Unemployment in Pontianak City: Macroeconomic Determination

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Abstract
The purpose of this research is to analyze the influence of investment and population on the unemployment rate in the city of Pontianak. The data used is time series data for ten years from 2006 to 2015. The data analysis technique used is multiple linear regression. The results of this study show that first: the investment variable has no significant effect on the unemployment variable with a Sig value of 0.091. Second: the population variable has a significant effect on the unemployment variable with a Sig value of 0.037. Investment and population have a strong relationship with unemployment, which is 76%. The amount of investment and population will have an impact on the level of unemployment.

JEL: E24
Keywords: Investasi; Jumlah Penduduk; Pengangguran.

I. INTRODUCTION
One of the problems faced by countries around the world, which is also a problem in Indonesia, is the issue of unemployment. Unemployment is a very important problem to solve, considering that it occurs as a result of a high rate of changes in the workforce that is not matched by job creation. The level of unemployment in a country is an important indicator of the progress or regression of its economy and the development of a region. This is because

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unemployment identifies the parameter of the well-being of the population in a region so that the welfare of the society can be improved.

From a macro perspective, unemployment will cause suboptimal economic growth as some potential factors of production are not utilized. With unemployment, the productivity of the community will certainly decrease. The loss of a source of income opens up opportunities for people to experience difficulty in meeting their basic needs, which ultimately can lead them into poverty. The unemployed group will depend on those who work, resulting in a decrease in per capita income.

Unemployment in Pontianak City fluctuated from 2006-2015. Here are the unemployment data for Pontianak City:

**Figure 1.1 The unemployment rate in Pontianak City from 2006-2015**

<table>
<thead>
<tr>
<th>Year</th>
<th>Pengangguran</th>
<th>Peningkatan</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>33,652</td>
<td>-2,240</td>
</tr>
<tr>
<td>2007</td>
<td>31,412</td>
<td>-7,810</td>
</tr>
<tr>
<td>2008</td>
<td>23,602</td>
<td>-1,165</td>
</tr>
<tr>
<td>2009</td>
<td>22,437</td>
<td>-2,121</td>
</tr>
<tr>
<td>2010</td>
<td>20,316</td>
<td>-2,333</td>
</tr>
<tr>
<td>2011</td>
<td>18,183</td>
<td>-4,264</td>
</tr>
<tr>
<td>2012</td>
<td>13,919</td>
<td>2,247</td>
</tr>
<tr>
<td>2013</td>
<td>16,166</td>
<td>2,348</td>
</tr>
<tr>
<td>2014</td>
<td>18,514</td>
<td>7,811</td>
</tr>
<tr>
<td>2015</td>
<td>26,325</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Badan Pusat Statistik (BPS)*

Based on its development, the unemployment rate in Pontianak City in 2015 was 26,325 people. This figure is much larger compared to 2013 and 2014 which were 16,166 people and 18,514 people, respectively. This means that the increase in the number of unemployed during 2015 increased almost three times from the previous three years. With a large number of unemployed people and if left unchecked, there is a high possibility that it could lead to a social crisis that affects job seekers.

The government always strives to reduce the unemployment rate, one of which is through regional economic development. Economic development will stimulate economic growth in the region. However, in its development, a budget or funds are needed in implementing the expenditures, so that improvements in the targeted sector can run as expected. The way the government does this is by attracting both local and foreign investors to make investments. With investment, it accelerates regional development, which will create many job opportunities and absorb the workforce.

The problem of unemployment is exacerbated by population growth that is not balanced with the availability of job opportunities. The increasing population
growth makes the available job opportunities unable to keep up with the large number of people, only a few can work. This means that there will be a lot of people who will experience unemployment and there is a greater potential for social vulnerability that may arise. This will also result in a lack of people's welfare in terms of the economy.

Concerning this, the increase in investment in a region and the controlled population growth are expected to overcome the unemployment in that region. The development of investment rates, population, and unemployment in Pontianak City from 2006 to 2015 can be seen in Table 1.1 below:

<table>
<thead>
<tr>
<th>No</th>
<th>Tahun</th>
<th>Investment</th>
<th>Population</th>
<th>Unemployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2006</td>
<td>187,07</td>
<td>510,687</td>
<td>33,652</td>
</tr>
<tr>
<td>2</td>
<td>2007</td>
<td>-</td>
<td>514,622</td>
<td>31,412</td>
</tr>
<tr>
<td>3</td>
<td>2008</td>
<td>191,29</td>
<td>521,569</td>
<td>23,602</td>
</tr>
<tr>
<td>4</td>
<td>2009</td>
<td>221,43</td>
<td>543,842</td>
<td>22,437</td>
</tr>
<tr>
<td>5</td>
<td>2010</td>
<td>219,4</td>
<td>554,764</td>
<td>20,316</td>
</tr>
<tr>
<td>6</td>
<td>2011</td>
<td>219,42</td>
<td>565,856</td>
<td>18,183</td>
</tr>
<tr>
<td>7</td>
<td>2012</td>
<td>623,43</td>
<td>575,843</td>
<td>13,919</td>
</tr>
<tr>
<td>8</td>
<td>2013</td>
<td>736,84</td>
<td>587,169</td>
<td>16,166</td>
</tr>
<tr>
<td>9</td>
<td>2014</td>
<td>1,109,98</td>
<td>589,097</td>
<td>18,514</td>
</tr>
<tr>
<td>10</td>
<td>2015</td>
<td>1,279,81</td>
<td>607,438</td>
<td>26,325</td>
</tr>
</tbody>
</table>

Source: Badan Pusat Statistik (BPS)

Based on the data in the table above, it is known that the development of investment in Pontianak from 2006 to 2015 experienced a significant change. In ten years, there was an increase of IDR 187.07 billion in 2006 and it continued to rise to IDR 1,279.8 billion in 2015. In addition to the increase in investment, there was also an increase in unemployment in Pontianak. In 2006, the number of unemployed people was 33,652, and this number continued to decline until 2012, along with the increasing amount of investment. However, in 2013, the number of unemployed people increased when the investment amount increased from IDR 623.43 billion in 2012 to IDR 736.84 billion in 2013. The number of unemployed people increased to 16,166, which was higher than the previous number of 13,919 people.

In its development, the population in Pontianak City continues to increase every year. In 2006, the population in Pontianak City was 493,203 people with an unemployment rate of 31,412 people. When the population increased to 575,843 people, the unemployment rate decreased to 13,919 people. Then, in the following years, both the population and unemployment rate continued to increase, with a population of 607,438 people and unemployment rate of 26,325 people.

Sadono (2004) explained that the higher the investment, the more job opportunities will be created, and the new job opportunities will absorb many workers, with the absorption of many workers, it will reduce the unemployment...
rate. However, in reality, based on the data in table 1.2 above, the investment figure in 2014 amounted to 1,109.9 million increased to 1,279.8 million, but the number of unemployed increased from 18,514 people in 2014 to 26,325 people in 2015.

The data on the population above shows an increase every year, but the unemployment rate shows a decrease, namely in 2012 it decreased to 13,919 people, while in the previous year, in 2011, it was 18,183 people. This is not in line with the explanation by Heryanto (2013) which states that population growth is in line with the unemployment rate, meaning that the higher the population, the higher the unemployment rate.

From the above explanation, the researcher wants to know the extent of the influence of investment and population on the unemployment rate.

II. Literature Review

In the researcher’s search, there are several research issues similar to what the researcher will do, with different research subjects and objects, but still relevant. Several research findings have been found different from each other, including:

Giri, Henny, and Dewi (2015) conducted a study on the problem of unemployment in Bali Island. The results showed that investment partially influenced unemployment in Bali Island. Prasaja (2013) analyzed the variables of foreign investment, population, and inflation on educated unemployment in Central Java Province. The study concluded that foreign investment influenced educated unemployment in Central Java. Helvira and Rizki (2020) examined the effect of investment, minimum wage, and HDI on unemployment with a sample of all districts/cities in West Kalimantan. This panel regression analysis showed that the investment variable did not affect unemployment in West Kalimantan. Syaihu (2012) investigated the influence of government and private investment on unemployment in North Kalimantan. The study concluded that there is a direct and indirect relationship between investment and unemployment. Karisma, Subroto, and Hariyati (2021) studied the influence of investment on unemployment in Java Island. The results found that investment significantly influenced unemployment in Java Island. Silaban and Siagian (2021) researched open unemployment in North Sumatra. This observation-based study from 2019 to 2022 concluded that investment significantly affected open unemployment. Wahyuni and Murtala (2020) examined the variables of inflation, GDP, and investment and their effect on educated unemployment in Aceh. The study concluded that they influenced educated unemployment.

Lindiarta (2014) analyzed the influence of population on unemployment in Malang City during the period of 1996-2013. The results showed that the population has a significant influence on unemployment in Malang City. Zulfa (2016) studied the effect of population and economic growth variables on the unemployment rate in Lhokseumawe City. The results found that population growth did not have an effect on the unemployment rate.
and Sasongko (2019) examined the impact of population, gross regional domestic product, minimum wage, and inflation on unemployment in Indonesia. The results showed that population did not have an effect on the unemployment rate in Indonesia. Astuti, Istiyani, and Yulianti (2019) investigated the effect of population growth on the open unemployment rate in Indonesia. The data used in the study was from 1986 to 2017. The research concluded that population growth did not have a significant effect on open unemployment.

Causality of investment with unemployment

Sadono (2007) explains that investment activities enable a society to continuously improve economic activities and job opportunities, increase national income, and improve the standard of living. When investment is high, it indicates an increase in national income. If national income is high, it will increase demand for goods and services. This will result in higher profits for companies due to the increased demand for these goods and services. If demand for goods and services is high, it will require more labor, thereby increasing employment. When demand for labor increases, it will reduce the number of unemployed, which in turn will increase the prosperity of society.

Causality of population with unemployment

In general, population refers to every person who resides or lives in a country's territory for a sufficient period of time. Haryanto (2013) explained that the population count indicates the total number of people occupying a certain area within a specific period of time. Malthus stated that when the labor population grows faster than food production, real wages will decrease, as population growth causes the cost of living, namely the cost of food, to increase. When real wages are high in a certain area, it will affect unemployment. When there is an increase in real wages, a company will reduce its workforce, while the demand for available labor remains high. When the supply of labor is higher than the demand for labor, unemployment will occur.

Rizka (2013) explained in her research that an increase in the population leads to an increase in the size of the labor force. However, the increase in the labor force is not accompanied by an increase in employment opportunities, resulting in the inability to distribute the expanded labor force into jobs. This will lead to an increase in unemployment. According to classical economists, there is a theory that explains the relationship between per capita income and population size, called the optimum theory. This theory explains that when the population is scarce, marginal production is higher than per capita income. On the other hand, when the population is too large, the law of diminishing returns will affect the production function, causing marginal production to decline. As a result, national and per capita income will grow more slowly.
Conceptual Framework

The framework of thought in this research can be described as follows:

![Diagram of Conceptual Framework]

To guide the research findings, a research hypothesis is proposed. The tentative hypothesis that still needs to be tested is formulated as follows:

- **H₁**: the investment has a significant effect on the unemployment rate
- **H₂**: the population size has a significant effect on the unemployment rate.

III. RESEARCH METHOD

Types and Sources of Data

The data used is time series data. In this study, the time series data used is data on investment, population, and unemployment rate for 10 years. Based on the research focus, data determination and data sources use secondary data. This study uses secondary data obtained from the Central Statistics Agency (BPS) in the form of data on investment, population, and unemployment rate for the last 10 years, starting from 2006 to 2015.

Data Analysis Process

The analysis technique used to answer the formulated problem is multiple linear regression. The regression equation model can be seen as follows:

\[ y_i = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \ldots + \beta_k x_{ki} + e_i \]

Explanation:
- \( y_i \) = Dependent Variable
- \( \beta_0 \) = Constant
- \( \beta_{1,2,k} \) = Coefisien of Dependent Variable
- \( x_{1,2,i} \) = Coefisien of Independent Variable
- \( e_i \) = Error Term

The regression equation model used in this research is formulated as
following:

$$\gamma_{\text{Unemployment}} = \beta_0 + \beta_1 X_{\text{Investation}} + \beta_2 X_{\text{Population}} + \epsilon_i$$

Explanation:

$$\gamma_{\text{Unemployment}} = \text{Unemployment Variable}$$
$$\beta_0 = \text{Constant}$$
$$\beta_1 X_{\text{Investation}} = \text{Investation Variable}$$
$$\beta_2 X_{\text{Population}} = \text{Population Variable}$$
$$\epsilon_i = \text{Error Term}$$

To determine the validity of the hypothesis, statistical tests are needed, such as partial significance test (t-test), simultaneous significance test (F-test), and the coefficient of determination ($R^2$).

**Partial Test (t-Test)**

The statistical test (t-test) shows how far the influence of one explanatory variable is in individually explaining the variation of the dependent variable. The null hypothesis ($H_0$) to be tested is whether a parameter ($\beta_i$) is equal to zero.

**Simultaneous Test (F-TEST)**

The statistical test (F-test), shows whether all independent variables included in the model have a joint influence on the dependent variable. The null hypothesis ($H_0$) to be tested is whether all parameters in the model are equal to zero.

**Coefficient of Determination ($R^2$)**

The coefficient of determination ($R^2$) essentially measures how well the model explains the variation in the dependent variable. The value of the coefficient of determination is between zero and one. A small value of means that the ability of independent variables to explain the dependent variable is very limited.

**IV. RESULT AND DISCUSSION**

**Partial Test (t-Test)**

The parameter significance test or t-test is used to measure the extent to which each independent variable influences the dependent variable.

<table>
<thead>
<tr>
<th>Coefficients*</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>T</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
<td>99,733</td>
<td>32,800</td>
<td></td>
<td>3,041</td>
<td>,023</td>
<td></td>
</tr>
<tr>
<td>1 Investation</td>
<td>,381</td>
<td>,189</td>
<td>1,299</td>
<td>2,014</td>
<td>,091</td>
<td>,169</td>
</tr>
<tr>
<td>Population</td>
<td>-8,357</td>
<td>3,123</td>
<td>-1,726</td>
<td>-2,676</td>
<td>,037</td>
<td>,169</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Pengangguran
Based on the results of the SPSS 21.0 analysis above, it shows that the sig value for the variable "Investment" is 0.091. This indicates that the Sig value > 0.05. Therefore, partially the level of investment does not have a significant effect on the unemployment rate. Meanwhile, for the variable "Population", the Sig value is 0.037 which means that Sig < 0.05. Therefore, partially the population has a significant effect on the unemployment rate.

**Simultaneous Test (F-Test)**

The F test is used to determine the joint (simultaneous) influence of the independent variables on the dependent variable. Here are the results of the F test:

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>43,978</td>
<td>2</td>
<td>21,989</td>
<td>4,118</td>
<td>0.075^a</td>
</tr>
<tr>
<td>Residual</td>
<td>32,035</td>
<td>6</td>
<td>5,339</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>76,013</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

^a. Dependent Variable: Pengangguran  
^b. Predictors: (Constant), Penduduk, Investasi

Based on the table above, it can be seen that the value of Sig is 0.075, which means Sig > 0.05. This means that the variables of Investment and Population together (simultaneously) do not have a significant effect on the unemployment variable.

**Coefficient of Determination ($R^2$)**

The purpose of the Coefficient of Determination ($R^2$) test is to determine the proportion or percentage of total variation in the dependent variable explained by the independent variables. A small value of $R^2$ indicates that the ability of the independent variables to explain the variation in the dependent variables is very limited. The result of the Determination ($R^2$) test can be seen in the following table:

<table>
<thead>
<tr>
<th>Model</th>
<th>$R$</th>
<th>$R$ Square</th>
<th>Adjusted $R$ Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.761^a</td>
<td>.579</td>
<td>.438</td>
<td>2,31067</td>
<td>2,162</td>
</tr>
</tbody>
</table>

^a. Predictors: (Constant), Penduduk, Investasi  
b. Dependent Variable: Pengangguran

Based on the above data, it shows that the R Square value is 0.761. Therefore, the magnitude of the influence of independent variables on the dependent variable is 76%, while the remaining 24% is explained by other variables outside the study.
The model equation obtained from the estimation of the influence of investment and population on the unemployment rate is as follows:

\[ Y = 99,733 + 0.381 X_1 - 8,357 X_2 \]

1. **Effect of Investment on Unemployment**

The growth of the economy in a region is one of the factors that can be seen from the increase in investments in that area. Economic development will be visible, and job opportunities will increase, resulting in a decrease in the unemployment rate in the region. In this study, the researcher found that partially, investment did not have a significant effect with a significance value of 0.091 > 0.05 and a positive value. This means that an increase in investment is directly proportional to an increase in the number of unemployed people in Pontianak City. These results are not consistent with the research hypothesis that investment has an effect on unemployment, which contradicts the theory that investment should have a negative impact on unemployment, meaning that an increase in investment should result in a decrease in the unemployment rate. This result is also supported by Helvira and Rizki (2020) who concluded that investment does not have an effect on unemployment. The findings contradict the results of previous studies by Giri, Henny, and Dewi (2015), Prasaja (2013), Syaihu (2012), Karisma, Subroto, and Hariyati (2021), Silaban and Siagian (2021), and Wahyuni and Murtala (2020) who found that the population has an effect on the unemployment rate.

The factor that causes the lack of influence of investment on the unemployment rate is due to the type of investment that does not focus on labor-intensive activities, which will require fewer workers. The main goal of labor-intensive programs is to create new job opportunities. Chapra explained that the main policy measures taken to reduce unemployment and the lack of job opportunities are the expansion of demand and the development of large and medium-scale capital-intensive industries. Imam Hasan al-Banna considered popular industry to be very important. He emphasized that this will help provide productive employment to the community, and thus help reduce unemployment and poverty.

2. **Effect of Population on Employment**

The study found that partially the population has a significant effect on unemployment. With a significance value of 0.037 < 0.05 and negative value. This indicates that there is a significant relationship between the population and unemployment. Although there is an effect, an increase in the population will reduce unemployment in the city of Pontianak. This finding is consistent with the research conducted by Lindiarta (2014), in which the population has a significant effect on unemployment, and it contradicts the findings of Zulfa (2016), Brahma, Sembiring, and Sasongko (2019), and Astuti, Istiyani, and Yulianti (2019), which concluded that the population has no effect on unemployment. Rachim (2013) also explained in her research that population growth results in an increase in the workforce. However, the increase in the workforce is not
accompanied by an increase in job opportunities, resulting in the increased workforce being unable to be distributed to job fields. This will impact the increasing number of unemployed people. Moreover, the population of Pontianak City is also continuously increasing every year, reaching 653,030 people in 2016, and this number must be balanced with business fields that will absorb the workforce. Humans are a factor of production that plays an important role in all factors of production. Humans are the ones who have initiative or ideas, organize, process, and lead all factors of production so that they become useful goods and services for needs. Indeed, in producing output, humans need non-human factors of production, but without humans, goods and services will not be optimal in providing benefits. Although this research shows that the population size or humans do not affect unemployment, if the quality of humans or the population is good, then they will become a qualified workforce needed in all sectors of the economy. So, if the human factor is good, it will result in an increase in work productivity, which will eventually lead to an increase in income. High productivity will require a lot of labor, and in the end, unemployment issues in an area can certainly be reduced.

V. CONCLUSION

Based on the research and discussion presented, it can be concluded that partial investment does not have a significant effect on the unemployment rate, with a significance value of 0.091. This indicates that the Sig value > 0.05 and the investment variable has a positive value, meaning that an increase in investment will not reduce the unemployment rate in Pontianak City. The partial population has a significant effect on the unemployment rate with a significance value of 0.037, indicating that the Sig value < 0.05. On the other hand, the number of unemployed has a negative value, meaning that an increase in the population will not increase the number of unemployed people in Pontianak City.

Investment and population have a strong relationship with unemployment, with an influence of 76%. The amount of investment and population can impact the number of unemployed people in the region. Investment is a trading activity that plays a role not only in generating material goods but also in providing benefits to others. Investment is not only limited to financial investment but can also include non-financial investment that affects economic activity.

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