

The effect of poverty and health on the Human Development Index in Central Java Province

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Abstract

The Human Development Index (HDI) is one of the data and information used by local governments to measure the achievement of human development. This study aims to analyze the effect of the influence of the headcount on poverty ratio and health as seen from the amount of life expectancy on the Human Development Index in Central Java Province. This study was completed using multiple linear regression analysis with the help of SPSS 2.0 software. The results of this study indicate headcount of poverty ratio and health have a significant effect on the human development index, which is 95.2% and other factors influence 4.8%. Headcount of poverty ratio shows a significant negative effect on the Human Development Index in Central Java Province health as seen from the amount of the life expectancy show a positive effect and insignificant effect on the Human Development Index in Central Java Province.

Keywords: Health; Human Development Index; Poverty

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1. Introduction

The Central Statistics Agency (BPS) stated the the island of Java is inhabited by 151.59 million people or around 56.10% of the entire Indonesian population. Synchronization of the 2020 Population Census and administrative data of the Directorate General of Dukcapil of the Ministry of Home Affairs puts Central Java in third place as the province with the most population in Indonesia. Central Java it self has a population of 36,516,035 people with an area of 32,800.69 km², or about 28.94% of the area of the island of Java. Since 2017 the number of people in Central Java it self has increased by 6.18%, which means that within three years there has been an increase in population of up to 2,258,170 people. This high growth rate is



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not accompanied by a decrease in the level of poverty and a low level of human development.

Economic development today is also measured through human development which is seen from the level of quality of life in each country. The focus of development has shifted from physical development of infrastructure to human development, that is about people, about expanding people's choices to live a creative life, full of freedom and dignity (Maria et al., 2021). Development not only calculated how per capita income is obtained, but development is a multidimensional discussion that includes Social, Community, Law, Economics, and Security (Arisman, 2018).

In 1990 the United Nations (UN) created a comprehensive measure, namely the human development index (HDI) to see the quality or results of human development in a country. IPM explains how residents can access development outcomes in obtaining income, health, education, and etc. Human Development Index (HDI) ad introduced by the United Nation Development Programme or UNDP (1990) become one of the indicators in measuring the quality of human development in a country or region at a certain period of time it was first introduces in 1990 and published regularly in the Human Development Report (HDR) report.

The Human Development Index (HDI) confirms that human development is not only centered on the economy (income) alone, but all aspects of the life of the population must be well supported by the state (Sugiharto & Setiawan, 2015). The HDI also reflects the extent to which the state is able to fulfill the basic rights of its citizens. To see an overview of the Human Development Index, especially in Central Java Province, it can be seen in Table 1.

Tabel 1.

Human Development Index (percent) 2010 - 2021

Year	HDI (Percent)
2010	66.08
2011	66.64
2012	67.21
2013	68.02
2014	68.78
2015	69.94
2016	69.98
2017	70.52
2018	71.12
2019	71.73
2020	71.87
2021	72.16

Source: BPS Central Java 2010 - 2021

Based on Table 1, it can be seen that the percentage of the Human Development Index (HDI) in 2010 to 2021 continues to increase. In fact, this is a good number for Central Java Province with the continued increase in HDI. This figure certainly shows that there is a quality or result of human development that continues to improve. In addition, it can also be interpreted that infrastructure development and also how the community's ability to access public facilities is all going very well.

The quality of life of the people of a country is illustrated by its level of poverty, it is based on the negative relationship between the general welfare and the level of poverty (Pratiwi et al., 2018). The higher the poverty rate in a country, the lower the welfare of its

population. Several countries, especially developing countries, consider human development and poverty alleviation as one of the benchmarks for successful development and plays an important role in improving the level of welfare of the people (Amaluddin et al., 2008). The problem of poverty is a complex problem so that the efforts made cover various aspects of people's lives. Poverty is an unavoidable problem in the case of government, Central Java is one of the regions that has the largest number of poor people in Indonesia. This can be seen from the following Table 2.

Tabel 2.

Percentage of poor population (percent) 2010 - 2021

Year	Poor Population (Percent)
2010	16.11
2011	16.21
2012	14.98
2013	14.44
2014	13.58
2015	13.58
2016	13.27
2017	13.01
2018	11.32
2019	10.80
2020	11.41
2021	11.79

Source : BPS Central Java 2010 - 2021

Central Java has a target of reducing poverty by making efforts to overcome it by implementing five pillars known as the "Grand Strategy". The content of this strategy is to expand employment opportunities, empower communities, increase capacity, provide social protection, and regional partnerships. The Grand Strategy it self aims to create an economic, political, and social environment so that the poor have the opportunity to fulfill their rights in improving the standard of living, empowering communities to accelerate institutions and expand poor involvement in decision-making and public policies that guarantee basic needs and rights. The poor are also expected to take advantage of environmental developments, as well as get social protection for a sense of security (Syahza & Suarman, 2014).

The World Bank in Saputra (2011) states that there are various causes of poverty such as the lack of income and assets to meet basic needs ranging from food, clothing, housing to health levels and also education. Health is used as one of the aspects that need to be taken into account in looking at the economic growth of Anggraheni (2016). The purpose of development needs to be focused on humans where humans are a wealth for their country. Kuncoro (2010) also revealed that its main development should be focused on improving the quality of human resources. The main purpose of development is to create an environment that allows its people to be able to enjoy a long, healthy life, and also live a productive life. Suradi (2007) states poverty as a condition that is the opposite of human development, if the concept of human development shows human progress in meeting the needs of his life then poverty is indicated by the inability of man to meet the needs of his life. In other words, human development and poverty are conditions that occupy opposite poles.

Central Java has a high population growth rate which is estimated to grow 0.67% per year. This rapid population growth allows Central Java to have great human resource potential to be empowered. The empowerment of human resources is side by side with poverty, this is because poverty will prevent each individual from consuming nutritious

nutrients, get a proper education, as well as obtain an environment that gives influence to healthy life. Without healthy individuals and good education, the existing human resources will be of low quality, this will have an impact on low levels of productivity and low levels of income earned (Puspasari, 2020). This will affect the level of human development in an area. In the following Table 3, it can be seen about the percentage of life expectancy in Central Java Province.

Table 3.

Life Expectancy of Central Java Province (percent) 2010 – 2021

Year	Life Expectancy (Percent)
2010	71.40
2011	71.55
2012	71.70
2013	73.28
2014	73.88
2015	73.96
2016	74.02
2017	74.08
2018	74.19
2019	74.25
2020	74.34
2021	74.51

Source: BPS Central Java 2010 - 2021

Based on Table 3, we can see that the average percentage of life expectancy (health) of 73.43% continues to increase. If we look at it at a glance, it can be concluded that between the Human Development Index and the life expectancy (health) both have increased. This could be one way of the influence of these two variables. Based on the background above, this study aims to determine the effect of poverty and health on the Human Development Index in Central Java Province. This study aims to analyze the effect of poverty and health partially and simultaneously on HDI in Central Java in 2010-2021.

2. Method, Data, and Analysis

In this study, the variables used were poverty, health, and Human Development Index (HDI). The independent variables used are poverty and health. Meanwhile, what is used as a dependent variable is the Human Development Index (HDI). The data used in this study came from secondary data and used time series data, namely in 2010 – 2021 whose data was taken from BPS data from Central Java Province.

This study uses two analytical methods, namely descriptive and inferential analysis. This descriptive analysis is used to provide an overview and also a description of the object based on the data and information that is already available. For this descriptive analysis is presented in the form of a table assisted by Microsoft Excel software. Meanwhile, inference analysis is used to determine the effect of poverty and health on the Human Development Index (HDI) in Central Java in the period 2010 – 2021. The analysis used is multiple linear analysis whose data processing is assisted by using SPSS software.

The use of multiple linear regression analysis is that this linear regression model involves more than one free variable and an independent variable. Meanwhile, in this study, there is a percentage of poverty and health levels which are used as independent variables. Percentage of the Human Development Index (HDI) as a dependent variable. So

that way it is appropriate to use multiple linear regression analysis. The multiple linear regression model can be written in the following equation:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where, Y = Human Development Index; X_1 = Proverty; X_2 = Health; α = constant; $\beta_{1,2}$ = coefficient of estimate; ε = error standard.

In multiple linear regression this is the same as other parametric tests that have conditions and tests of classical assumptions which of course must be met. The classical assumption itself consists of: normality test, multicholinerity, heteroskedasticity and autocorrelation test.

3. Results

Normality Test, which is used to see about the residual value whether it is normally distributed or not. The good thing is if the residual value is normally distributed. The results of data processing, it is known that the significance value obtained produces 0.962 which means that it is greater than 0.05. So that it can be concluded that the data is normally distributed and the conditions of normality have been met.

Multicholinerity Test, which is used to find out about the degree of correlation. If there is a high correlation, there is a disturbance in the variable. In this multicholinerity test, it is carried out to find out whether there is a perfect/definite linear relationship between all free variables in a regression. This test is carried out using the VIF (Variance Inflating Factor) value which then if the value is less than 10, it is said that there is no multicholinerity. The output in "coefficients" in the "collinearity statistics" section, it is known that the tolerance value for the poverty and health variable is 0.201 which means greater than 0.10, and the VIF value for the poverty and health variable is 4.983 < 10.00. So it can be concluded that there are no symptoms of multicholinerity in the regression model.

Heteroskedasticity Test, which is used as a tester regarding the existence of unequal differences between one residue and another abervation. The results of data processing, the regression value is greater than 0.05 so it can be concluded that no heteroskedasticity occurs. Autocorrelation Test, which is used to see the correlation between a period t and a previous period using the formula $(t-1)$ which includes testing the influence of one variable with another. For this test itself is carried out on time series data. Based on the results of data processing, it is known that the value of asymp. sig. (2-tailed) is 0.762 > 0.05 which means that it can be concluded that there is no autocorrelation in the regression model.

Table 4.

Test Results of Multiple Regression Analysis

Variable	Coef.	t-test	Sig.	Conclusion
Poverty	-0.673	-4.119	0.003	Significant
Health	0.326	1.999	0.077	Insignificant
Sum of Squares				47.194
Mean Square				23.597
R-square				0.952
Adj. R-square				0.941
F-test				88.920
Sig.				0.000
Observations				11

Dependent variable: Human Development Index (HDI)

Based on the Table 4, it is known for the value of Sig. The poverty variable is 0.003 which means the value of significance less than the probability of 0.05 then it can be revealed that there is an influence of poverty on the Human Development Index. Based on Table 4, the value of significance is known health variable is 0.077 which means that the value of significance greater than the probability of 0.05 then it can be revealed that there is no health effect on the Human Development Index. From the Table 4, it is known that the coefficient of determination or R-square is 0.952. The magnitude of the coefficient of determination (R-square) of 0.952 is equal to 95.2%. This figure provides an understanding that the variables of poverty and health simultaneously affect the Human Development Index variable, which is 95.2%.

4. Discussion

Effect of Poverty on Human Development Index (HDI)

The results show that poverty has a significant effect on the Human Development Index in Central Java. The results of this study indicate that poverty has a relationship and is a determining factor in the human development process. The results of this study are in accordance with research conducted by [Usmaliadanti & Handayani \(2011\)](#) that in Central Java the number of poor people has a significant effect on the Human Development Index.

If the poverty line continues to rise, it can be said that humans will be increasingly unable to meet their basic needs ([Muliza et al., 2017](#)). From this it will be seen how low income is obtained which will then make demand also low ([Alamsyah, 2019](#)). Human resources will also be few because with a high level of poverty, humans are unable to obtain a proper education so that a population will be created who have underdevelopment and lack of education, resulting in the quality of human resources being low ([Sayifullah & Gandasari, 2016](#)). In addition, in general, the poor are also more focused on meeting basic needs and have no interest in activities that are not directly related to basic needs. So this makes it clear that the higher the poverty rate, the lower the level of human development where the poor tend to have low purchasing power ([Pudjiyanto & Syawie, 2015](#)).

Effect of Health on Human Development Index (HDI)

The results showed that health had no significant effect on the human development index in Central Java Province. The results of this study are different from the results of research conducted by [Affan \(2014\)](#) which shows that in Central Java, health significantly affected the Human Development Index. The results if this study differ due to the period used in the study, but the results of the study are in line with the results of [Usmaliadanti & Handayani's \(2011\)](#) research which shows that health in Central Java does not significantly affect the Human Development Index.

The data used is life expectancy figures, which means that the data is taken from the average estimate of the number of the years that a person can take from birth. This life expectancy figure reflects the degree of health of a society. This figure is used by the government as a tool for evaluating government performance in improving the welfare of the population in general, and especially in increasing the degree of health. However, health also needs to be balanced with sufficient education and training ([Setiawan, 2018](#)). If only viewed with the level of health alone, it will not be enough to assess its effect on the labor market, especially in improving human development. So there needs to be enough education and training to be balanced. The lack of education and training in humans will

be less absorbed or less affect the labor market so that it does not necessarily affect human development (Alam, 2016).

5. Conclusion

This study analyzes the effect of poverty and health on the Human Development Index. The results show that poverty has a significant effect on the Human Development Index (HDI) in Central Java. This is because poverty is used as one of the benchmarks in seeing the level of human development and also the level of community welfare. Because poor people tend to override supporting needs which will ultimately affect the quality of human resources which of course will also affect human development. Meanwhile, health has no significant effect on the Human Development Index (HDI) in Central Java. This is because health is not enough to influence the labor market. The quality of human resources also needs to be seen from education and training as well. So that if only measured by the value of health alone is not enough to affect human development.

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