The effect of population and education on poverty in East Java 2013-2017

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Abstract. The purpose of this research is to know (1) the effect of population on poverty, (2) the effect of education on poverty, and (3) the effect of population and education on poverty in East Java in 2013-2017. Data collection methods using studies documents sourced from BPS (Badan Pusat Statistik) of East Java Province 2013 - 2017. Analysis of data using multiple linear regression assisted by SPSS 20 for windows. This study proves that: (1) the population has a positive and significant effect on poverty, (2) education has a negative and significant effect on poverty, (3) population and education have a positive and significant effect on poverty. Population and education affect poverty by 98% and by 2% influenced by other variables. Government intervention in the form of social assistance funds for the poor has been able to reduce the amount of poverty in Indonesia, making it feasible to continue. As well as providing scholarships to provide education guarantees to the community, it should be accompanied by an increase in educational facilities.

1. Introduction
Developing countries like Indonesia are never separated from the various problems faced, one of which is poverty. Poverty occurs because a government that implements a system and causes the community to be in a weak position. Poverty is not on the hooks k’s with one's inability to meet the needs of life are essentially alone, will however include other lifestyle such as education, health, and shelter.

Badan Perencanaan Pembangunan Nasional (Bappenas) in 2004 defined poverty as a condition of a person or community who cannot fulfill their basic living needs to develop and maintain a better life. The basic living rights include: (1) fulfillment of food needs; (2) employment, education, health, housing, land, clean water, natural resources, and the environment; (3) a guarantee to secure early and free from the threat of violence; (4) participate in social and political life. BPS (Badan Pusat Statistik) states that Indonesia experienced an increase in the number of poor people to 27.77 million in March 2017.

Java Island has 6 provinces, where Java Island has the most population in Indonesia. In each province, there are different numbers of poor people. The number of poor people in Java is as follows:

| Province     | 2013   | 2014   | 2015   | 2016   | 2017   |
|--------------|--------|--------|--------|--------|--------|
| DKI Jakarta  | 375.70 | 412.79 | 368.67 | 385.84 | 393.13 |
| West Java    | 2191.33| 2119.48| 2242.83| 2084.06| 1887.21|
| Central Java | 2352.44| 2280.91| 2252.89| 2246.88| 2098.75|
| DIY          | 267.60 | 266.29 | 242.78 | 244.42 | 233.17 |
| East Java    | 2432.91| 2374.21| 2387.99| 2319.27| 2202.64|
| Banten       | 341.36 | 324.60 | 345.33 | 328.87 | 349.92 |

Source: Badan Pusat Statistik
East Java contributed to the highest poverty rate in Java during 2013–2017. During this period, the number of poor people declined, except in 2015 where poverty increased by 13,780 people. However, in the following year, namely, in 2016 it declined again.

Poverty is closely tied with a problem early welfare of the community and be a minimum level obtained based on the standard of living in a country. Sharp in Kuncoro (2006) stated that from an economic point of poverty caused by three things, among others (1) there is an injustice in the distribution of income due to differences in resource ownership patterns, (2) there is a quality of human resources are different, (3) poverty arises because of access in different capital.

Population growth is one of the factors causing poverty. A high labor force is formed from a high population. Todaro (2000) states that rapid population growth drives the problem of underdevelopment and makes development prospects even further away. The increase in population without being balanced with an increase in other development factors is of course income and demand are difficult to increase.

Education is one important factor in advancing a nation. Quality of human resources are produced from quality education as well, because human resources are one of the supporting factors of development. Ihsan (2005) states that potentials, both physical and spiritual traits, can be developed through education that is adapted to the values in society and culture. Hamalik (2001) explains education is a process to influence a person so that he can adjust to the environment and will cause changes in him to function strongly in society.

The purpose of this research is to know: (1) the effect of population on poverty, (2) the effect of education on poverty, and (3) the effect of population and education on poverty in East Java in 2013–2017.

2. Method
This research uses quantitative methods. Data were collected using study source documents BPS (Badan Pusat Statistik), covering population, the average length of the school, and the number of poor people in East Java in 2013–2017. Analysis of the data used is multiple linear regression assisted by SPSS 20 for windows.

3. Results and Discussion
3.1 T-test
To test the effect of independent variables partially on dependent variables can use a t-test. Significance values that shows value less than 0.05 indicates that the dependent variable is influenced by the independent variable. The calculation results are as follows:

| Model       | t     | Sig.  |
|-------------|-------|-------|
| (Constant)  | -3.506| 0.073 |
| Population  | 4.666 | 0.043 |
| Education   | -5.422| 0.032 |

The significance value of the X1 variable or the total population is 0.043. This means the number of people influenced positively and significantly to poverty in East Java in 2013–2017. The research of Elda Wahyu Azizah and friends with the title “The effect of Education, Per Capita Income and Population on Poverty in East Java Province” support the results of this study. Another study from Herman entitled “Effect of Education Level and Population Against Poverty Level in Pekanbaru” states that the population has a significant effect on poverty in Pekanbaru. Saputra in a study entitled Analysis of the Effect of Population, GDRP, HDI, Unemployment on Poverty Level in Central Java Regency / City states that the population has a significant effect on poverty levels in Central Java District / City.
A high population is a great potential for a country. Smith stated that economic growth can be driven by population growth, where the population is seen as a workforce that can supply the labor market. Malthus (in Skuosen, 2009) states that the population tends to increase according to a series of measurements, while the production of food (natural resources) tends to increase according to a series of counts. Population growth that continues to increase and is not accompanied by an increase in the number of natural resources will cause poverty.

The significance value of the X2 variable or educational variable shows the number 0.032. The magnitude of this figure means that education has a negative and significant effect on poverty in East Java in 2013-2017. This is according to research conducted by Alfi Amalia entitled The Effects of Education, Unemployment and Gender Inequality on Poverty in North Sumatra, which states that the educational variable has a negative and significant effect on the poverty variable. Also, the study entitled Analysis of the Effects of Education, Health, and the Number of Women Working Against Poverty in East Java conducted by Anisa showed that the education variable had a negative and significant effect on poverty. I Wayan Sudiana and I Ketut Sudiana in a study entitled The Effect of GDRP, Education and Workforce Structure on Poverty in Bali Province also stated that education variables had a negative and significant effect on poverty in the Province of Bali in 1995-2013.

The human capital theory states that the higher the level of education, the greater the income earned (Todaro and Smith, 2011). A workforce with higher education will have high productivity in producing goods and services. High productivity will be followed by a high income. High income makes people's purchasing power increase so that their basic needs can be met. Thus the community will avoid poverty.

3.2 F-Test
The F test was carried out to determine the simultaneous influence of the variables X1 and X2 on the Y variable. If the significance value is less than 0.05, it can be stated the variables X1 and X2 simultaneously influence the variable Y. The calculation results are as follows:

| Model     | F       | Sig.    |
|-----------|---------|---------|
| Regression| 98.288  | 0.010   |
| Residual  |         |         |
| Total     |         |         |

The significance value is 0.010. Due to the significant value of 0.010 <0.05 it can be concluded that the number of population and education simultaneously influence significantly to poverty in of East Java in 2013-2017. Saharuddin Didu and Ferri Fauzia’s research entitled The Effect of Population, Education, and Economic Growth on Poverty in Lebak which states that simultaneously affect poverty in Lebak. The study entitled Analysis of the effect of population, education, and unemployment on poverty in East Java conducted by Mahsunah shows that the population and education variables affect poverty in East Java. Also, Aminah in a study entitled The Effect of Education Level and Population on Poverty Level in Bone Regency in 2008-2017 also mentioned that simultaneously the level of education and population affected poverty.

Malthus said that population growth that continues to increase uncontrollably will deplete natural resources. This resulted in the emergence of hunger, disease, and other human sufferings. Philip Hauser said that poverty was created because labor did not work optimally, due to the mismatch between education and the work undertaken. This happens because the number of people entering the job market is very large so it forces job seekers to get work as soon as possible even though it is not under their educational background.

3.3 Coefficient of Determination
The magnitude of the effect given by the independent variable on the dependent variable can be seen from the coefficient of determination. The calculation results are as follows:
Table 4. Coefficient of Determination

| Model | R   | R Square | Adjusted R Square |
|-------|-----|----------|-------------------|
| 1     | .995 | .990     | .980              |

Source: SPSS Output

The adjusted R square value shows a figure of 0.980, which means that poverty is influenced by the population and education by 98%, and the other 2% is influenced by other variables.

3.4 Data Analysis

The ease of reading and interpreting data is the purpose of data analysis. The calculation results are as follows:

Table 5. Regression Analysis

| Model          | Unstandardized Coefficients | Standardized Coefficients |
|----------------|-----------------------------|---------------------------|
|                | B              | Std. Error | Beta |                |
| (Constant)     | -31094,340    | 8867,877   |       |                |
| 1 Population   | 1,933          | .414       | 5,735 |                |
| Education      | -457,856      | 84,450     | -6,664 |                |

Source: SPSS output

Regression equation based on the table:

\[ Y = -31094,340 + 1,933 X_1 - 457,856 X_2 + e \]

The regression equation above means that:

a. The regression coefficient variable population amounted to 1,933; meaning that if the education variable is constant and the population number variable increases 1%, then poverty will increase by 1,933. Positive coefficient value means there is a positive relationship between the population and poverty.

b. The educational variable regression coefficient of -457,856; meaning if the variable population of constant and variable education increased 1%, then poverty will shortly is suffering a decline amounted to 457,856. The negative coefficient value means that education and poverty have a negative relationship.

4. Conclusion

The conclusions that can be drawn are as follows:

a. The population influence is a positive and significant to poverty.

b. The Education affects negatively and significantly to poverty.

c. The number of population and education has a positive and significant impact on poverty in East Java in 2013-2017.

Suggestions that the authors propose as following:

a. Government intervention in the form of social assistance funds for the poor can reduce the amount of poverty in Indonesia, making it feasible to continue.

b. Scholarships provide education guarantees to the community, should be accompanied by an increase in educational facilities.

c. Further research needs to be done that not only uses these three variables.

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