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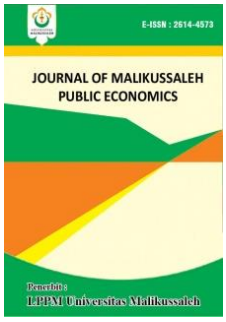
THE EFFECT OF HEALTH, EDUCATION, INFRASTRUCTURE AND ECONOMIC GROWTH EXPENDITURES ON THE HUMAN DEVELOPMENT INDEX IN ACEH PROVINCE



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ARTICLEINFORMATION

Keywords: *Health Expenditure, Education, Infrastructure, Economic Growth, Human Development Index.*

ABSTRACT

The influence of expenditure on health, education, infrastructure, and economic growth on the Human Development Index in Aceh province was investigated in this study. The panel data regression approach was utilized to investigate the connection between the independent and dependent variables. The panel data model was chosen using the Chow, Hausmant, and LM-Tests. The Random Effect Model was found most effective. The findings indicated that government expenditure on health, education, and infrastructure positively and significantly affected the Aceh Province Human Development Index, however economic development had no effect on the Aceh Province Human Development Index. Simultaneously, government expenditure on health, education, infrastructure, and economic growth affected the Aceh Province Human Development Index favorably and considerably. The magnitude of the effect was 0.7528, or 75.28 percent, with the remaining 24.22 percent influenced by factors outside the model.

I. INTRODUCTION

The main objective of regional development is to benefit the community, which may be accomplished in part via boosting human resources. The Human Development Index can be used to assess human development. The human development index may be measured in three ways: life expectancy, literacy rate, average duration of schooling, and per capita income.(BPS, 2020).

According to (BPS, 2020), Human development is the process of increasing human capabilities. The most essential of these options are to live a long and healthy life, to be educated, and to have access to the means necessary to live a decent life.(Sulistyowati et al., 2017), Specifically, as a process of expanding choices for the population (enlarging people's choices), which may be understood as a process of efforts toward expanding choices as well as the level attained as a result of these efforts.

The Human Development Index measures human achievement in a certain field. The HDI is calculated using data that can describe four components: life expectancy, which represents the health sector, literacy rate and average length of schooling, which measure educational development achievements, and purchasing strength / purchasing power parity (PPP) of the community toward a number of basic needs. based on the average size, (BPS, 2020)

Aceh Province's human development has advanced significantly, as seen by a rise in the Human Development Index (IPM). Aceh Province is divided into 23 regencies and cities, with West Aceh Regency, Aceh Besar Regency, East Aceh Regency, Central Aceh Regency, Pidie Regency, Bireuen Regency, and North Aceh Regency having a growing HDI during the previous 5 years.

This district was selected because it has a larger spending than a lot of other districts.

The HDI's components have also grown in number. In 2019, newborns had a chance of living to be 69.87 years old, up 0.23 years over the previous year. In 2019, children aged 7 have the possibility to attend school for 14.30 years, an increase of 0.03 years from 2018. Meanwhile, the population aged 25 and up has an average of 9.18 years of schooling, up 0.09 years over the previous year. The community's per capita spending (constant 2012 prices) reached Rp. 9,603 million rupiah in 2019, an increase of Rp. 417 thousand rupiah from the previous year.(BPS, 2020)

(Intan Safitri, 2016), concluded that government expenditure on the health sector influences the human development index, but government spending on education and infrastructure had no effect on the human development index. Furthermore,(Diba et al., 2018), also conclude that government spending on health and education has an effect on the human development index.

With previous studies yielding disparate results that were inconsistent with theory, this study examined government spending on the health, education, and infrastructure sectors, as well as economic growth. This was done because economic growth considerations in the Aceh Provincial government continue to fluctuate.

Several variables impact the human development index, including health, education, infrastructure, and economic growth. Government spending on health is a commitment to satisfy one of the people's basic rights, namely the right to acquire health care, as stated in the 1945 Constitution Article 28 H paragraph (1) and Law Number 23 of 1992 concerning Health.. (Astri et al., 2013), claimed that health is one of the variables influencing human resources, in other words, health characteristics influence human quality A population that lacks food, nourishment, or health will generate low-quality humans with retarded mental capacities. According to (Todaro, 2015), Government expenditure on the health sector is required to satisfy one of the basic rights to acquire health care in the form of health facilities and services; in other words, the more government spending on the health sector grows, the higher the Human Development Index. The results of research conducted by (Diba et al., 2018; Intan Safitri, 2016), concluded that government spending in the health sector has a positive effect on HDI.

The level of education is the level of education attained by all social strata. The degree of education may be used as an indicator of the population's standard of living. The more a person's degree of education, the higher the quality of human resources. The government's financial allocation for education is a real investment in the productivity of the community. Education sector development expenditures may be given for the building of educational infrastructure and the provision of education services to the whole population of Indonesia. (BPS, 2020).

The results of research conducted by (Diba et al., 2018), concluded that government spending in the education sector has no effect on the human development index. Furthermore, the results of (Diba et al., 2018) research also concluded that government spending in the education sector had a positive effect on the human development index.

The same holds true for infrastructure expenditures. Infrastructure is the mechanism through which a development is implemented. Transportation, communication and transportation, power, and other elements of infrastructure make up the facilities. Human development is contingent on the availability of infrastructure to facilitate investment in human resources, which is nothing more than the enhancement and growth of the quality of human capital. Infrastructure is the physical system that provides transportation, irrigation, drainage, buildings, and other public amenities necessary to support fundamental human needs in the social and economic spheres.According to (Intan Safitri, 2016), The Human Development Index will rise as government investment on infrastructure grows.

Economic growth is another aspect that influences the human development index. Economic growth is one measure of the economy's success at both the national and regional (regional) levels. Economic growth is defined as a rise in aggregate output (the total goods and services generated by economic activity), also known as GDP. The higher the human development index, the greater the economic growth., (Mongan, 2019).

(Mahulauw et al., 2016) concludes that Variable economic growth has a positive and statistically significant impact on the Human Development Index.

2. THEORY BASIS

Human Development Indeks

According to the (BPS, 2020), The Human Progress Index (HDI) is defined as a method for assessing human development that is based on a

variety of quality of life variables. The human development index (HDI) includes three indicators: physical quality as measured by life expectancy, non-physical quality as measured by average length of education and literacy rates, and economic capability as measured by the value of buying power. index of parity (PPP)(Andaiyani, 2012).

Human development (Sulistyowati et al., 2017), is defined as a procedure that allows humans to have more options. Income is one of the options available to humans, but it does not encompass all facets of human life. Furthermore, characteristics like as health, education, a safe physical environment, and freedom of action are vital.

Despite several complaints and shortcomings leveled at the HDI by various parties, the HDI idea may still be used and exploited. Especially when combined with standard economic measurements like per capita income. The three HDI criteria, namely survival, education, and physical quality of life, can help us gain a better grasp of critical components of development. (Todaro, 2014).

Long-term improvement can also be measured using the Human Development Index. The Human Development Index is calculated using four factors: life expectancy, literacy rate, population participation rate in school, and per capita income. (Andaiyani, 2012).

Government Spending

Government spending is an element of fiscal policy that tries to ensure economic stability while sustaining economic growth. From the evolution of government operations from year to year, it can be observed that the government's role expands in practically every economic sphere. (Kahang, 2016)

According to (Mahulauw et al., 2016), Government expenditure include all purchases of goods and services made by the federal government and local governments over a given time. Government expenditures in Indonesia's state revenue and spending budget are broadly categorized as regular expenditures and development expenditures.

In addition, government expenditure can be "transfer" in character, such as when money is transferred to individuals for social reasons, to businesses as subsidies, or even to other nations as gifts (grants).

Health Sector Government Expenditure

Health is one of society's fundamental requirements; consequently, it is a constitutionally guaranteed right for every person. To build a thriving society, the enhancement of health care is fundamentally an investment in human resources (welfare society). Since there is a strong correlation between health and poverty, the level of public health will have a significant impact on community welfare. In the meanwhile, the amount of poverty will be correlated with the welfare level. Health must be the government's first focus as a public service provider since it is the most important aspect in achieving the community's well-being.

The government must be able to guarantee the people's right to health by providing equal, appropriate, and affordable health care.on Health (Fadilah et al., 2018) Government expenditure on the health sector is an endeavor to satisfy one of the fundamental rights of the people, namely the right to receive health care in line with Article 28 H, paragraph 1, of the Constitution of 1945 and Health Law Number 23 of 1992.

Government Expenditures in the Education Sector

Education is a type of human resource investment. Which means that if a person receives an education, he will have more options and will be able to raise his level of living. Education has an impact not only on an individual's capacity to generate a high level of money, but also on behavior and decision making, which increases the chance of success in meeting basic necessities; education can even prevent a person from being poor.(Widodo, 2011)

(Todaro, 2015), Education is absolutely crucial for a nation. Since a nation's development and advancement may be evaluated by the degree and quality of its education and its people resources. Education has a crucial role in determining a nation's potential to absorb contemporary technologies and foster sustainable growth and development. Education is regarded a tool for achieving sustainable goals since it enables the accomplishment of development activities, hence enhancing future prospects to improve the quality of life.

Government Expenditures in the Infrastructure Sector

Infrastructure is defined in the Big Indonesian Dictionary as a public facility and infrastructure. Where public facilities such as railroads, hospitals, bridges, roads, sanitation, telephones, clean water, electricity, and so on are available. In economics,

public infrastructure is a kind of public capital resulting from government-led development. In this example, infrastructure comprises highways, bridges, and sewage systems. (Mankiw, 2012).

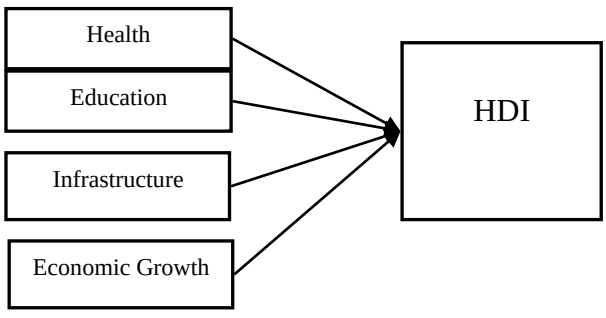
Economic Growth

One of the metrics typically used to gauge the prosperity of a region or area is economic growth. A region will only experience economic expansion if the increase in production capacity of all economic activity within its borders is quantifiable. Regional development during the past few decades has focused only on achieving increasing economic growth, regardless of whether the advantages for the community's welfare would be dispersed equitably. However, for future development, regional development policymakers have decided to take into account the benefits of economic growth for the community, so that they not only prioritize high economic growth, but the level of equity is beginning to serve as an indicator of the well-being of a region's residents.

According to (Todaro, 2015), Economic growth is an increase in a country's long-term capacity to supply diverse economic benefits to its population. The growth in capacity will be made feasible by technical, institutional, and ideological changes to the actual situation's diverse needs.

According to (Sukirno, 2021), Economic growth is the change from one year to the next in the level of economic activity. To determine the growth, it is important to compare the national income of the country from year to year, which is known as the economic growth rate. Meanwhile, according to (Nugroho, 2016), Economic growth is a long-term per capita output growth process that happens when a gain in production originates from an economy's internal processes and is impermanent.

Conceptualframework



Hypothesis

A hypothesis is a temporary answer to a problem that is still presumption because it still has to be proven true.

H1: It is suspected that government spending on the health sector has a positive effect on the Human Development Index in Aceh province

H2: It is suspected that government spending in the education sector has a positive effect on the Human Development Index in Aceh province

H3: It is suspected that government spending in the Infrastructure sector has a positive effect on the Human Development Index in Aceh province

H4: Economic growth is suspected to have a positive effect on the Human Development Index in Aceh province.

3. RESEARCH METHOD

Research Objects and Locations

This study used the Human Development Index, government expenditure on education and health, government spending on infrastructure, and economic growth as its variables.

Data collection technique

This study's data collecting methods included library research, the Internet, and the BPS. In order to do a literature review, one must examine sources that provide material pertinent to the research topic and the issue being investigated. The Central Statistics Agency provides data on government spending in the health, education, infrastructure, economic development, and HDI sectors.

Variable Operational Definition

1. Human Development Index

The Human Development Index is a comparative measure of life expectancy, literacy, education and living standards for all countries . Human development index is measured in Percent (%).

1. Government Expenditure on Health

Government expenditure in the health sector is a budget expenditure to meet health services in the form of health facilities, medicines, complete hospital equipment, and other health services that are needed by the community. Government expenditure on the health sector is measured from the government expenditure budget in the health sector in billions of rupiah.

2. Government Expenditure on Education

Government spending in education is the government's budget allocation for the education sector which is also a tangible manifestation of investment to increase community productivity.

Government spending in the field of education is measured from the government expenditure budget for education in billions of rupiah.

3. Government Expenditure on Infrastructure
Government spending in infrastructure is a budget allocation of funds from the government for improvements in the infrastructure sector with the aim of improving the community's economy. Government spending in the infrastructure sector is measured from the government spending budget in the infrastructure sector in billions of rupiah.

4. Economic Growth
Economic growth is an increase in the ability of an economy to produce goods and services that can be measured in percent.

Normality test
Testing the normality of the data is a test of the normality of the data distribution. Normality testing is carried out with the intention of seeing whether the analyzed data is normal or not. A good regression model has a normal or close to normal data distribution. The residual value which is normally distributed can be seen from the shape of the curve that forms a bell image whose both sides widen to infinity. In addition to using graphs, the normality test can also be performed using the Jarque-Bera method (JB test). JB test is done by looking at the probability value of Jarque-Bera. According to(Winarno, 2015), the normal distributed regression model has a probability value of JB > 0.05 ($\alpha = 0.05$). On the other hand, if the probability value is < 0.05, then the data is not normally distributed

Classic assumption test
Multicollinearity Test
Multicollinearity test is a test used to see the correlation between each independent variable. One method that can be used to determine the presence or absence of multicollinearity can be seen from the correlation value between the two independent variables. If the correlation value is less than 0.8 then the independent variable does not have a multicollinearity problem, and vice versa (Winarno, 2015).

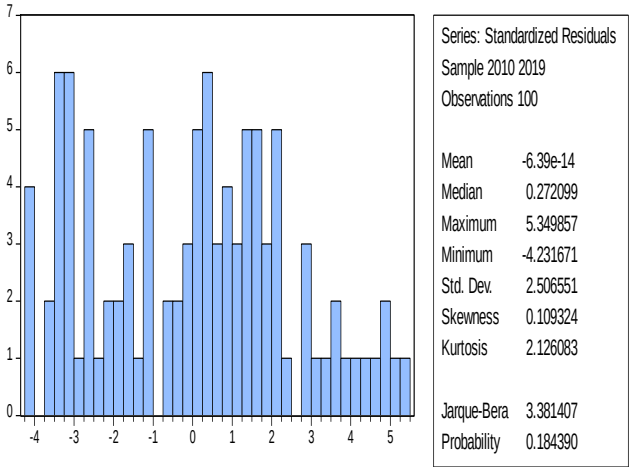
Autocorrelation Test
Autocorrelation is the correlation between the members of a series of observations ordered by time series. The estimation of the linear regression model contains the assumption that there is no autocorrelation between the confounding errors. According to Winarno (2015) if the value of Obs*R-Square < chi-square, then there is no autocorrelation. Furthermore, the autocorrelation test can also be compared with the probability, if the Chi-Squared Probability value is > 5%, then there is no autocorrelation.

Heteroscedasticity Test
Heteroscedasticity is a situation where the data distribution is not the same or the variance is not the same so that the significance test is not valid. The heteroscedasticity test aims to determine whether in a regression model there is an inequality of residual variance (confounding error) from one observation to another. If the residual variance from one observation to another is constant, it is called homoscedasticity (same variance). One way to detect heteroscedasticity problems is to use the Glejser test. The Glejser test is carried out by regressing all independent variables to the absolute value of the residual(Winarno, 2015). If the probability value of the independent variable is < 0.05 (significant level or = 0.05) then heteroscedasticity occurs, otherwise if the probability value is > 0.05 then there is no heteroscedasti

Panel Data Regression Model
The data analysis used to solve the problem in this research is panel data regression analysis with the help of the Eviews program. Panel data is a group of individual data that is examined over a period of time so that panel data provides information on the observations of each individual in the sample(Winarno, 2015). Panel data analysis can be done with static panel data consisting of Common Effect Model (CEM), Fixed Effect Model (FEM) and Random Effect Model (REM)

RESULTS AND DISCUSSION

Normality Test



The residuals are seen to be normally distributed because the histogram graph form a symmetrical distribution pattern, as seen in the image above. JB X2 (chi-square) = 3.38 9.49, indicating that the data have a normal distribution, as determined by the results of the normality test based on the comparison of JB values.(Winarno, 2015).

The normality test findings may also be seen by comparing the value between the probability of JB and the significant value of 5%. The normality test findings suggest that the residuals are normally distributed since the value of Prob JB > 0.05, which is 0.184 > 0.05.

Multicollinearity Test

Multicollinearity refers to conditions in which the independent variables have a definite or nearly definite linear connection. The objective of multicollinearity is to determine if each independent variable in the regression equation model is linearly connected. The correlation test may be used to see the result of the multicollinearity test. Examining at the output findings between variables in the regression, the table above demonstrates that this model is free of multicollinearity concerns because the correlation value is less than 0.8.

Autocorrelation Test

Autocorrelation is the correlation between members of a series of observations ordered by time series. According to (Winarno, 2015), The Durbin-Watson statistical test is the most commonly used to identify autocorrelation. This assumption necessitates the use of two auxiliary values acquired from the Durbin-Watson table, namely dL and Du, where K = number of independent variables and n = sample size. The value of Durbin Watson is used for testing.

Based on the findings of the output eviews, the Durbin Watson value is 0.720, and because the dw value ranges from -2 to +2, it is determined in this study that there are no interfering errors across time series.

Heteroskedastisiyty Test

There were no confounding errors between observations in this study. The findings of statistical testing using the White test, which compares the probability values of obs* R-square and 0.05, demonstrate this. The white probability test estimation result is 0.108, which is larger than 0.05.

Panel Data Regression Equation

The Random Effect Model was chosen as the model for this investigation. The random effect model was chosen because the significant result of the Hausmant test is larger than 0.05. The panel data regression findings of the Random Effect Model are as follows:

Variable	Coefficient	Std. Error	t_{hitung}	Prob.
C	-44.98066	19.15556	-2.348178	0.0209
LOG(X1?)	1.642793	0.596930	2.752070	0.0071
LOG(X2?)	0.420803	0.211084	1.993537	0.0491
LOG(X3?)	2.276446	1.178997	1.930833	0.0565
X4?	0.038905	0.075632	0.514404	0.6082
Random Effects (Cross)				
_ACEH_BESAR--C	4.297107			
_ACEH_JAYA--C	2.239060			
_ACEH_SELATAN--C	-3.166186			
_ACEH_TENGAH--C	1.785388			
_ACEH_TENGGARA--C	0.323260			
_ACEH_TIMUR--C	-3.012013			
_ACEH_UTARA--C	-2.577053			
_GAYO_LUWES--C	-1.320631			
_NAGAN_RAYA--C	0.637031			
_PIDIE--C	0.794036			
Cross-section fixed (dummy variables)				
R-squared	0.762843			
Adjusted R-squared	0.752857			
F-statistic	76.39455			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	0.720473			

Based on Table the regression equations that can be arranged in this study are as follows:

Yit = - 44.98 + 1.64 LnX1it + 0.42 LnX2it + 2.27 LnX3it + 0.03 X4

Based on the above equation, it can be explained that:

1. a constant of -44.98 means that if the expenditure on health, education, infrastructure and economic growth is considered constant, then the value of the human development index has a fixed value of -44.98.
2. Health expenditure regression coefficient value of 1.64 indicates a positive relationship (unidirectional) which means that every 1% increase in health expenditure causes the human development index to increase by 1.64%.
3. The educational expenditure regression coefficient value of 0.42 indicates a positive (unidirectional) relationship which means that every 1% increase in

educational expenditure causes the human development index to increase by 0.42%.

4. The regression coefficient value for infrastructure expenditure is 2.27 showing a positive relationship (unidirectional) which means that every 1% increase in infrastructure expenditure causes the human development index to increase by 2.27%
5. The economic growth regression coefficient value of 0.03 indicates a positive relationship (unidirectional) which means that every 1% increase in economic growth causes the human development index to increase by 0.03%.

Discussion

Effect of Health Expenditure on Human Development Index in Aceh Province

According to the findings of this study, government expenditure on health has a favorable and considerable influence on the human development index in Aceh Province. Health is a state of physical, mental, and spiritual well-being that allows a person to perform tasks and create output. Health and development are inextricably linked. (Todaro, 2015), indicates that health is a core development objective; hence, it becomes significant. The core of well-being is health. As a result, health is critical to moulding the wider human capacities that are central to the definition of development.

The results of this study are in line with research conducted by (Andaiyani, 2012; Diba et al., 2018; Intan Safitri, 2016; Sulistyowati et al., 2017; et al., 2017), which concluded that government spending in the health sector has a positive and significant effect on the human development index.

Effect of Education Expenditure on Human Development Index in Aceh Province

The results of this study indicate that government spending on the education sector has a positive and significant effect on the human development index in Aceh Province. Education is knowledge, skills, training, and guidance given to individuals and groups so that they become figures who can produce useful and useful creativity and innovation. Education has a close relationship with development, (Todaro, 2015), also mentions that education is a fundamental development goal. Education is the main thing to achieve a satisfying and valuable life, so it is fundamental to forming wider human abilities which are at the core of meaning. development. The results of this study are in line with the results of research conducted by(Sulistyowati et al., 2017), which concludes that government spending in the education sector has a positive and significant effect on the Human Development index.

Effect of Infrastructure Expenditure on Human Development Index in Aceh Province

The results of this study indicate that government spending on the infrastructure sector has an effect on the human development index in Aceh Province. Infrastructure is a means provided for the implementation of a development. The facilities are formed in various forms including transportation, communication and transportation, electricity, and so on. Human development depends on the availability of infrastructure to support investment in human resources which is nothing but the improvement and development of the quality of human capital itself.

Effect of Economic Growth on Human Development Index in Aceh Province

According to the findings of this study, economic expansion has no effect on the Aceh Province human development index. High and sustainable economic growth is required for economic development and welfare enhancement to continue. Economic development that is not accompanied by improved employment opportunities will result in disparities in the distribution of additional income (cateris paribus), resulting in an economic growth with rising poverty scenario. Uneven economic development can lead to inequalities in well-being.

Income level and HDI have a strong relationship. However, rising income does not imply rising HDI. Similarly, gains in health and education that enhance HDI may not always result in a rise in income. This is due to the fact that the resources gained by economic growth cannot be utilised to enhance other indices. Furthermore, the institutions and activities that occur in society cannot assist the poor.

CLOSING

Conclusion

Based on the results of research and discussion, the researchers put forward the following conclusions:

1. Partially, government spending on the health sector has a positive and significant impact on

the Human Development Index in Aceh Province.
2. Partially, government spending in the education sector has a positive and significant impact on the Human Development Index in Aceh Province.
3. Partially, government spending on the infrastructure sector has a positive and significant impact on the Human Development Index in Aceh Province
4. Partially, economic growth has no effect on the Human Development Index in Aceh Province

Suggestion

1. For Malikussaleh University students, especially for Development Economics students, to further increase knowledge related to the human development index and the factors that influence it.
2. For further research, researchers can add other variables that have not been studied to be added to add to the repertoire of research.

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