


# Fiscal Policy Instruments and Human Development Index: Efforts to Improve the Welfare for Indonesian

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**ABSTRACT**

The welfare of the community is something that a country needs to achieve. The economy and social life reflect the welfare of the community. To improve people's welfare, the Government needs to optimize a series of fiscal policy instruments to achieve this goal. This study seeks to see the effect of fiscal policy instruments in the expenditure sector to improve people's welfare with the HDI as a measure of community welfare. Using the quantitative descriptive method, the researcher attempts to see the effect of housing and community amenities, health, and education expenditure on the Indonesian HDI in 2010-2021. Using multiple linear regression analysis, it is found that 2010-2021, Housing and Community Amenities Expenditure, Health Expenditure, and Education Expenditure had a positive and significant impact on the Indonesian HDI. So, the researcher recommends that the Government increase the budget allocation for the three sectors and implement programs to improve the quality of human resources.

**Keywords:** fiscal policy, community welfare, Human Development Indeks

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**ABSTRAK**

Kesejahteraan masyarakat merupakan suatu hal yang perlu dicapai oleh suatu negara. Kondisi perekonomian serta kehidupan sosial adalah cerminan dari kesejahteraan masyarakat. Dalam upaya meningkatkan kesejahteraan masyarakat, serangkaian instrumen kebijakan fiskal perlu dioptimalkan oleh Pemerintah untuk mencapai tujuan tersebut. Penelitian ini berupaya untuk melihat pengaruh instrumen kebijakan fiskal sektor pengeluaran dalam upaya meningkatkan kesejahteraan masyarakat dengan Indeks Pembangunan Manusia sebagai ukuran dari kesejahteraan masyarakat. Menggunakan metode deskriptif kuantitatif, peneliti berupaya untuk melihat pengaruh dari belanja perumahan dan fasilitas umum, belanja kesehatan, serta belanja pendidikan terhadap Indeks Pembangunan Manusia Indonesia tahun 2010-2021. Dengan menggunakan analisis regresi linier berganda diperoleh hasil bahwa, pada tahun 2010-2021 belanja perumahan dan fasilitas umum, belanja kesehatan, serta belanja pendidikan berpengaruh positif dan signifikan terhadap Indeks Pembangunan Manusia Indonesia. Sehingga peneliti merekomendasikan pemerintah untuk meningkatkan alokasi anggaran pada ketiga sektor tersebut dan melaksanakan program dalam rangka meningkatkan kualitas sumber daya manusia.

**Kata kunci:** kebijakan fiskal, kesejahteraan masyarakat, Indeks Pembangunan Manusia



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## INTRODUCTION

Every country has a goal to improve the welfare of its people. The people's welfare will be reflected in the quality of their social life and economy. Quality social life and economics can be obtained if the Government focuses on development in these fields. This is obtaining that development aims to achieve community welfare through change towards a better and continuous direction (Sanggalorang et al., 2015). Development must be directed to carry each process stage closer to the goal. To improve the community's welfare, the Government needs to issue policies that align with achieving goals. The Government needs to carry out a fiscal policy with various instruments to achieve this goal. Fiscal policy instruments help improve the quality of human resources, reduce poverty and unemployment rates, reduce inequality, and expand economic activity in various sectors to create an expansion of business fields. Fiscal policy has at least two instruments in implementing its policies: income and expenditure (Boediono, 1981). Judging from the income post, it can be from tax receipts, grant receipts, loans from within and outside the country, and others. Meanwhile, the expenditure posts are divided into two according to their function: housing and community amenities, health, and education, according to the type of expenditure, including direct and indirect expenditure.

Fiscal policy is a tool owned by the Government to achieve development goals, namely improving people's welfare. With this goal, the position of humans is always a significant part of the achievement of any development program. Development is now about putting people as the primary goal of development rather than a means to its successful development. The success of human development can be achieved from the government's ability to overcome the fundamental problems that exist in society, such as poverty, unemployment, inequality, malnutrition, and illiteracy. To see the level of achievement in the implementation of its development, Indonesia uses the HDI as an indicator that is measured based on basic human needs, namely a long and healthy life, decent life, and knowledge. If there is progress in this regard, it can be said that the quality of human resources produced is in line with the development of the index. Fiscal policy instruments exist to improve development quality, providing essential services through expenditure activities. Expenditures on housing and community amenities, health, and education are included in the category of social spending. In practice, the Government has a different policy every year to improve human development quality, and This can be seen through the budgeting format for expenditures sourced from the APBN.

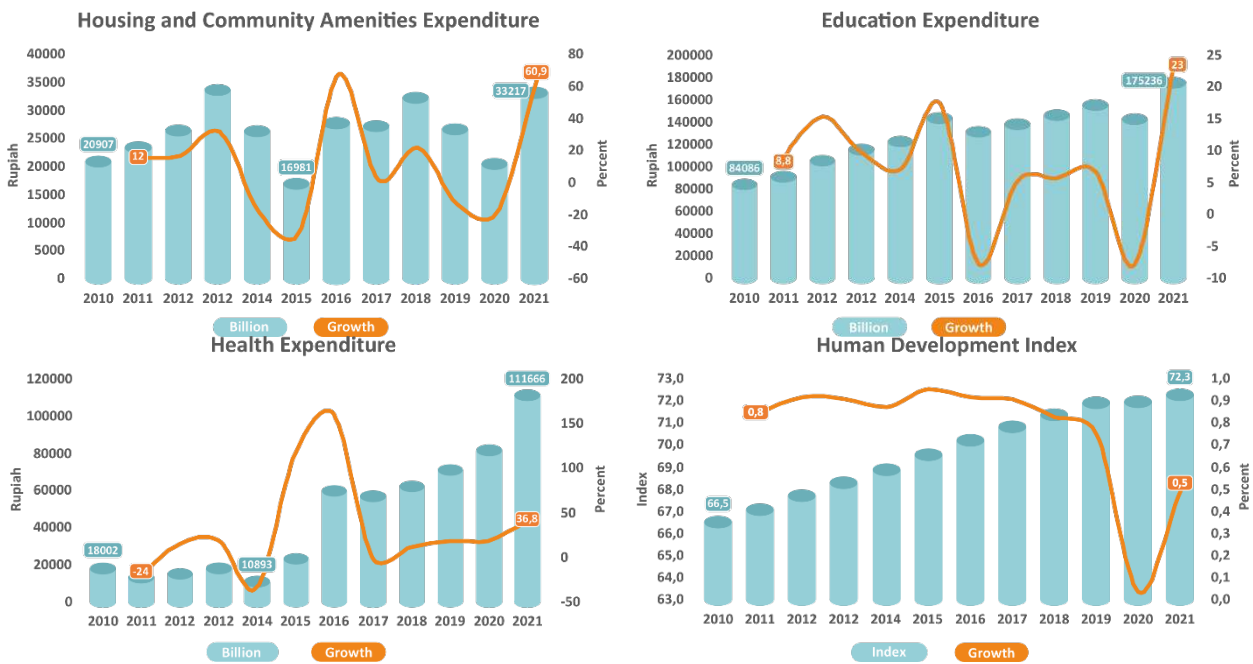
Figure 1. Comparison of Human Development Index, Housing and Community Amenities Expenditure, Education Expenditure, and Health Expenditure



Source: Central Bureau of Statistics (2021)

In recent years, the Government has allocated different expenditure budgets each year. Such conditions have triggered polemics that have led to government debates that have not been maximized in the community's welfare by implementing policies to improve the quality of human development. The case study of fiscal policy instruments in the expenditure sector and the level of human development is very relevant to the case study in Indonesia. The Indonesian government expenditure on education, health, housing and community amenities shows an increasing trend every year, but this is not proportional to the significant increase in human development every year.

Figure 2. Housing and Community Amenities Expenditure, Education Expenditure, Health Expenditure, and Human Development Index Performance, 2010-2021



Source: Central Bureau of Statistics (2021)

This case raises the question that there are still doubts about the influence between government spending and expected human development outcomes. The link between high government spending and a suboptimal HDI can be the answer and explanation for the polemic between the influence of fiscal policy instruments in the expenditure sector and the level of human development.

This study tries to answer and explore the effect of fiscal policy instruments in the expenditure sector on people's welfare as seen through the level of human development where the fiscal policy instruments for this research expenditure sector are measured through Housing and Community Amenities Expenditure (HACA), Health Expenditure (HE), and Education Expenditure (EE). In comparison, the welfare of society in this study is measured through the HDI. Therefore, the hypothesis is that Housing and Community Amenities Expenditure (HACA), Health Expenditure (HE), and Education Expenditure (EE) have a positive and significant impact on the HDI in Indonesia from 2010 to 2021.

## THEORETICAL FRAMEWORK

### Fiscal Policy

Fiscal policy adjusts government expenditure and income to improve economic conditions (Ani Sri Rahayu, 2014). Alternatively, fiscal policy is an economic policy that aims to improve the economic situation by changing the government's income and expenditures. Fiscal policy is a

government policy concerned with regulating economic activity through the government's income and expenditures (Muhammad Ibrahim, 2013). The fiscal policy regulates government spending and taxes that can directly affect aggregate demand and thus affect prices. A decrease in aggregate demand can prevent inflation. Fiscal policies that reduce government spending and raise taxes will reduce aggregate demand to curb inflation (Nopirin, 1992).

Fiscal policy has at least two instruments in implementing its policies: income and expenditure items (Boediono, 1981). APBN can be divided into several types of function, which is a manifestation of the government's duties in certain field in order to realize national development plan. By classified into this, Indonesia has committed to referring to the Classification of the Functions of Government (COFOG) compiled and introduced by the United Nations Statistics Division (UNSD). Judging from the income post, it can be from tax receipts, grant receipts, loans from within and outside the country, and others. Meanwhile, the expenditure posts are divided into two according to their function: housing and community amenities, health, and education, according to the type of expenditure, including direct and indirect expenditure.

### **Human Development Index**

Human Development Index (HDI) is a measure of development achievement based on several fundamental components of quality of life (BPS, 2021). HDI is calculated based on data that can describe the four components, namely A community's purchasing power over several basic needs, considered based on average spending per capita, as an income approach to measuring development outcomes for a decent life, literacy rate, and an average length of schooling, which measures achievement in education, and life expectancy, which measures achievement in the health sector. HDI compares standards of living, life expectancy, and education levels used in all countries. HDI is used as an indicator to evaluate the qualitative aspects of development, classify countries as developed, developing, or underdeveloped countries, and measure the impact of economic policies on quality of life. (BPS, 2021).

One of the targets of the 2005-2025 National Long-Term Development Plan (RPJPN) is to accelerate the improvement of people's welfare. To achieve these targets, indicators are needed to assess the progress or progress of regional development. One alternative to measuring the development performance of a country or region is to use HDI. In 1990, UNDP determined three aspects to form the HDI (BPS, 2021). These three dimensions are the approach chosen to describe the quality of human life and have not changed so far. These dimensions include 1) a long and healthy life, 2) a decent standard of living, and 3) knowledge.

### **Housing and Community Amenities**

Housing and community amenities spending are serviced in the housing and community amenities sector, influencing economic development (Linhartova, 2021). The provision of these services will show how much equitable development occurs. Housing and community amenities Expenditures are government expenditures to increase low-income people's access to decent housing and increase access to public services such as electricity, drinking water, transportation, irrigation, telecommunications, clean water, and proper and sustainable sanitation. Government spending on housing and community amenities can benefit directly. People belonging to the middle to lower economic category can feel decent housing, then public facilities affect production activities and regional development.

The purpose, as well as the benefits that can be felt from government spending on the housing and public facilities sector, are the availability of infrastructures, such as electricity supply systems, clean water supply systems, irrigation, sanitation, roads, airports, ports, Etc. This is very strongly related, among other things, to the level of regional development characterized by economic growth and public interest. From this, areas with excellent infrastructure systems have higher economic

growth rates and higher public interest than areas with limited infrastructure. In this way, it can be said that infrastructure development is an essential factor that supports the country's development.

### **Health**

Health expenditure is a type of regional expenditure used to finance the implementation of government affairs which are the authority of the province or district/city in the health sector. Based on Law No. 36 of 2009, article 171 paragraph (2) states that the Government's health budget is allocated at least 10 percent of the APBD excluding salaries. Expenditures on the health budget sector are government expenditures issued to fulfill one of the fundamental rights to obtain health services in health services and facilities, prerequisites for increasing community productivity (Todaro & Smith, 2011).

Health sector government spending can affect human development because the health sector does not rely on the private sector, especially the market, but services that are normatively provided by the Government (Astri et al., 2013). Improving good health for every human being can be realized by allocating government spending in the health sector. The increase in the allocation of Government expenditure to the sector will increase the population's productivity to increase human development. Henceforth, government spending on the health sector can be a public investment.

### **Education**

Education expenditure is a type of regional expenditure used to fund government affairs, which are the authority of the province or district/city in education. In-Law Number 20 of 2003, concerning the allocation of education funds, it is stated that education funds other than educator salaries and official education costs are allocated at least 20% of the APBN for the education sector and at least 20% of the APBD.

Education has a vital role in improving human resources. Therefore, education spending is an absolute obligation that government administrators must carry out to provide educational services and facilities. Objectives and benefits of spending on the function of education have been put forward by many researchers who have studied education spending. In the end, it will be revealed that education spending will improve the quality of human welfare.

Spending on education can improve the quality of human resources because this expenditure is the Government's commitment to investment in human resource development. This investment is further known as human capital formation (Atmanti, 2005). Human capital explains that human resources are among the most crucial production elements: entrepreneurs, natural resources, and capital. The higher the quality of human resources, the higher the efficiency and productivity of the country. History shows that countries using a development paradigm with a human side have evolved, despite the lack of natural resources (Atmanti, 2005).

### **METHOD**

This study uses a descriptive research method with a quantitative approach to determine the influence of Housing and Community Amenities Expenditure, Health Expenditure, and Education Expenditure on the HDI in Indonesia in 2010-2021. The source of data in this study comes from secondary data, which was obtained from the Central Bureau of Statistics for 12 years starting from 2010-to 2021. The data collection technique used in this study is a documentation technique done by collecting data through written relics, such as archives and books on opinions, theories, or laws related to research problems (Margono, 1997; Martono, 2015). This data includes Government Financial Report documents and HDI data related to the data needed in this research activity. This study aims to investigate factors that affect to the human development index in the side of expenditure function of the Indonesian national budget. The variables operationalization as follows:

Table 1. Variables Operationalization

No	Variable	Symbols	Measurement	Data Sources
1	Human Development Index (Y)	HDI	Calculated by normalizing and aggregating these three indicators. The indicators are brought onto the same scale, ranging from 0 to 1.	Indonesian Central Statistics Agency
2	Housing and Community Amenities Expenditure (X2)	HACA	Government expenditure in the type of functional budget for housing and community amenities expenditure, measured by billion rupiah	Indonesian Central Statistics Agency
3	Health Expenditure (X3)	HE	Government expenditure in the type of functional budget for health expenditure, measured by billion rupiah	Indonesian Central Statistics Agency
4	Education Expenditure (X1)	EE	Government expenditure in the type of functional budget for education expenditure, measured by billion rupiah	Indonesian Central Statistics Agency

Source: Authors

The first step taken in research is to transform the data so that it has the same units. Standardization of data units was carried out using natural logarithms for all variables. Then the second step is to test the stationarity of the data because it uses time series data. Stationarity test results can influence the estimation method used. Data is said to be stationary when the probability is smaller than alpha (in this study 5%). When the data is stationary at the 1st difference, this research will use ECM to estimate the data. Meanwhile, when stationary at level level, research can use the OLS method.

The model used in this study is a multiple linear regression analysis model for determining how and how much the independent variable affects the dependent variable (Ghozali, 2013). Where the independent variables in this study are Housing and Community Amenities Expenditure (X1), Health Expenditure (X2), and Education Expenditure (X3). In contrast, the dependent variable in this study is the HDI (Y). The purpose of this study is to determine the partial and simultaneous effects between independent variables on dependent variables using multiple regression equation models such as:

$$Y = \theta_0 + \theta_1 X_1 + \theta_2 X_2 + \theta_3 X_3 + \varepsilon$$

In research using time series data, time symbols are added to each variable, and constant and error term are formed in a regression equation. The general model of time series econometric data in this research is as follows:

$$Y_t = \alpha_1 + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \beta_4 e_t$$

This research uses natural logarithms for data transformation which is useful for standardizing data units. By using data transformation with natural logarithms, the regression equation for time series data becomes as follows:

$$Y_t = \alpha_1 + \beta_1 \log X_{1t} + \beta_2 \log X_{2t} + \beta_3 \log X_{3t} + \beta_4 e_t$$

Where  $Y_t$  is the logarithm of the Human Development Index at time t,  $[[X1]]_t$  is the logarithm of Housing and Community Amenities at time t,  $[[X2]]_t$  is the logarithm of Health Expenditure at time t, and  $[[X3]]_t$  is the logarithm Education Expenditure at time t. Because the data is a time series and uses the OLS method, the residual data must be stationary at the level. The goal is to prove that the data used is consistent. Therefore, the residual ( $e_t$ ) from equation 1 must be stationary at the level. The residual equation is as follows:

$$e_t = \log Y_t - \alpha_1 + \beta_1 \log X_{1t} + \beta_2 \log X_{2t} + \beta_3 \log X_{3t}$$

In this article, the unit root test was used to find the level of stationarity of the data. Because the research data is stationary at level, therefore this research will use the OLS method. The OLS

model used follows research conducted by Dhiya et al. (2021) who developed the OLS method to estimate a model of the influence of health and education spending on the economy on the basis of endogenous growth theory. Furthermore, time series data has the potential to produce spurious regression. To overcome spurious regression, the Levin, Lin & Chu test was used in the stationarity test analysis of this research. In stationarity testing, it is tested in stages from level, 1st difference and 2nd difference. This research will also be equipped with several classic assumption tests such as multicollinearity, heteroscedasticity and normality. The autocorrelation test is replaced by the residual stationarity test. When the residuals are not stationary, it means there is an autocorrelation problem in the research of Dhiya et al. (2021).

## RESULT

### Stationarity Test

Table 2 below shows the results of the stationarity test using the Levin, Lin & Chu t approach. The results fail to reject the null hypothesis, non-stationarity (unit root) at the level including the intercept, for all variables. However, the non-stationarity hypothesis is rejected at the first difference level for all variables. This gives the conclusion that the data has stationarity at the level. These results will be the basis for carrying out further processing at level data.

Table 2. Stationarity Test

Method	Statistic	Prob.	Cross-sections	Obs.		
Null: Unit root (assumes common unit root process)						
Levin, Lin & Chu t*	-2.01458	0.0220				
Series	2 <sup>nd</sup> Stage Coefficient	Variance of Reg.	HAC of Dep.	Lag	Bandwidth	Obs.
HDI	-0.05659	0.0206	0.0442	0	1.0	11
EE	-0.28628	8.E+07	3.E+07	1	7.0	10
HACA	-1.72710	2.E+07	6.E+06	1	10.0	10
HE	0.14774	2.E+08	1.E+08	0	3.0	11

Source: Processing Results from Eviews 10

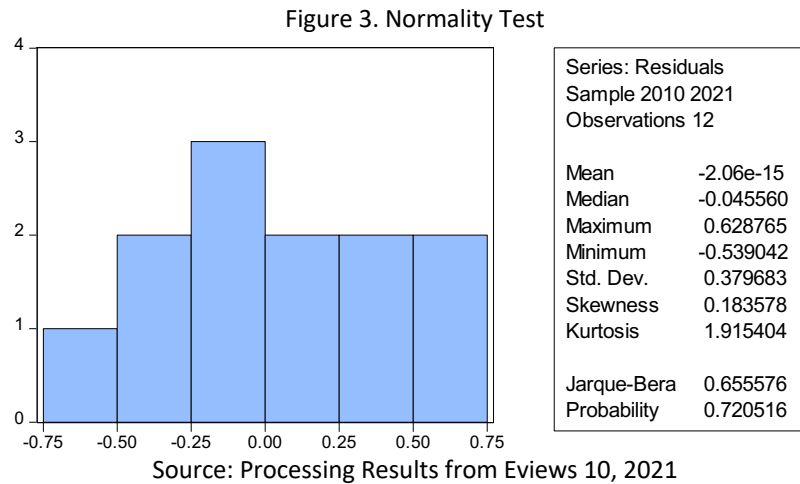
The results of the stationarity test at level level show that the data is stationary as seen from  $\text{prob} < 0.05$  or  $0.0220 < 0.05$ . Therefore, this research will use the OLS method with the condition that the residuals from the regression results must be stationary at level level. The results of classical assumption tests such as multicollinearity, heteroscedasticity and normality show that the model used avoids these three problems. Table 3 shows that there is no multicollinearity because the VIF value is below 10. Table 4 shows that the data is normally distributed because the probability value is greater than alpha 5%. Table 5 shows that heteroscedasticity does not occur because the probability value is greater than alpha (5%).

### Classic Assumption Test

Research with more than one independent variable, namely Housing and Community Amenities Expenditure, Health Expenditure, and Education Expenditure, needs multiple regression analysis. However, a classical assumption test is needed to obtain more accurate results before performing multiple regression analyses. If the existing data does not meet the requirements of the classical assumption test, then the data is not recommended to be continued because, generally, there will be problems with the results. Classical assumption tests used include normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test (Ghozali, 2013). Because in the stationarity test it was proven that the data had stationary residuals, testing for autocorrelation was not needed.

### Normality Test

A good regression model has normal or is close to normal distribution. The purpose of a normality test is to test whether a perturbation or residual of a regression model follows a normal distribution. To check whether the residuals of the regression model follow a normal distribution by looking at the Normal Probability Plot. Regression models are usually distributed as the plot data, which represents the actual data, follows a diagonal line (Ghozali, 2013). Based on data processing, the following output is obtained:



From the results of the Normality test, it can be seen that to make decisions you can look at Jarque-Bera and Probability. This research uses  $\alpha=0.05$  (5%), if the probability  $< \alpha$  then the data is not normally distributed. If probability  $> \alpha$ , then the data is normally distributed. In the results seen in the image above, the research data is normally distributed, because  $0.720516 > 0.05$ . So the data used can be processed because it has normally distributed data.

### Multicollinearity Test

The multicollinearity test verifies that the regression model correlates between the independent variables. A good regression model should not correlate with the independent variable. Multicollinearity testing is performed by comparing the value of tolerances and VIF values to meet the requirements of multicollinearity testing. The Tolerance value must be greater than 0.10, and the VIF value must be less than 10 (Ghozali, 2016). Based on data processing, the following output is obtained:

Table 3. Multicollinearity Test

No	Variable	Coefficient Variance	Uncentered VIF	Centered VIF
1	C	122.2095	7398.469	NA
2	Log(HACA)	1.000726	8365.116	2.647693
3	Log(HE)	0.070328	465.7878	2.636819
4	Log(EE)	0.454360	2839.434	1.087585

Source: Processing Results from Eviews 10, 2021

In determining the results, the value of the Centered VIF is used, where if the Centered VIF value is  $< 10$  then there is no multicollinearity. On the other hand, if the Centered VIF value is  $> 10$ , then multicollinearity occurs. The VIF value of Health Function Expenditure, Health Function Expenditure, and Housing and Public Facilities Function Expenditure shows less than 10 with each value of 2.647693; 2.636819; and 1.087585. Therefore, the regression model in this study does not have symptoms of multicollinearity.

### Autocorrelation test

To determine the results of the autocorrelation test,  $\alpha = 0.05$  is used using the Breusch-Godfrey Serial Correlation LM Test. In determining the results, the decision is used if Prob. Chi-Square  $< \alpha$ , then autocorrelation symptoms occur. On the other hand, if Prob. Chi-Square  $> \alpha$ , then there are no symptoms of autocorrelation. In example 1, the regression model does not experience autocorrelation symptoms because of prob. F  $> \alpha$ , namely  $0.7587 > 0.05$ .

Table 4. Autocorrelation Test

<b>Breusch-Godfrey Serial Correlation LM Test:</b>			
F-Statistic	0.289282	Prob. F(2,6)	0.7587
Obs*R-squared	1.055361	Prob. Chi-Square(2)	0.5900

Source: Processing Results from Eviews 10, 2021

### Heteroscedasticity Test

A good regression model is one in which heteroscedasticity does not occur. The heteroscedasticity test aims to test whether there is a difference in the variance of the regression model between the residuals of one observation and another. If the residuals of one observation remain deviating from one observation to another, it is said to be homoscedastic; otherwise, it is said to be heteroscedastic. A scatterplot test was carried out to see the symptoms of heteroscedasticity. The regression model avoids the symptoms of heteroscedasticity if there is no clear pattern (wavy, widened, then narrowed) in the scatterplot image, and the plotting spreads above and below the number 0 on the Y-axis (Ghozali, 2016). Based on data processing using IBM SPSS Statistics 25 statistical software for Windows, the following output is obtained:

Table 5. Heteroscedasticity Test

<b>Heteroskedasticity Test: Glejser</b>			
F-Statistic	2.754854	Prob. F(3,8)	0.1119
Obs*R-squared	6.097597	Prob. Chi-Square(3)	0.1070
Scaled explained SS	2.744972	Prob. Chi-Square(3)	0.4326

Source: Processing Results from Eviews 10, 2021

Based on the results of the Heteroscedasticity test on the model using the Glejser Test, to determine the results of the heteroscedasticity test, you can look at the F-statistics and Obs \* R-squared sections in the output results table above. The conclusion is drawn by comparing Prob. F or Prob. Chi-Square with  $\alpha$ . If Prob. Chi-Square  $< \alpha$ , then symptoms of heteroscedasticity occur. On the other hand, if Prob. Chi-Square  $> \alpha$ , then there are no symptoms of heteroscedasticity (homoscedasticity). In the table above, it can be concluded whether or not symptoms of heteroscedasticity occur. This is because the value found from Prob. F is  $0.1119 > 0.05$ .

### t-Statistics Test

The t-test is used to partially determine the effect of the variables on Housing and Community Facilities Expenditures, Health Expenditures, and Education Expenditures on HDI. To see the effect, it can be seen by comparing the value of Prob. with  $\alpha$ . By using multiple regression analysis with the Ordinary Least Square (OLS) approach, the results obtained are as follows:

Table 6. Multiple Regression Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-7.189333	11.05484	-0.650333	0.5337
LOG(HACA)	-0.086135	0.674062	-0.127785	0.9015
LOG(HE)	1.024133	0.265195	3.861811	0.0048
LOG(EE)	5.711273	1.000363	5.709202	0.0004

Source: Processing Results from Eviews 10, 2021

Multiple regression analysis is basically an extension of simple linear regression, namely increasing the number of independent variables from previously only one to two or more independent variables. as in this research, it consists of more than one independent variable, so this research uses multiple linear regression analysis tools. This research has two independent variables and one dependent variable. The following are the results of estimating a simple linear regression equation for the first modeling.

By looking at the table above, information can be obtained regarding the value of  $a$  (constant) and the value of  $\beta$  (coefficient) using the coefficient value. The value of  $a$  (constant) is -7.189333, the coefficient value of  $\beta_1 X_1$  is -0.086135, the value of the coefficient  $\beta_2 X_2$  is 1.024133 and the value of the coefficient  $\beta_3$ . Thus the regression equation is as follows:

$$Y = -7.189333 - 0.086135X_1 + 1.024133X_2 + 5.711273X_3 + \varepsilon$$

Based on the regression equation above, it can be interpreted that if Housing and Community Facilities Expenditures, Health Expenditures, and Education Expenditures are zero (in the sense that there is no increase in Housing and Community Facilities Expenditures, Health Expenditures, and Education Expenditures) then HDI will decrease by - 7.189333. If Housing and Community Facilities Expenditures increase by 1%, the HDI will decrease by 0.086135. If Health Expenditures increase by 1% it will increase and decrease HDI by 1.024133. And if Education Expenditures increases by 1 point, the HDI will decrease by 5.711273. The regression results show that Housing and Community Facilities Expenditures have a negative value on HDI while Health Expenditures, and Education Expenditures have a negative value on HDI. The results of the t-Statistics test show that the variables of Housing and Community Amenities Expenditure are not partially significant to HDI, it is because  $\text{prob} > \alpha$  or  $0.9015 > 0.05$ . On the other hand, Health Expenditure, and Education Expenditure have a significant effect on the HDI partially where  $\text{Prob} < \alpha$ . Where for Health Expenditure is  $0.0048 < 0.05$ , and Education Expenditure is  $0.0004 > 0.05$ . The result is Housing and Community Facilities Expenditures are not significant effect to HDI, and both of Health Expenditures, and Education Expenditures are significant effect to HDI.

### Simultaneous Significance Test (f-Statistic Test)

The F-test is used to simultaneously determine the effect of the variables on Housing and Community Facilities Expenditures, Health Expenditures, and Education Expenditures on HDI. To see the effect, it can be seen by comparing the value of the Prob(F-statistic) with  $\alpha$ . The hypothesis is as follows:

Table 7. f-Statistic Test

<b>R-squared</b>	0.964305	<b>Mean dependent var</b>	69.71750
<b>Adjusted R-squared</b>	0.950919	<b>S.D. dependent var</b>	2.009627
<b>S.E. of regression</b>	0.445217	<b>Akaike info criterion</b>	1.480694
<b>Sum squared resid</b>	1.585749	<b>Schwarz criterion</b>	1.642329
<b>Log likelihood</b>	-4.884163	<b>Hannan-Quinn criter.</b>	1.420851
<b>F-statistic</b>	72.03979	<b>Durbin-Watson stat</b>	2.156994
<b>Prob(F-statistic)</b>	0.000004		

Source: Processing Results from Eviews 10, 2021

The F-statistics test shows that the variables of Housing and Community Amenities Expenditure, Health Expenditure, and Education Expenditure significantly affect the HDI simultaneously, where the  $\text{Prob}(\text{F-statistic}) < \alpha$  or  $0.000004 < 0,05$ .

### Coefficient of Determination (R<sup>2</sup>)

The coefficient of determination or R<sup>2</sup> is the predictive ability of the independent variables, namely Housing and Community Amenities Expenditure, Health Expenditure, and Education Expenditure on the dependent variable, namely the HDI.

Table 8. Coefficient of Determination

Model	R Square	Adjusted R Square
1	0.964305	0.950919

Source: Processing Results from Eviews 10, 2021

Based on the Coefficient of Determination (R<sup>2</sup>), it shows several 0.964305, which means the variability of the HDI variable, which can be explained by the variability of the variables of Housing and Community Amenities Expenditure, Health Expenditure, and Education Expenditure of 96.4%. In contrast, the remaining 3.6% is explained by other variables not included in the regression model.

## DISCUSSION

### The Effect of Housing and Community Amenities Expenditure on the HDI

The results of this study indicate that housing and community amenities expenditure has a significant effect with a positive elasticity of 0.086 on the HDI, meaning that if there is an increase in spending on housing and community amenities by 1%, the HDI will increase by 0.086%. This shows that the hypothesis has been accepted.

Spending on housing and community amenities is considered to have contributed to the increase in the HDI because the use of the budget allocation is considered excellent and sufficient so that it can be said that spending on housing and community amenities has a positive and significant impact on HDI (Haque & Khan, 2019; Linhartova, 2021).

Better accessibility of public facilities such as electricity, water, sanitation, and transportation infrastructure positively influences HDI. When it is easier for the community to gain access to these public facilities, it will increase income because community businesses and all lines of activity become more productive, increased income then will influence the level of people's purchasing power which increases so that this has implications for increasing HDI (Ahmadzadeh & Nasri, 2019; Nchofoung et al., 2021; Sapkota, 2014)

In addition, the existence of public facilities such as roads is the lifeblood of the economy, where the availability of roads can help with the smooth mobility of the population and is also helpful in increasing the flow of distribution of goods and services produced to reach or enter a broader market, thus enabling the fulfillment of needs and more incredible benefits for consumers and society at large. With the increasing number of public facilities such as roads, it is possible to expand the market, and also, the concentration of production will be even greater concerning large-scale economic enterprises. The effect of the expansion of the community's economic business can automatically increase people's income so that the community's economy can increase, and then it will affect the increase in people's purchasing power, which in the end will affect the increase in the HDI and also economic growth (Otega et al., 2015; Tsaourai & Ndou, 2019) Click or tap here to enter text.

In Indonesia, spending on housing and public facilities has been realized through several programs. In order to improve people's welfare, the Ministry of Public Works and Public Housing (PUPR) has attempted to reduce the number of uninhabitable houses (RTLH) through the Self-Help Housing Stimulant Assistance (BSPS) program or popularly known as Home Renovation. This program is a form of the Government's concern for people who need housing while reducing unemployment in the regions. Of course, we hope to improve the beneficiaries' quality of life by having a more decent, healthy, and comfortable home. Through the Ministry of PUPR, water and

sanitation assistance is also provided to support the clean and healthy community movement. In addition, through PLN, it has been carried out to make it easier for the public to obtain public facilities such as electricity, electricity stimulus assistance for small, industrial, and social communities. This is the Government's effort for the community to obtain electricity at low prices.

Moreover, as the Government's efforts in infrastructure distribution in Indonesia, especially in eastern Indonesia (Papua and West Papua), the Ministry of PUPR is committed to realizing reliable infrastructure development in Papua and West Papua provinces. It aims to reduce poverty, reduce the cost index, and equitable distribution of infrastructure development throughout Indonesia. One of the ways to improve the welfare of the Papuan people is by opening up isolated areas and increasing access and connectivity from land and multimodal, including the construction of the Trans Papua Road with a total length of 3462 km. With more and more convenience and gaining access to public facilities and housing that the community gets, there is an increase in community welfare.

### **Effect of Health Expenditure on HDI**

This study indicates that Health Expenditure has a significant effect with a positive elasticity of 1.024 on the HDI, meaning that if there is an increase in Health Expenditure by 1%, the HDI will increase by 1.024%. This shows that the hypothesis has been accepted.

Government spending on health spending has a significant effect on human development. Government spending on education can be felt physically as well as non-physically. Increasing and improving health infrastructure, health assistance, health services, and others will increase the level of public health and the quality of human resources (Fatria et al., 2020).

The role of health spending allocated by the Government is almost certain always to affect better human development, so in this case, it is essential to increase the allocation of health spending budgets in the aspect of health facilities and infrastructure (Linhartova, 2021; Prasetyo & Zuhdi, 2013; Razmi et al., 2012)

Along with increasing health quality, it will positively impact increasing productivity and supply of labor, which will trigger increasing economic growth (Razmi et al., 2012). Increasing the allocation of health spending budgets, especially for health promotion such as prevention and health services, is very important in improving human quality (Razmi et al., 2012).

Government spending on the health sector can reduce mortality rates and increase life expectancy. Therefore, fiscal channels through health spending effectively have an impact on human development, where along with the increase in health sector spending, people will be healthier and live longer, which has implications for increased productivity because people work better than the level of health also has an impact as a support for someone to access higher education level.

It is the same as the budget for the allocation of education spending, although, in Indonesia, it is not yet said to be optimal enough for the allocation of the health budget. In this case, the Government has made efforts to increase the budget allocation for the health sector every year. It can be seen in Figure 1 and Figure 2, where Education Expenditure and Indonesia's HDI are positively correlated, or when the Government increases the allocation of health spending budget, human development will increase.

The fact is that the Government has made efforts to improve public health. Namely, since 2004, the Government has provided the National Health Insurance (JKN) program to improve the quality of social security and public health. This program is realized in the form of Community Health Insurance (Jamkesmas) which has been in existence since 2005) and Maternity Insurance (Jampersal) which has only been implemented in 2011. Government spending in the health sector has one goal, namely, to improve the health status of the community. Furthermore, the Government's seriousness in improving public health has now been felt through the Healthy Indonesia Card (KIS) program.

The National Health Insurance Program – Healthy Indonesia Card (JKN-KIS) has benefited the community. This is seen from the number of participants and the utilization rate, which has continued to increase since implementation. As of January 10, 2019, the number of participants registered in the JKN-KIS Program has reached 216,152,549 people or covering 82% of the total population of Indonesia. In addition, the figures show that many people have benefited from the presence of this program. In 2018, health services utilization at all service levels reached an average of 640,765 uses per day, or 233.8 million uses a year. Another effect of the presence of the JKN-KIS Program is that it has a positive impact on economic growth both in the short and long term. This is because the higher the level of public health, the productivity level will also increase. In addition, the increasing level of public health indicates an increase in community welfare.

### **Effect of Education Expenditure on HDI**

This study indicates that Education Expenditure has a significant effect with a positive elasticity of 5,711 on the HDI, meaning that if there is an increase in Education Expenditure by 1%, the HDI will increase by 5.711%. This shows that the hypothesis has been accepted.

Government expenditure on education has a significant effect on human development. Government spending on education can be felt physically as well as non-physically. The increasing number of educational infrastructure and other educational assistance will impact the higher level of public education and the increasing quality of human resources (Dao & Nguyen, 2020; Fadilah et al., 2018; Fatria et al., 2020; Kushwaha & Tiwari, 2020)

A reasonable allocation of education spending, in the long term, can be an essential factor for human development because of the potential resources (Omodero, 2019; Petrişor, 2014; Prasetyo & Zuhdi, 2013; Purba, 2019). In addition, the greater the budget allocation invested by the Government in the education sector will be able to improve the quality of human capital so that it will increase productivity which leads to an increase in the country's economic growth (Fattah, 2012; Haque & Khan, 2019; Maharda & Aulia, 2020; Okafor et al., 2017). Furthermore, spending on education will also impact rural development and energy, agriculture, water resources, environmental protection, housing, and health (Okafor et al., 2017).

The composition of education expenditure between primary and secondary education determines the population's education status, especially in developing countries. Therefore, developing countries, especially investment in primary education, can directly affect educational outcomes characterized by reduced illiteracy rates and increased access to essential public services (Patel & Annapoorna, 2019; Sulistyowati et al., 2017).

In Indonesia, although it has not been said to be optimal enough for the allocation of the education budget, in this case, the Government has made efforts to increase the budget allocation for the education sector every year. It can be seen in Figure 1 and Figure 2, where Education Expenditure and Indonesia's HDI are positively correlated, or when the Government increases the education budget allocation, human development will increase.

The increasing number of realizations of educational programs, such as the School Operational Assistance (BOS) program, has played a significant role in accelerating the achievement of the 9-year compulsory education program. Since 2009, the central Government has provided financial support through the Poor Student Assistance (BSM) program, becoming the Smart Indonesia Card (KIP) program. The KIP program is a National Program that aims to eliminate the barriers for poor students to participate in school by helping to gain access to decent education services, preventing dropping out of school, supporting the compulsory primary education program, helping students meet their needs in learning activities, and attracting poor students to return to school. Years (even up to high school level) and helping the smooth running of school programs. In addition, financial support from the center is also in the form of a Special Allocation Fund. This assistance supports implementing a quality 9-year primary education compulsory education program intended for public and private elementary schools, which prioritizes underdeveloped areas, small

islands, remote areas, coastal areas, disaster-prone areas, and border areas. A significant and positive influence indicates that the realization of government spending on education affects the HDI, as evidenced by the outcome that can be seen from the average years of schooling for the population aged 15 years and over and literacy rate, which has increased. Furthermore, the increasing level of public education indicates an increase in community welfare.

## CONCLUSION

Based on the results of the analysis and discussion on the effect of fiscal policy instruments on the welfare of the Indonesian people in 2010-2021, this study concludes that during the 2010-2021 period, the activities of Housing and Community Amenities Expenditure, Health Expenditure, and Education Expenditure have had a significant and positive impact on increasing the HDI in Indonesia in 2010 to 2021. Therefore, the researchers provide recommendations, namely:

- 1) The Government needs to pay attention to the link between funding (input) and expected results (outcomes) or program-based budgeting to provide information about the effectiveness and efficiency of a program.
- 2) The Government needs to increase the budget allocation for education, health, and housing and community amenities because it has been proven optimal in increasing human development in Indonesia.
- 3) The Government needs to organize other programs that are better, both physical and non-physical programs, with efforts to improve educational facilities and services, increase school participation rates, increase the average length of schooling, improve health facilities and services, increase the development of public housing and public facilities in the form of electricity, water, sanitation, transportation, and road infrastructure, in order to build an advanced and quality Indonesian society.

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