Population and Unemployment: A Population Analysis in East Java Indonesia

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Abstract: The purpose of this study was to analyze the influence of population growth, economic growth, investment in open unemployment rates in East Java Province. The analysis used is path analysis. The results of his research include population growth which has a positive effect on economic growth but is not significant. Economic growth has a positive effect on investment but is not significant, foreign investment has a negative effect on the rate of open unemployment and domestic investment has a positive effect on open unemployment but is not significant. This means that the rate of population growth, economic growth and investment does not directly or indirectly affect the open unemployment rate in East Java.

Keywords: Population, economic growth, unemployment

1. Introduction

Indonesia's economic growth in general and especially East Java Province is influenced by several factors including investment and labor factors. Research on economics generally states that poverty reduction is closely related to economic growth. Basically, economic growth is the main requirement in alleviating poverty, and the second is that economic growth is pro-poor[1] , [2].

Development of an area can be seen from the level of economic growth in the region, income and level of welfare of the population of the area. The amount of unemployment in an area is a factor that indicates that the regional economic growth is not good [3]. One important indicator in economic growth is population growth. The greater the population, the more labor is used. With the increasing population, it will also increase population problems that must be faced by a country or region [3]

The main problem that must be faced by a country or region that experiences rapid population growth is to increase the number of unemployed. Unemployment. Unemployment occurs because the labor force is more than the demand for labor [4]. The long-run elasticity and Granger causality wereinvesteigated under framework of VECM [5]. The result suggested a positive and statistically significant impact of energy consumption and population growth on umemployment. The Granger causality result suggested bidirectional causality between unemployment and FDI, and population and energy use. The study suggested some policy implications based on our empirical result [5].

Many reasons have been attributed as to why population growth is on the rise and how it proportionately affect unemployment. The major reason for a rise in population include increase in birth rate, socio-culture beliefs and improvement in welfare and medical facilities [6]. Although the positive effects of population cannot be overlooked, it is also importantto note that its negative effects highly outweighits positives. When there is high population, the country tends to exceed its carrying capacity, which means that the country can no longer support its large population in term of resources as well as job opportunities [6]. The problem of unemployment is very alarming and demands urgent attention and solutions as its effects are very severe. Some of effect include; increasing in income inequality, rise in criminal activities like Boko-Haramand decline in the general standard of living [6].

Research attempts to analyze the influence of population growth indirectly on unemployment rate through the economic growth, Foreign Invesment and Domestic Invement. And also analyze the direct influence of population growth on unemploymen in East Java Province.

2. Method

The data analysis method used is path analysis, because this research focuses on the influence of population growth and unemployment on economic growth. The conceptual framework of this study is shown in Figure 1 below:
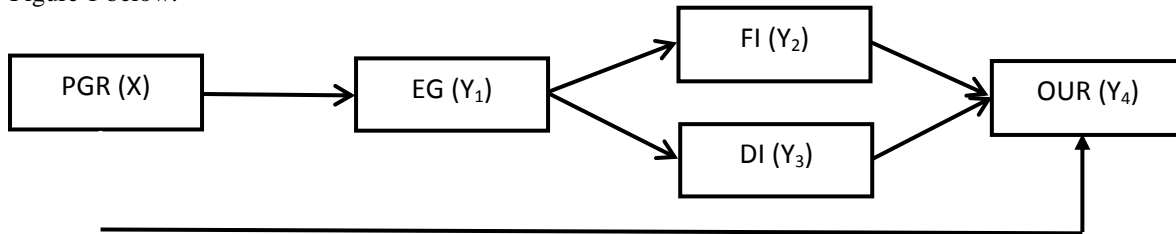

Figure 1
Conceptual Framework

PGR (X): Population Growth Rate; EG (Y_1): Economic Growth; FI (Y_2): Foreign Invesment; DI (Y_3): Domestic Invesment; OUR (Y_4): open unemployment rate.

Based on Figure 1, the purpose of this study is to analyze: 1. the influence of PGR on EG; 2. the effect of EG on FI; 3. the influence of EG on DI; 4. FI influence on OUR; 5. DI influence on OUR and 6. PGR influence on OUR. Formulation of path analysis modeling as follows:

1. $Y_1 = \beta_1 X$
2. $Y_2 = \beta_2 Y_1$
3. $Y_3 = \beta_3 Y_1$
4. $Y_4 = \beta_4 Y_2$
5. $Y_4 = \beta_5 Y_3$
6. $Y_4 = \beta_6 X$

3. Result and Discussion

The results of testing the assumption of linearity of path analysis for Figure 1 are shown in Table 1 below:

Table 1 Linearity Assumptions Testing

Independen Variable	Dependen Variabel	Test Result (α=0.05)	Information
PGR	EG	All models are significant	Linear
EG	FI	All models are significant	Linear
EG	DI	All models are significant	Linear
FI	OUR	All models are significant	Linear
DI	OUR	All models are significant	Linear
PGR	OUR	All models are significant	Linear

Source: Secondary Data and Processed

Table 1 shows that all forms of relationships between independent and dependent variables contained in the structural model are linear. Thus the assumption of linearity in path analysis is fulfiled. Based on the results of path analysis calculations, to determine the validity of the model can be used two indicators, namely: 1. The total determination coefficient number shows R^2 value of 0.9370 or 93.70% of the diversity of data can be explained by the model and the remaining 6.30% by other variables not included in the model. As a result of the triming theory, unimportant paths are discarded so that a model is supported by empirical data with the results shown in Figure 2 below:
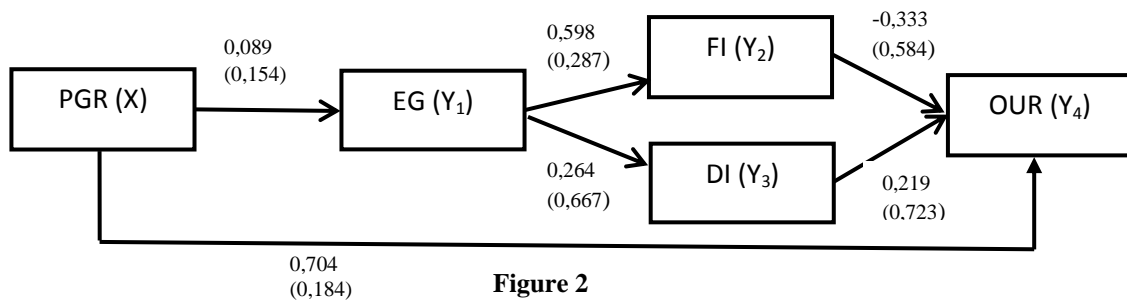
Figure 2
Path Diagram

Figure 2 shows that of the five variables used in this study, none of the variables had significant influence. This means that by using path analysis that the problem of population and unemployment in East Java does not prove to be problematic either directly or indirectly. The population growth rate has a positive effect on economic growth but is not significant. The results of this study are not coresponding with research [1]. Economic growth affects Foreign Invesment and Domestic Invesment but is not significant. The results of this study are not coresponding with research [2]. Domestic Invesment have negative effects on Open Unemployment Rate but not significant. The results of this study are not agree with research [1], [2], [3] and [4]. Population Growth Rate have positive effects on Open Unemployment Rate but not significant. The result of this study are not agree with research [5], [6].

From the results of the path analysis it can be concluded that the variables of PGR, EG, FI and DI have an effect on OUR but are not significant, this means that in East Java there can be said that there are no problems with increasing population, because population growth will cause an increase in open unemployment but this effect is not significant. This insignificant influence can be said to be influential but very small or the effect is very weak.

4. Conclusion

Population growth does not directly or indirectly affect the Open Unemployment Rate, nor does economic growth affect the investment climate in East Java. Therefore, East Java can be said to be a province that has not found problems with the rate of population growth and economic growth on unemployment. That is, even though population growth rises but its effect on unemployment is not significant.

The results of this study recommend to the East Java provincial government to improve programs and control over population growth, economic growth, foreign and domestic investment and the problem of unemployment.

The limitations of this study are that none of the variables used in this study are significant, the possibility of using data analysis tools that are less precise, so that they cannot detect more deeply about the influence of these variables.

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