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Analysis of the Influence of Investment, Human Development Index, Minimum Wage, Economic Growth, Education on Unemployment in Banten Province 2017-2022

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ABSTRACT

Unemployment is a condition caused by an imbalance between the number of workforce and job opportunities. The problem of unemployment is not only experienced by developing countries, but this unemployment problem is also experienced by developed countries. Indonesia, as a member of the Association of Southeast Asian Nations and the Group of Twenty, is actively involved in promoting sustainable economic development. However, Indonesia continues to face challenges in absorbing labor within a macroeconomic framework that leads to unemployment problems. This situation threatens the welfare of its citizens, which has the potential to damage social and political stability. Therefore, it is important to conduct research that focuses on unemployment. This study aims to analyze the effect of investment, Human Development Index, Regency/City Minimum Wages, economic growth, Education in Banten Province. The study uses panel data regression, with a combination of time series data from 2017 to 2022 and cross-section data from 4 Regencies and 4 Cities in Banten Province. The results of this study indicate that the Human Development Index, economic growth, Education have an effect on unemployment because the development of Human Resources increases, economic growth, skilled labor can increase labor absorption. Meanwhile, investment and the Regency/City Minimum Wage do not affect unemployment because they only focus on capital-intensive sectors and there are still many companies that do not comply with the Regency/City Minimum Wage regulations. This study found the importance of increasing the Human Development Index, inclusive economic growth, and workforce skills as strategies in reducing unemployment in Banten Province.

Keywords : Economic Growth, Education, Human Development Index, Investment, Unemployment

INTRODUCTION

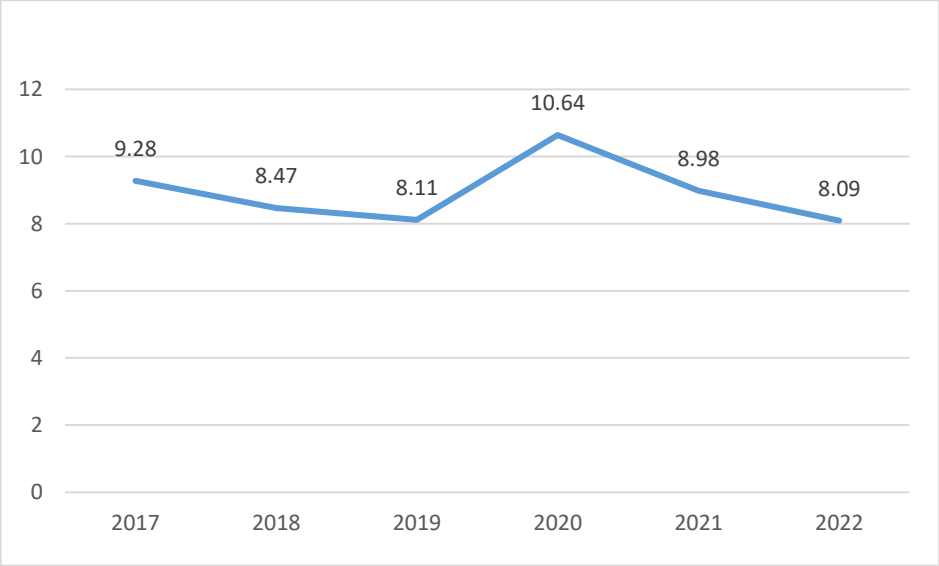
Economic development is the process of improving people's standard of living by expanding employment opportunities and equalizing income distribution. The large number of people that is not balanced with the fulfillment of basic community needs and employment opportunities can cause economic and social problems, one of which is unemployment. (Helvira & Rizki, 2020).

Unemployment is a problem that has not been solved until now, not only in Indonesia but also in most other developing countries. The current unemployment problem is a very complex problem to study because the unemployment problem is related to several economic indicators. (Saptenno & Maatoke, 2022).

The increasing number of unemployed people is caused by the imbalance between the number of workforce and job opportunities. This has an impact on the shift of labor between villages and cities and sectorally. This situation occurs due to the lack of government in providing jobs as a result of the impact of the increasing population so that many workers are not absorbed, because of this, unemployment is created. (Suhandi et al., 2020).

Unemployment problems are also experienced by Banten Province. Banten Province is one of the provinces in Java Island that has an important role in absorbing labor. Given that several industrial areas in Banten Province are examples in the development of industrial areas outside Java. Graph 1 shows the percentage of unemployment in Banten Province in 2017-2022.

Chart 1. Percentage of Unemployment in Banten Province 2017-2022 (%)



Source : Badan Pusat Statistik (processed)

Chart 1 shows that the percentage of unemployment in Banten Province continues to decline, from 9.28% in 2017, reaching 8.09% in 2022. However, during the decline, the percentage fluctuated in certain years. In 2019, after declining from 8.47% to 8.11%, the percentage of unemployment increased in 2020 to 10.64 due to the Covid-19 pandemic which caused many economic activities to stop. In 2021, the number of unemployed decreased to 8.98%. Then in 2022, the number of unemployed decreased to 8.09%.

Okun's Law states that empirically there is a correlation between unemployment and output in the business cycle. A 1% increase in the unemployment rate can reduce GDP (Gross

Domestic Product) by 2%. This means that there is a negative effect between economic growth and unemployment and vice versa. (Suhendra & Wicaksono, 2020)

The Classical view that unemployment can be overcome through a free market mechanism, in other words, the Classical theory focuses on the supply side of labor through the market freely following the existing market mechanism. The supply of labor in the free market automatically realizes the demand for labor so that a balance is created where all supply will be absorbed by market demand. The Classical theory states that unemployment occurs because the impact of inappropriate resource allocation is temporary, and can be resolved in the market through existing market mechanisms. Meanwhile, according to Keynesian theory, unemployment occurs due to low aggregate demand which results in low economic growth. The cause of low economic growth is not solely due to low production, but is due to low consumption. Of course, this cannot be submitted through a free market mechanism as suggested by the Classical theory. In a free market mechanism, when the demand for labor increases, the wage rate decreases, but this is actually detrimental. Falling wages mean a decrease in people's income and this means that it will reduce people's purchasing power for goods and services. Existing goods and services are not absorbed because the decrease in purchasing power will cause producers and entrepreneurs to lose money, so to reduce these losses, production will be reduced which ultimately reduces the demand for labor which means unemployment occurs. (Setyawan et al., 2021)

Menurut Mankiw (2007), Frictional unemployment is unemployment caused by the time it takes for people to find work. Economists call changes in the composition of demand between industries or regions as sectoral shifts. Sectoral shifts always occur and it takes time to change sectors, so frictional unemployment always occurs. While structural unemployment is unemployment caused by wage rigidity and job rationing. Workers are not employed not because they are actively looking for jobs that match their skills, but because at the prevailing wage rate, the supply of labor exceeds demand so that workers are just waiting for jobs to become available.

Soekapdjo & Oktavia (2021), Garnella et al., (2020), Mahroji & Nurkhasanah (2019), Tuah et al. (2022) found that the human development index has a negative effect on unemployment. This finding shows that improving the quality of Human Resources in general can reduce the number of unemployed. From the investment side, Johan et al. (2016), Mahroji & Nurkhasanah (2019), Prasaja (2013), Tuah et al. (2022) found that investment has a negative effect on unemployment. This shows that investment can create jobs and absorb labor if directed at labor-intensive sectors. On the minimum wage variable, mixed results were found. Minimum wages were found to have a positive effect on unemployment by Leasiwal (2021), Fauziah (2020), Pratomo & Setyadharma (2020). While the minimum wage has a negative effect on unemployment, it was found by Marliana (2022), Khotimah (2018), Santoso & Kristiyanto (2021), Tuah et al. (2022). The differences occur due to the diversity of regional economic conditions, industrial sectors, business actors' adaptability, in addition to the level of compliance with minimum wage regulations and the effectiveness of government supervision also determine whether the minimum wage policy actually has a positive impact or vice versa. Economic growth was found to have a negative effect on unemployment, as found by Garnella et al (2020), Fahmi (2022), Marliana (2022), Yuliarmi & Senet (2014), Tuah et al. (2022). This relationship is consistent with Okun's law which states that an increase in economic output tends to be accompanied by a decrease in the unemployment rate due to the expansion of production activities that absorb more labor. Education was found to have a positive effect on unemployment by Sari & Pangestuty (2022), dan Khotimah (2018) meaning that the higher a person's education is not necessarily the easier it is to get a job. This happens because of the

mismatch between educational background and the needs of the world of work (mismatch). As well as the high expectations of graduates for the desired job. In addition, the condition of overeducation, namely when individuals have a higher level of education than the available job qualifications. As a result, they tend to delay entering the world of work until they get a job that is considered in accordance. Thus, without With cooperation between educational institutions and the world of work, increasing education can lead to an increase in the number of unemployed.

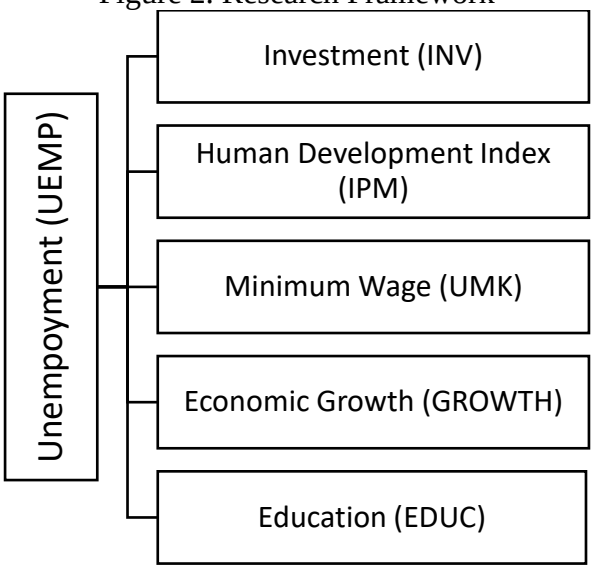
Indonesia with fluctuating inflation but still under control with the determination of minimum wages and workers who have an increasing human development index will affect productivity and efficiency, so that it is expected to increase export competitiveness which will ultimately increase labor absorption. For, this study aims to analyze the effect of investment, Human Development Index, minimum wages, economic growth, education on unemployment in Banten Province in 2017-2022.

Framework of thought

From theoretical studies and previous research, a research framework can be created. This study examines five variables, namely investment, Human Development Index, Regency/City Minimum Wage, economic growth, and Education.

Investment is expected to create new jobs, the Human Development Index describes the improvement in the quality of Human Resources that affects the competitiveness of the workforce, the Regency/City Minimum Wage influences the company's decision to recruit workers, economic growth describes economic activity in encouraging increased employment opportunities, education shows the ability of the workforce to compete in the world of work. The research framework is described as follows:

Figure 2. Research Framework



Hypothesis

Based on the above framework, the following hypothesis is formulated:

H1: Investment has a negative impact on unemployment in Banten Province in 2017-2022

H2: The Human Development Index (HDI) has a negative effect on unemployment in Banten Province in 2017-2022

H3: Regency/City Minimum Wages have a positive effect on unemployment in Banten Province in 2017-2022

H4: Economic growth has a negative impact on unemployment in Banten Province in 2017-2022
H5: Education has a positive effect on unemployment in Banten Province in 2017-2022

RESEARCH METHODS

To estimate the influence of investment, human development index, minimum wage, economic growth, education in Banten Province in 2017-2022, a panel data regression tool is used, with the following econometric model :

$$UEMP_{it} = \beta_0 + \beta_1 INV_{it} + \beta_2 IPM_{it} + \beta_3 UMK_{it} + \beta_4 GROWTH_{it} + \beta_5 EDUC_{it} + e_{it}$$

Di mana:

UEMP	: Unemployment (%)
INV	: Investment (Juta Rupiah)
IPM	: Human Development Index (%)
UMK	: Minimum Wage Kabupaten/Kota (Rupiah)
GROWTH	: Economic Growth (%)
EDUC	: Education (%)
β_0	: Constanta
$\beta_1 \cdots \beta_5$	: Coeffisien Regretion variabel independent
i	: Region
t	: Year to *t*

Population

Population is a generalization area consisting of objects or subjects that have certain qualities and characteristics that are determined by researchers to be studied and then conclusions drawn. Determining the population must begin with a clear determination of the population that is the target in a study called the target population, namely the population that will be the scope of the research conclusion. Based on the understanding of the population, the target population in this study is investment data, human development index, minimum wage, economic growth, education in Banten Province in 2017-2022.

Sampel

A sample is a part of a population. It includes a number of members selected from the population. In this study, researchers took all populations, namely investment data, human development index, minimum wages, economic growth, education in Banten Province in 2017-2022 to be used as samples. Sampling Technique is a sampling technique. Sampling is a process of selecting a number of elements from the population so that by studying the sample, an understanding of the characteristics of the sample subjects will make it possible to generalize the characteristics of the population elements. The sampling technique used in this study is a sampling technique when all members of the population are used as samples. This study uses saturated sampling, where all members of the population are sampled.

The econometric model above is a modification of the model Mahroji & Nurkhasanah (2019), Yuliarmi & Senet (2014), Leasiwal (2021), dan Khotimah (2018) The Human Development Index, Investment, Economic Growth are suspected to have a negative effect on unemployment, while the Regency/City Minimum Wage and Education are suspected to have a positive effect on unemployment.

The data used in this study is panel data, namely a combination of time series and cross sections. Data sources were obtained from the Central Statistics Agency (BPS) and Banten

Province in Figures. Time series data from 2017-2022, while the cross sections used were 4 districts and 4 cities in Banten Province.

The estimation stage of panel data regression analysis will include the estimation of econometric model parameters using the Pooled Least Square (PLS), Fixed Effect Model (FEM), and Random Effect Model (REM) approaches; selection of the best estimated model using the Chow test and Hausman test and if necessary the Lagrange Multiplier test; goodness of fit test of the model on the selected estimated model; and validity test of the influence of independent variables on the selected estimated model.

RESULT AND DISCUSSION

Estimation results

The results of the econometric model estimation in advance using the Pooled Least Square (PLS), Fixed Effect Model (FEM) and Random Effect Model (REM) approaches along with the results of the model selection test are summarized in Table 3.

Table 3. Results of Panel Data Regression Econometric Model Estimation - *Cross section*

Variabel	Koefisien Regresi		
	PLS	**FEM**	**REM**
C	-46,55413	48,03225	-46,55413
LOG(INV)	0,211292	0,069093	0,211292
IPM	-0,175366	-1,140358	-0,175366
LOG(UMK)	4,407219	2,933064	4,407219
GROWTH	-0,133886	-0,205720	-0,133886
EDUC	-0,053575	-0,147201	-0,053575
R^2	0.603236	0,813797	0,603236
Adjusted. R^2	0,556002	0,749956	0,556002
Statistik *F*	12,77125	12,74722	12,77125
Prob. Statistik *F*	0,000000	0,000000	0,000000
Uji Pemilihan Model			
(1) Chow			
Cross- Section $F(7,35)$ = 5,654069; Prob. $F(7,35)$ = 0,0002			
(2) Hausman			
Cross-Section random $\chi^2(5)$ = 39,479768; Prob. χ^2 = 0,0000			
**WARNING: estimated cross-section random effects variance is zero			

Source: BPS, diolah.

The Chow test and the Hausman test show that (FEM) is selected as the best estimated model, as seen from the probability or empirical significance of the F statistic of the Chow test with a value of 0.0002 (<0.01) and the Hausman test shows a warning that the cross-section variant of the Hausman test is not valid. The complete estimation results of the FEM estimated model are shown in Table 4 and Table 5.

Table 4. Estimation Model *Fixed Effect Model (FEM)*

$$UEMP_{it} = 48{,}03225 + \underset{(0{,}5026)}{0{,}069093\ LogINV_{it}} - \underset{(0{,}0809)***}{1{,}140358\ IPM_{it}} + \underset{(0{,}4802)}{2{,}933064\ \text{Log}UMK_{it}} - \underset{(0{,}0027)*}{0{,}205720\ \text{GROWTH}_{it}} - \underset{(0{,}0621)***}{0{,}147201\ EDUC_{it}}$$

R^2 = 0,813797; *DW* = 2,168647; *F*. = 12,74722; Prob. *F* = 0,000000

Sumber: BPS, diolah. **Keterangan:** ***Signifikan pada α = 0,01; ****Signifikan pada α = 0,05; *****Signifikan pada α = 0,10; Angka di dalam kurung adalah probabilitas nilai statistik t.

Tabel 5. Efek Wilayah

No	Kota/Kabupaten	Effect Wilayah	Konstanta
1	Kab Pandeglang	-8,367873	39,664377
2	Kab Lebak	-9,597780	38,43447
3	Kab Tangerang	2,271549	50,303799
4	Kab Serang	-4,691034	43,341216
5	Kota Tangerang	8,018858	56,051108
6	Kota Cilegon	1,344603	49,376853
7	Kota Serang	-0,369525	47,662725
8	Kota Tangerang Selatan	11,39120	59,42345

Source: BPS, Diolah

Discussion

From Table 4, it can be seen that the FEM estimated model exists with a probability or empirical significance of F statistics worth 0.000000 (<0.01), with a coefficient of determination (R2) value of 0.813797; which shows that the FEM estimated model has high predictive power. Separately from the five variables in the econometric model, three variables affect unemployment, namely the human development index (HDI) with a statistical probability of t of 0.0809 (<0.10), economic growth (GROWTH) with a probability of 0.0027 (<0.01) and education has a probability of 0.0621 (<0.10).

The human development index (HDI) variable has a coefficient of -1.1400358, with a linear-linear relationship pattern. This means that if the human development index (HDI) increases by 1, unemployment decreases by 1.1400358%. Conversely, if the human development index (HDI) decreases by 1, unemployment increases by 1.1400358%.

The economic growth variable (GROWTH) has a coefficient of -0.205720, with a linear-linear relationship pattern. This means that if economic growth (GROWTH) increases by 1 percent, unemployment decreases by 0.205720%. Conversely, if economic growth decreases by 1 percent, unemployment increases by 0.205720%.

The education variable has a coefficient of -0.147201, with a linear-linear relationship pattern. This means that if education increases by 1 percent, unemployment decreases by 0.147201%. Conversely, if education decreases by 1 percent, unemployment increases by 0.147201%.

Table 5 shows that the area with the highest constant value is South Tangerang City, which is 59.42345. This means that related to the influence of investment variables, Human Development Index, minimum wage, economic growth and education on unemployment in Banten Province tends to have a higher unemployment rate compared to other areas in Banten Province. After South Tangerang City, the two areas with the largest constants are Tangerang City and Tangerang Regency.

The lowest constant value is owned by Lebak Regency, which is 38.43447. This means that related to the influence of investment variables, human development index, minimum wage, economic growth and education on unemployment in Banten Province tends to have a fairly low unemployment rate compared to the other two regions. After Lebak Regency, the two regions with the lowest constants are Pandeglang Regency and Serang Regency.

Economic Interpretation

Investment has no effect on unemployment in Banten Province. This is because investment focuses more on capital-intensive sectors (prioritizing technology and machinery), not labor-intensive (which creates many jobs). In theory, this relationship contradicts economic

logic because investment should be able to create new jobs and reduce unemployment. The results of this study are not in line with research conducted by Mahroji & Nurkhasanah (2019) which states that investment has a negative effect on unemployment.

The human development index (HDI) has a negative effect on unemployment in Banten Province. The results of this study are the same as the study Mahroji & Nurkhasanah (2019) which states that the human development index has a negative effect on unemployment. This means that increasing the Human Development Index (HDI) contributes to reducing unemployment. This shows that increasing the quality of human resources (HR), through improving the quality of health, education, and community income can reduce unemployment.

The Regency/City Minimum Wage has no influence on unemployment in Banten Province. This is because in Banten Province there are still many informal sector workers and company which is not bound by the district/city minimum wage policy. The results of this study are not in line with research conducted by Leasiwal (2021) states that wages have a positive effect on unemployment.

Economic growth has a negative impact on unemployment in Banten Province. The results of this study are the same as previous research conducted by Yuliarmi & Senet (2014) states that economic growth has a negative effect on unemployment. This is in accordance with Okun's Law theory, which states that empirically there is a correlation between unemployment and output in the business cycle. A 1% increase in the unemployment rate can reduce GDP (Gross Domestic Product) by 2%. This means that there is a negative effect between economic growth and unemployment and vice versa. (Suhendra & Wicaksono, 2020)

Education according to data on the proportion of the workforce with a high school education or above has a negative influence on unemployment in Banten Province, the results of this study are different from previous research. Khotimah (2018) which states that education has a positive effect. In theory, the level of education can result in a decrease in unemployment. To see the quality of Human Resources (HR) in a region can be seen from the quality of the level of education, if the level of education is high then it is considered to have good quality HR. Workers who have good knowledge and skills can create their own jobs which can later reduce unemployment.

CONCLUSION

Based on panel data regression analysis, Fixed Effect Model (FEM) was selected as the best estimated model. This study shows that the Human Development Index (HDI), economic growth, education have a negative effect on unemployment in Banten Province in 2017-2022. While investment and Regency/City Minimum Wages do not affect unemployment in Banten Province in 2017-2022.

The increase in the Human Development Index in Banten Province plays an important role in expanding the absorption of labor. Areas supported by adequate health facilities and higher education can improve the quality of life. This means that the quality of the Human Development Index is high, the workforce is more productive, competitive and easily absorbed in the labor market. Economic growth in Banten Province tends to be relatively stable, supported by the trade and industry sectors, its impact on labor absorption is still limited. This means that economic growth has not evenly provided job opportunities for the people of Banten, especially in rural areas or those far from industrial centers. Education in Banten Province can provide relevant abilities and skills for the workforce to meet market needs. Investment in Banten Province is not optimal because it focuses on capital-intensive sectors (prioritizing technology and machines) rather than labor-intensive (which creates many jobs). The minimum wage in Banten Province has no effect on unemployment, because there are still many companies that do not comply with the Regency/City Minimum Wage regulations.

Therefore, the government needs to advance the quality of education and training that is relevant to market needs, equalizing employment opportunities in rural areas is done by developing industrial areas, supporting MSMEs through funding and training, and implementing a Regency/City Minimum Wage policy so as not to burden small companies. The government also needs to encourage investment in labor-intensive sectors to create jobs. Encourage the development of health facilities, education in areas with a low Human Development Index, improve supporting infrastructure such as transportation and access to technology, collaborate with the private sector, conduct periodic policy evaluations, public awareness is also needed to ensure the impact of sustainable policies.

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