variables. If it is above 0.90 then it can be concluded that multicollinearity occurs. But if it is below 0.90 then there is no multicollinearity.

Table 2. Multicollinearity Test Results

	JP	IPM	UMP	PENDIDIKAN
JP	1	0.137198002	-0.422110173	-0.1738777
IPM	0.137198002	1	0.188356889	0.686518365
UMP	-0.422110173	0.188356889	1	0.430262398
PENDIDIKAN	-0.1738777	0.686518365	0.430262398	1

Source: Results of processing using *Eviews 12*

Based on table 2. It can be seen that the correlation value between population and HDI is 0.137. The correlation value between population and UMP is -0.422. The correlation value between population and education is -0.173. It can be seen that all data are less than 0.90 (<0.90). So it can be concluded that there is no multicollinearity.

Table 3. Significance Test Results

Dependent Variable: PENGANGGURAN
Method: Panel Least Squares
Date: 05/26/25   Time: 20:19
Sample: 2022 2024
Periods included: 3
Cross-sections included: 34
Total panel (balanced) observations: 102

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.62339	8.399531	1.979086	0.0521
JP	-5.46E-05	8.34E-05	-0.654560	0.5151
IPM	-0.460314	0.229095	-2.009275	0.0487
UMP	-1.22E-06	6.78E-07	-1.807785	0.0753
PENDIDIKAN	2.730374	0.707521	3.859071	0.0003

Effects Specification

Cross-section fixed (dummy variables)

Root MSE	0.273698	R-squared	0.964071
Mean dependent var	4.681863	Adjusted R-squared	0.943299
S.D. dependent var	1.451070	S.E. of regression	0.345527
Akaike info criterion	0.991517	Sum squared resid	7.640896
Schwarz criterion	1.969448	Log likelihood	-12.56738
Hannan-Quinn criter.	1.387515	F-statistic	46.41313
Durbin-Watson stat	1.794332	Prob(F-statistic)	0.000000

Source: Results of processing using *Eviews 12*

From this table, a panel data regression equation can be compiled as follows:

Regression Equation

Y = 16.62 + -5.46 X1 + -0.46 X2 + -1.22 X3 + 2.73 X4

Y = Unemployment

X1 = Population

X2 = Human Development Index

X3 = Provincial Minimum Wage

X4 = Education

Based on this equation, it can be explained as follows:

a) The constant value is positive, namely 16.62, this shows that if the variables of population, HDI, UMP and education are constant, then unemployment is 16.62.

b) The regression coefficient of the population variable is negative, which is -5.46. This shows that if the population increases, it will decrease unemployment by 5.46, assuming other independent variables are constant.

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c) The regression coefficient of the HDI variable is negative, which is -0.46. This shows that if the HDI increases, it will decrease unemployment by 0.46, assuming that other independent variables are constant.

d) The regression coefficient of the ump variable is negative, which is -1.22. This shows that if ump increases, it will decrease unemployment by 1.22, assuming other independent variables are constant.

e) The regression coefficient of the education variable is positive, which is 2.73. This shows that if education increases, it will increase unemployment by 2.73, assuming other independent variables are constant.

Simultaneous Significance Test (F Test)
Based on the test results in table 3. The Prob value (F-Statistic) is known to be 0.000000. This shows that the value is smaller than the significance level (<0.05). So H1 is accepted and H0 is rejected. So the population, HDI, UMP, and education simultaneously have a significant effect on unemployment.

Partial Statistical Test (t-Test)
Partially, the probability value of the population is 0.5151, and the ump is 0.0753 more than 0.05 (> 0.05), so the population and ump variables do not have a positive and significant effect on unemployment. While the HDI value is 0.0487 and education is 0.0003, the HDI and education variables do not have a positive and significant effect on unemployment.
Simultaneously Based on the prob value. It is known that the prob value is 0.000 <0.05 so that it rejects H0 and accepts Ha. So it can be concluded that the number of population, HDI, UMP, and education have an influence on unemployment.

Coefficient of determination test
Based on table 3. The R-squared value of 0.964071 means that the ability of the independent variable to explain the dependent variable is 96.40% while the remaining 3.6% is influenced by other factors not included in the model. This means that the variables of population, HDI, UMP, and education are 96.40% able to predict unemployment, while the remaining 3.6% is influenced by other factors not examined in this study.

Discussions

Based on the results of table 3. The output results of *Eviews 12* with *the Fixed Effect Model* (FEM), the following are the results of the significance test and hypothesis analysis of the relationship between each independent variable (population, HDI, UMP, and education) on the dependent variable (Unemployment):

1. **The Effect of Population on Unemployment**
Based on the results of the regression analysis that has been carried out, it shows that the variable Number of residents with a coefficient (-5.46) has a negative sign with a probability value of 0.5151 > 0.05 , has a negative influence . not significant to unemployment in Indonesia.

2. **The Influence of Human Development Index on Unemployment**
Based on the results of the regression analysis that has been carried out, it shows that the ipm variable with a coefficient (-0.46) marked negative with a probability value of 0.0487 < 0.05, has a significant negative effect on unemployment in Indonesia.

3. **The Impact of Provincial Minimum Wages on Unemployment**
Based on the results of the regression analysis that has been carried out, it shows that the ump variable with a coefficient (-1.22) has a negative sign with a probability value of 0.0753. > 0.05, has an insignificant negative effect on unemployment in Indonesia .

4. **The influence of education on unemployment**
Based on the results of the regression analysis that has been carried out, it shows that the education variable with a coefficient (2.73) has a positive sign with a probability value of 0.0003. < 0.05, has a significant positive effect on unemployment in Indonesia.

Conclusions

This study found that that there is influence negative and significant between human development index with unemployment in Indonesia, where height IPM can cause unemployment decreased . While amount population and provincial minimum wage there is influence negative and no significant with unemployment in Indonesia, where height amount population and provincial minimum wage can cause unemployment decrease . Then there is education influence positive and significant to unemployment in Indonesia, where height education can cause unemployment increase .

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