

The Impact of Poverty and Capital Expenditure on The Human Development Index in North Sumatra

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Abstract

Human development in north Sumatra is showing progress. However, the human development disparity in the North Sumatra province is still showing. The problem must be overcome quickly to prevent further disparity from developing. The study was to analyze the impact of poverty and capital expenditure on Human Development Index (HDI) of regency/city in North Sumatra. This study uses quantitative descriptive methods which have been provided by previous study conducted on 33 regencies/cities in the North Sumatra. The data covers the poverty rate, capital expenditure and HDI of regency/city in North Sumatra in 2019. Data was accessed online on the Central Statistical Agency (BPS) for North Sumatra Province website. Data analysis method using multiple linear regression analysis method. Analysis shows that poverty has a negative and significant impact on HDI of regency/city in North Sumatra. Meanwhile, capital expenditure has a positive and insignificant effect on of regency/city in North Sumatra. Poverty and capital expenditure are simultaneously significant on HDI of regency/city in North Sumatra. The result of this study implicates allocation of capital expenditure and the creation of human development strategies for the district or city in the north Sumatra province.

Keywords: human development index, poverty, capital expenditure

INTRODUCTION

Human development in the North Sumatra province continues to show progress (Bangun, 2020). This is seen in the growing value of the human development index (HDI) that has increased over the years. According to the Statistical Agency (BPS) for North Sumatra Province, since 2016, the North Sumatra province's HDI has reached 70 and is highly rated. In the following years it steadily increased to 71.57 in 2017, 71.18 in 2018 and 71.74 in 2019.

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Although the pace of increase is slow, the growth is indicative of a positive development in North Sumatra.

HDI shows the extent of human development in a country or region. Thus, the growth of HDI reflects the success of governments in improving human development through various development programs. However, HDI in north Sumatra has increased. But that doesn't rule out the fact that there is still a human development problem in north Sumatra. Statistical Agency (BPS) for North Sumatra Province data for 2019 shows as many as 16 out of 33 regencies/cities in North Sumatra province have an HDI below 70 or moderate. The rest is higher than others. Only Medan City has a very high HDI. From these data it can be seen that there are disparities in human development between regions in the province of Sumatra. This coincides with the discovery of AS (2019) that HDI has not been distributed equally between districts and cities in Indonesia. The problem of development disparity must quickly be solved to prevent the disparity from widening.

The disparity of human development can be reduced or eliminated by encouraging higher medium-scale HDI of a region. However, the effort was not easy. Inhibitory and proponent factors of HDI must be clearly identified. Therefore, this study aims at resulting correct formulation of the strategies and policies of improvements in human development. The findings of this study will be expected to contribute to the creation of strategies and policies.

HDI reflects the attainment of population access in terms of income, education, and health development. The research on HDI has been extensive. Previous studies found that poverty is one of the main obstacles to HDI improvements. This refers to several discoveries that poverty affects the HDI (Astriani et al., 2021; Diba et al., 2018; Hidayat & Woyanti, 2021; Mirza, 2012; Muliza et al., 2017). Poverty is synonymous with disempowerment, isolation, minimal access, and vulnerability (Tursilarini et al., 2019). People living in poverty have difficulty accessing education, health and providing the bare necessities. It reduces the quality of life for people who live in the circle of poverty.

Poverty will make it difficult for poor people to access quality education, adequate health services and uniform incomes (Sholichah, 2017). Without government intervention, the poor would still live in poverty. It is undeniable that governments have made efforts to provide poor people access to education and health services. Some programs are considered to be successful, such as 6-year and 9-year compulsory education (Zalukhu & Collyn, 2021), the national health insurance program (Pasaribu & Purnamasari, 2018) and other programs. Yet, discrimination against the poor remains to be seen. Poor people have low access to health care (Widianto, 2013). In this case, poverty poses a major obstacle to the improvement of public welfare.

The improvement of HDI is not sufficient if it is only a government program in opening wide access to the poor to enjoy the social services of the government. The development and improvements of economic infrastructure, education and health should be of more concern to the government (Mahulauw et al., 2016). In infrastructure development, governments use capital expenditure as a source of finance. Therefore, capital expenditure is closely associated with improvement on HDI. Previous studies found that capital expenditure has a positive and significant impact on HDI (Khikmah et al., 2020; Sari & Supadmi, 2016). That is raising capital spending will drive up the HDI. In this case, the more capital expenditure spent, the more economic infrastructure, education infrastructure and health infrastructure could be built. This development will have a bearing on increasing public welfare.

The increase in public welfare reflected by the increase of the HDI became the principal task assigned by every regional leader in North Sumatra. Human development disparity between regions must be overcome rapidly, resulting in an increasing HDI of the North Sumatra province. This research aims to analyze the impact of poverty and capital expenditure on HDI of regency/city in North Sumatra, both partially and simultaneously. This research is expected to contribute to the creation of strategies and policies to enhance human development in North Sumatra.

METHOD

This research is a quantitative research that was conducted in 33 regencies/cities in North Sumatra province. The data used is secondary data, including data on the percentage of poor people, capital expenditure and HDI in regencies/cities in the North Sumatra province in 2019. Data is accessed online on Central Statistical Agency (BPS) for North Sumatra Province website.

The data analysis method used is multiple linear regression analysis method. Data analysis using IBM SPSS 26 software assistance. As for a data analysis sequence starting with a classic assumption test. Classical assumption testing in this research consists of normality test, multicollinearity test, and heteroscedasticity test. The normality test uses the Kolomogorov-Smirnov test. Multicollinearity testing uses tolerance value and Variance Inflation Factor (VIF) value. While testing heteroscedasticity using the Glejser test. If from the test results no normality, multicollinearity and heteroscedasticity problems are found, the analysis stage continues with the coefficient of determination (R Square) test and hypothesis testing. Hypothesis testing consists of simultaneous significance tests and partial significance tests.

This research equation may be written as follows:

$$Y = a - b_1X_1 + b_2X_2 + e$$

Explanation:

- Y = Human Development Index
- X₁ = Poverty
- X₂ = Capital Expenditure
- a = Constant
- b₁,b₂ = Regression Coefficient
- e = Error Standard

RESULT AND DISCUSSION

Classic Assumption Testing

The testing of classical assumptions in this study included normality tests, multicollinearity test, and heteroscedasticity test. The normal data test in this research uses the

Kolmogorov-Smirnov test. Data is said to be normally distributed if the Asymp. Sig. (2-tailed) > 0.05.

Table 1 Summary of Normality Test

	Value	Explanation
N	33	Normally distributed
Asymp. Sig. (2-tailed)	0,200	Normally distributed

Source: Processed data (2021)

Table 1 shows the value of Asymp. Sig. (2-tailed) value of 0.200. Asymp. Sig. (2-tailed) > 0.05. Thus, it can be concluded that there is no normality problem in the research model

Table 2 Summary of Multicollinearity Test

Independent Variables	Tolerance	VIF	Explanation
Poverty	0,950	1,053	No multicollinearity
Capital expenditure	0,950	1,053	No multicollinearity

Source: Processed data (2022)

Table 2 shows that the tolerance values of the poverty and capital expenditure variables are >0.1. Similarly, the VIF values of both variables are <10. This indicates that there is no multicollinearity problem in the research model.

Table 3 Summary of Heteroskedasticity Test

Independent Variables	Sig.	Explanation
Poverty	0,975	No heteroskedasticity
Capital expenditure	0,642	No heteroskedasticity

Source: Processed data (2021)

Heteroscedasticity testing uses the Glejser test. The summary of the Glejser test results presented in Table 3 shows that the probability value of the significance of the poverty variable is 0.975 and capital expenditure is 0.642. The probability value of both variables is >0.05. Thus, it can be concluded that there is no heteroscedasticity problem in the model.

Multiple Linear Regression Analysis

Multiple Linear regression analysis summary presented in the following table 4:

Table 4 Summary of Multiple Linear Regression Analysis

Variabel Independen	B
Constant	72,869
Poverty	-0,726
Capital expenditure	0,213

Source: Processed data (2021)

Based on summary of analysis result on table 4, obtained research equation:

$$Y = 72,869 - 0,726X_1 + 0,213X_2$$

The equation can be explained as follows:

1. The constant value of 72.869 indicates that if poverty and capital expenditure are zero, then the Human Development Index of regency/city in North Sumatra province is 72.869.
2. The regression coefficient of the poverty variable is -0.726. This means that if the poverty rate increases by 1 percent and other independent variables remain constant, then the Human Development Index of regency/city in North Sumatra province decreases by 0.726. Conversely, a decrease in the poverty rate by 1 percent will increase the Human Development Index of regency/city in North Sumatra province by 0.726. Statistically, poverty has a negative relationship with HDI.
3. The regression coefficient of the capital expenditure variable is 0.213. This means that if capital expenditure increases by 1 percent and other independent variables remain constant, then the Human Development Index of regency/city in North Sumatra province increases by 0.213. Conversely, a decrease in capital expenditure by 1 percent will reduce the Human Development Index of regency/city in North Sumatra province by 0.213. Statistically, expenditure has a positive relationship with HDI.

Testing the Coefficient of Determination

The coefficient of determinations test aims to see how many independent variables can be in the research model to explain the variation of a dependent variable. The coefficient of determinations in this research is indicated by Adjusted R Square. Summary of coefficient determinations test result presented in the following Table 5:

Table 5 Summary of The Coefficient Test of Determination

Variabel Independen	B
R	0,731
R Square	0,534
Adjusted R Square	0,503

Source: Processed data (2021)

Table 5 shows the Adjusted R Square value of 0.503. This means that poverty and capital expenditure are able to explain 50.3 percent of the variation in HDI, while the remaining 49.7 percent is explained by other variables not included in this research model.

Hypothesis Test

The research tested the impact of poverty and capital expenditure on the HDI, both partial and simultaneous. The research suggests that poverty affects the HDI negatively, while capital expenditure has a positive effect on HDI. Both of these variables are suspected to have simultaneous effects on the HDI. It will be tested with t test and F test If the probability value of the significance of the t test is <0.05 , then the independent variable is stated to partially have a significant effect on the dependent variable, and vice versa. If the probability value of the significance of the F test <0.05 , then the independent variable is stated to simultaneously have a significant effect on the dependent variable, and vice versa. The research uses alpha 5%.

Table 6 Summary of t Test and F Test

Variable	Coefficient	t Statistic	Prob.
Poverty	-0.726	-5.668	0.000
Capital Expenditure	0.213	0.178	0.860
F-statistic			17.167
Prob(F-statistic)			0.000

Source: Processed data (2021)

Table 6 shows an F-test of 17.167 with p-value of 0,000. The p-value is smaller than 0.05. Therefore, it is concluded that poverty and capital expenditure simultaneously have a significant effect on the HDI of regency/city in North Sumatra.

The summary of test results on table 6 shows a t-value of poverty of -5.668 with a probability value of 0,000. The probability rate is smaller than 0.05. Furthermore, poverty is known to have a negative regression coefficient. Thus, it is concluded that poverty has a negative and significant impact on the HDI of regency/city in North Sumatra.

In contrast to poverty, the capital expenditure influence on the HDI was insignificant. This is not in line with initial expectations. Based on the test results, capital expenditure is known to have a t-value of 0.178 with a probability value of 0.860. The probability value is smaller than 0.05. The regression coefficient of capital expenditure is positive. Thus, it is concluded that capital expenditure has a positive and insignificant effect on the HDI of regency/city in North Sumatra.

DISCUSSION

Effect of Poverty to the HDI

The analysis result shows that poverty has a negative and significant impact on the HDI of regency/city in North Sumatra. Thus, increasing the poverty rate will affect lower HDI, and vice versa. Statistically, a 1 percent increase in poverty would lower the HDI by 0.726. These results coincide with the research of Muliza et al. (2017), Hidayat & Woyanti (2021), Mirza (2012), Diba et al. (2018), Astriani et al. (2021).

HDI measures population reach in terms of income, education, and health. Thus, the dimension in human development, not only from the educational side, but also from income, and access to health. These three dimensions must be driven simultaneously to better human development (Risidiana, 2020). The results of this study show that poverty is a major obstacle to the development of human development in North Sumatra. Therefore, the eradication of poverty is essential to the success of human development (Atkinson & Marlier, 2011).

Effect of capital expenditure to the HDI

The analysis concluded that capital expenditure has an insignificant positive effect on the HDI of regency/city in North Sumatra. That is, raises in capital expenditure will impact an HDI increase even if it is insignificant. The results of this study coincided with the Astriani et al. (2021) and Sugion & Purbadharmaja (2021).

Capital expenditure is essentially used to finance the development of public infrastructure (Kurniasari & Kurnia, 2021), both educational infrastructure, economic infrastructure and health infrastructure. Therefore, capital expenditure should play an important role in improving HDI. However, the study has proved that capital expenditure has no significant impact on the HDI. There are some possibilities that make the impact of capital expenditure on human development insignificant, including the possibility of capital expenditure allocated to long-term development, such as the development of inter-regional access, and the construction of jobs that have had greater benefits felt over long periods of time (Sugion & Purbadharmaja, 2021). Moreover, the allocation of capital expenditure is sometimes an inaccurate target (Aprianam Dina & Suryanto, 2010; Wahyuni & Ardini, 2018), so the benefits are not felt by society. The latter is the allocation of too small capital expenditure. Regional governments in allocating regional expenditure tend to prioritize routine expenditures over capital expenditures (Adyatma & Oktaviani, 2015; Dewi & Suyanto, 2015; Nuarisa, 2013). As a result, the funds allotted for capital expenditure became lower. According to the research, there are two possibilities, the first, there are indications that capital expenditure allocations are not targeted

at regency/city in North Sumatra. The second, there is indication of a low capital expenditure allocation fund due to its low priority.

CONCLUSION

Human development in North Sumatra shows progress. This can be seen from the HDI of North Sumatra, which has been classified as high and has consistently increased from year to year. Poverty has become a major factor in the improvement of human development in North Sumatra. This led to an analysis that found that poverty affected negatively and significantly to the HDI of regency/city in North Sumatra. Meanwhile, Capital expenditure has a positive impact on the HDI of regency/city in North Sumatra. Nevertheless, if poverty reduction and development of education infrastructure, both economic and health will be done simultaneously, it will have a significant impact on the increase of the HDI of regency/city in North Sumatra. This refers to the results of the simultant test that show poverty and capital expenditure are simultaneously influential to the HDI of regency/city in North Sumatra.

The research emphasizes that the district/city government in North Sumatra province of the importance of reducing poverty and the development of economic infrastructure, education and health through improved capital expenditure. Capital expenditure should be a proper priority and allocated, as it will have a positive effect on improving human development in the long run. The result of this study implicates allocation of capital expenditure and the creation of human development strategies for the regency/city in North Sumatra.

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