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Analysis of the Effectiveness of Local Government Spending on the Human Development Index in the Regencies and Cities of East Nusa Tenggara Province, 2019–2024

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Abstract

This research aims to determine whether local government expenditure is effective in improving the Human Development Index (HDI) in the 22 regencies/cities of East Nusa Tenggara Province during the 2019–2024 period, as well as to examine why this province has a high dependence on government spending but maintains an HDI below the national average. In this analysis, local government expenditure is used as an independent variable, while the Human Development Index is used as the dependent variable. In addition, poverty and GDP per capita at constant prices are included as control variables. The data analysis technique employed in this study is panel data regression analysis using the Fixed Effects Model (FEM). The results indicate that regional expenditure has a significant effect on HDI, while poverty has a significant and negative effect on HDI, and GDP per capita has an insignificant effect on HDI. In contrast, the negative and significant effect of poverty indicates that higher poverty rates are associated with lower human development outcomes. These findings imply that improving the quality, efficiency, and targeting of public spending, particularly in poverty alleviation and basic service delivery, is essential for enhancing human development in East Nusa Tenggara. This study contributes to the literature on fiscal policy effectiveness in eastern Indonesia and provides practical recommendations for more evidence-based budget planning and poverty reduction strategies.

INTRODUCTION

The current development process is not only an indicator of increasing economic growth but also an effort to improve people's welfare (Jawa et al., 2024; Lestari & Arumi, 2024; Nguyen & Khominich, 2023; Pranita et al., 2022; Samudra, 2024; Singh et al., 2022; Triatmanto & Bawono, 2023). The human development approach positions people as the main focus of development by enhancing their ability to access education, healthcare, and a decent standard of living. Sen (1999) explained that development is a process of expanding human capabilities to achieve a more decent life. Thus, the success of development is not only measured from an economic perspective but also by the extent to which people have opportunities to improve their quality of life

The concept of human development was later developed by the United Nations Development Programme (UNDP) through the Human Development Index (HDI) indicator (Carraro, 2022; De Siqueira et al., 2022; Estes, 2024; Gasper, 2022; Telleria, 2023; Uddin, 2023). HDI is used to measure development achievements through three main dimensions: health, education, and a decent standard of living (UNDP, 2024). Therefore, HDI is an important indicator for assessing the government's success in improving people's welfare.

Although human development in Indonesia has generally improved, HDI achievements across regions still demonstrate disparities (Aziz, 2026; Iskandar et al., 2026; Pongge et al., 2025; Putri et al., 2024). One region that continues to face challenges in improving human development is East Nusa Tenggara Province (NTT). A comparison of HDI development in Indonesia and NTT during the 2019–2024 period is presented in the following table.

Table 1. Development of the Human Development Index in Indonesia and East Nusa Tenggara in 2019-2024

Year	Indonesia	NTT
2019	71,92	65,23
2020	72,81	65,19
2021	73,16	65,28
2022	73,77	65,90
2023	74,39	66,68
2024	75,02	67,39

Source: Central Statistics Agency, processed by Researcher.

The Central Statistics Agency's report on the HDI development table above shows that the HDI value of East Nusa Tenggara Province has consistently remained below the national average during the 2019–2024 period. Although the HDI of East Nusa Tenggara Province (NTT) increased from 65.23 in 2019 to 67.39 in 2024, this improvement still indicates a gap compared with the national achievement of 75.02 in 2024. This condition demonstrates that human development in NTT continues to face various challenges, particularly in improving the quality of education, healthcare, and living standards.

In improving human development, local governments have authority through regional fiscal policies, one of which is implemented through the allocation of local government spending. Through the Regional Revenue and Expenditure Budget (APBD), the government can finance various public services, such as education, healthcare, and infrastructure development, which are directly related to improving the quality of life of communities. However, the magnitude of government spending does not always indicate successful development outcomes if it is not accompanied by effective budget management and appropriate allocation.

The issue of government spending effectiveness is important to study in East Nusa Tenggara Province because the region has the characteristics of an archipelagic area, limited access to public services, and disparities in socio-economic conditions among regencies/cities. These differences affect the capacity of local governments to manage budgets and provide public services, resulting in varying human development achievements across regions.

Several previous studies have examined the relationship between government spending and improvements in human development. Mongan (2019) found that government spending in the education and health sectors affects HDI in Indonesia. In addition, Halim et al. (2022) demonstrated that local government spending influences human development using a panel data approach. However, studies that specifically analyze the effectiveness of local government spending at the regency/city level in East Nusa Tenggara Province remain relatively limited. Saputra et al. (2018) showed that local government financial characteristics are associated with local government performance and human development achievements. Research on local

government expenditure also highlights the contribution of basic service sector spending to improving human development. Therefore, there is a research gap regarding how effective local government spending is in improving human development in regions with different fiscal capacities and geographical characteristics compared with more developed areas.

This research addresses three main research questions: (1) How has the development of local government spending and the Human Development Index (HDI) at the regency/city level in East Nusa Tenggara Province progressed during the 2019–2024 period? (2) Does local government spending affect HDI? (3) Do poverty and GDP per capita affect HDI? Accordingly, this research aims to analyze the development of local government spending and HDI, examine the effect of local government spending on HDI, and investigate the economic factors affecting HDI in the regencies and cities of East Nusa Tenggara Province.

This research is expected to provide both academic and practical benefits. Academically, it contributes to the literature on fiscal policy effectiveness and human development, particularly in the context of eastern Indonesia, by providing empirical evidence regarding the relationship between local government spending, poverty, GDP per capita, and HDI using panel data analysis. It also serves as a reference for future research on regional fiscal policy and human development in areas with unique geographical and socio-economic characteristics. Practically, this study provides valuable insights for policymakers, particularly local governments in NTT, by evaluating the effectiveness of regional spending in improving human development outcomes. It offers recommendations for more targeted budget allocation toward priority sectors, such as education, healthcare, and infrastructure. Additionally, the findings can support evidence-based policy formulation to reduce poverty and improve HDI, ultimately contributing to more equitable and sustainable human development in the province.

METHOD

Data Sources and Types

This study used panel data regression analysis covering a six-year period from 2019 to 2024. Three commonly applied panel data models were considered: the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). To determine the most appropriate model for this study, model selection tests were conducted, including the Chow test, Hausman test, and Lagrange Multiplier test.

This study employed an explanatory quantitative approach to examine the relationship between regional expenditure policies and HDI in the regencies/cities of East Nusa Tenggara Province (NTT) during the 2019–2024 period. This approach was used to test the hypotheses and analyze the effects among the variables examined. The regression model was formulated as follows:

$$IPMit = \beta 0 + \beta 1Spend + \beta 2Poverty + \beta 3PDRBit + eit$$

HDI (Y1) is a dependent variable that is influenced and must be explained, Local Government Expenditure (X1) as an independent variable that affects HDI and becomes the focus of testing, then Poverty and GDP per Capita (X2 and X3) are control variables that also affect HDI.

Hypothesis

Based on the theoretical foundation, previous researchers, and analytical framework, here is the hypothesis formulation:

H1 : Regional Government Expenditure has a significant effect on the HDI of Regencies/Cities of East Nusa Tenggara Province in 2019-2024.

H2 : Regional Government Expenditure does not have a significant effect on the HDI of Regencies/Cities of East Nusa Tenggara Province in 2019-2024.

H3 : Poverty has a significant effect on the HDI of Regencies/Cities of East Nusa Tenggara Province in 2019-2024.

H4 : Poverty does not have a significant effect on the HDI of Regencies/Cities of East Nusa Tenggara Province in 2019-2024.

H5 : ADHK's GDP per Capita has a significant effect on the HDI of Regencies/Cities of East Nusa Tenggara Province in 2019-2024.

H6 : ADHK's GDP per capita does not have a significant effect on the HDI of Regencies/Cities of East Nusa Tenggara Province in 2019-2024.

RESULTS AND DISCUSSION

Descriptive Statistics

Descriptive statistics is a branch of statistics that is used to collect, process, present, and describe data so that the characteristics of a data can be easily understood. The main purpose of descriptive statistics is not to draw conclusions or generalize about the population, but to provide an overview of the condition of the data obtained from the results of the research. The following are the results of the descriptive statistics presented in the table below

Descriptive Statistical Results

Table 2. Descriptive Statistical Results

Variable	Obs	Mean	Std. dev.	Min	Max
ipm	132	66,69773	4,4438	56,66	83,21
Spending	132	1001,806	226,4196	569,8	1564,9
poverty	132	21,11879	6,900646	8,24	34,62
pdrb	132	3327,813	3277,562	750,15	18697,85

Source: Researcher's data processing using STATA 17 (panel data of 22 regencies/cities in NTT, 2019–2024)

Based on the table, it is known that the number of observations used in the study is 132 data with the following details

- The Human Development Index (HDI) variable has an average value of 66.70 with a standard deviation of 4.44, a minimum value of 56.66, and a maximum value of 83.21. This shows that the HDI level in the district/city that is the object of the study has a relatively low variation because the standard deviation value is smaller than the average value.
- The Expenditure variable has an average value of 1,001.81, a standard deviation of 226.42, a minimum value of 569.80, and a maximum value of 1,564.90. This value shows that local government spending on the research sample has a relatively small variation, so the dissemination of data tends not to be too far from the average value.

- The Poverty variable has an average value of 21.12, with a standard deviation of 6.90, a minimum value of 8.24, and a maximum value of 34.62. This indicates that the poverty rate in the study area has a relatively low data dissemination because the standard deviation is smaller than the average value.
- The Gross Regional Domestic Product (GDP) variable has an average value of 3,327.81 with a standard deviation of 3,277.56, a minimum value of 750.15, and a maximum value of 18,697.85. The standard deviation value that is almost equal to the average value shows that the GDP data has a fairly high variation between districts/cities in the observation period, so that there is a considerable difference in the level of GDP among the study areas.

Model Selection

The selection of a panel data regression model is an important stage in the analysis of panel data to determine the most suitable estimation model to be used in the study. Panel data is a combination of cross section data (between individuals, districts/cities, companies, or research objects) and time series (time period). In the regression of panel data, there are three main approaches, namely the Common Effect Model (CEM), the Fixed Effect Model (FEM), and the Random Effect Model (REM). The selection of the model was carried out through several statistical tests, namely the Chow Test, the Hausman Test, and the Lagrange Multiplier (LM) Test.

Chow Test

The Chow test is a test used in panel data regression to determine the most appropriate model between the Common Effect Model (CEM) and the Fixed Effect Model (FEM). This test is carried out to find out whether there are differences in individual characteristics or research objects that cause the use of the fixed effect model to be more appropriate than the common effect model. The hypothesis is as follows:

- H_0: Common Effect Model is more precise.
- H_1: Fixed Effect Model is more precise.

Criteria:

- If the Prob > F > 0.05, then choose CEM.
- If the Prob > F ≤ 0.05, then select FEM.

The following are the results of the chow test presented in the table below

Chow Test Results

Table 3. Chow Test Results

F test that all u_i=0: F (**21, 107**) = **22.63**	Prob > F = **0.0000**

Source: Researcher Data Processing using STATA 17

Based on the results of the Chow Test, an F(21.107) value of 22.63 was obtained with a Prob > F value of 0.0000. The value of the Prob > F of 0.0000 is smaller than the significance level of 0.05, so H_0 is rejected and H_1 is accepted. This shows that there are differences in characteristics between individuals (districts/cities) in the research model. Thus, the more appropriate model to use is the Fixed Effect Model (FEM) than the Common Effect Model (CEM). Based on these results, the regression analysis of the panel data then needs to be continued with the Hausman Test to determine whether the best model is between the Fixed Effect Model (FEM) or the Random Effect Model (REM).

Hausman Test

The Hausman test is a test in panel data regression that is used to determine the most appropriate model between the Fixed Effect Model (FEM) and the Random Effect Model (REM). This test was carried out after the results of the Chow Test showed that the Fixed Effect model was better than the Common Effect. The Hausman test tests whether there is a correlation between individual effects and independent variables in the model. If there is a correlation, then the appropriate model is the Fixed Effect Model. On the other hand, if there is no correlation, then the Random Effect Model is more appropriate. Hypotheses used in the Hausman Test:

- H_0: Random Effect Model (REM) is more appropriately used.
- H_1: Fixed Effect Model (FEM) is more appropriately used.

Decision-making criteria:

- If the value of the Prob > chi-square > 0.05, then H_0 is accepted → selecting the Random Effect Model (REM).
- If the value of the Prob > chi-square ≤ 0.05, then H_0 is rejected → choosing the Fixed Effect Model (FEM).

The following are the results of the test using the Haussman test

Hausman Test Results

Table 4. Hausman Test Results

chi2(3) =	(b-B)'[(V_b-V_B)^(-1)](b-B)
=	**43.44**
Prob > chi2 =	**0.0000**

Source: Researcher Data Processing using STATA 17

Based on the results of the Hausman Test, a Chi-square value of 43.44 was obtained with a chi-square > Prob value of 0.0000. The value of the Prob > chi-square of 0.0000 is smaller than the significance level of 0.05, so H_0 is rejected and H_1 is accepted. This shows that there is a significant difference between the Fixed Effect Model and Random Effect Model estimates. Thus, the more appropriate model used in this study is the Fixed Effect Model (FEM) than the Random Effect Model (REM). Based on the results of the Chow Test and the Hausman Test, it can be concluded that the most suitable panel data regression model to analyze the influence of Expenditure, Poverty, and GDP on HDI is to use the Fixed Effect Model (FEM) approach.

Classic Assumption Test

Before conducting a hypothesis test using regression analysis, there are several assumptions that must be met so that the conclusion of the regression is not biased, including normality test, multicollinearity test, heteroscedasticity test and autocorrelation test. The test was carried out with the help of the Stata 17 software and for more clarity will be discussed, as follows:

Test of Normality Assumptions

The normality test is used to understand whether the data or residues on the regression model are normally distributed. In regression analysis, the normality tested is the residual value, not each study variable. Methods that can be used in stata include the Skewness and Kurtosis Test. That is a test based on the value of skewness and curtosis of the residual

distribution. The basis for determining the decision is to observe the probability number p, with the following stipulations:

- If the Probability value > 0.05 then the assumption of normality is met.
- If the Probability value < 0.05 then the assumption of normality is not met.

The following are the results of the Normality test using statistical analysis presented in the table below.

Normality Test Results

Table 5. Normality Test Results

Skewness and kurtosis tests for normality

				------- Joint test -------	
Variable	**Obs**	**Pr(skewness)**	**Pr(kurtosis)**	**Adj chi2(2)**	**Prob>chi2**
resid	132	0.5903	0.8465	0.33	0.8490

Source: Researcher Data Processing using STATA 17

Based on the results of the Skewness and Kurtosis Test, it is known that the residual research has a Pr(skewness) value of 0.5903 and Pr(kurtosis) of 0.8465. In addition, the results of the combined test showed an Adjusted Chi-square value of 0.33 with a Prob > Chi-square of 0.8490. The Chi-square > Prob value of 0.8490 is greater than the significance level of 0.05, so H_0 is accepted. Thus, it can be concluded that the residual regression model is normally distributed. Therefore, the normality assumptions in the regression model have been fulfilled so that the model is suitable for further analysis.

Multicollinearity Test

Multicollinearity testing aims to understand whether there is a high correlation between independent variables in the regression model. The model can be said to be good if it does not experience multicollinearity because this condition can make the regression coefficient unstable and the determination of the model estimation reduced. Multicollinearity testing is usually carried out by applying Variance Inflation Factor (VIF) and Tolerance (1/VIF) values. The VIF value shows how much the variance of the regression coefficient has increased due to the correlation between independent variables, on the other hand, the Tolerance value shows the proportion of variation of an independent variable that cannot be deciphered by other independent variables. The criteria for determining the decision are as follows:

- VIF < 10 and Tolerance (1/VIF) > 0.10 indicate the absence of multicollinearity.
- VIF ≥ 10 or Tolerance (1/VIF) ≤ 0.10 indicates the existence of multicollinearity.

The following are the results of the multicollinearity test listed in this table

Multicollinearity Test Results

Table 6. Multicollinearity Test Results

Variable	**VIF**	**1/VIF**
pdrb	1,40	0,711925
poverty	1,23	0,814330
Spending	1,19	0,840120
Mean VIF	1,27	

Source: Researcher Data Processing using STATA 17

Based on the results of the multicollinearity test, the VIF score for the GDP variable was 1.40, Poverty was 1.23, and Expenditure was 1.19. Meanwhile, the Tolerance values (1/VIF) are 0.7119, 0.8143, and 0.8401, respectively. In addition, a Mean VIF value of 1.27 was obtained. All independent variables have a VIF value of less than 10 and a Tolerance value greater than 0.10. Therefore, it can be concluded that there are no symptoms of multicollinearity in the regression model. This shows that the variables Expenditure, Poverty, and GDP are not linearly related to each other, so that in the next regression analysis, all independent variables are suitable for use.

Heterokedasticity Test

The heteroscedasticity test was used to understand whether there was an inequality of residual variance in each independent variable value in the regression model. It can be said to be a good regression model if it has a constant residual variance (homoscedasticity), so that heteroscedasticity does not occur. In Stata, one of the methods used to find heteroscedasticity is the Breusch–Pagan/Cook–Weisberg Test. The following are the basis for decision-making

If the Sig. value > 0.05 then there are no symptoms of heteroscedasticity

If the Sig. value < 0.05 Symptoms of heteroscedasticity occur

The following are the results of the Heteroscedasticity Test presented in the Table below.

Heteroscedasticity Test Results

Table 7. Heteroscedasticity Test Results

Breusch-Pagan / Cook-Weisberg Test for Heteroskedasticity	
Assumption: Normal error terms	
Variable: Fitted values of ipm	
H0: Constant variance	
chi2(1)	**2,35**
Prob > chi2	**0,1254**

Source: Researcher Data Processing using STATA 17

Based on the results of the Breusch–Pagan/Cook–Weisberg test, a Chi-square value of 2.35 was obtained with a Chi-square > Prob value of 0.1254. The value of the Prob > Chi-square of 0.1254 is greater than the significance level of 0.05, so H_0 is accepted. Therefore, it can be concluded that there are no symptoms of heteroscedasticity in the regression model. Therefore, this test shows that residual variance has a constant property (homoskedasticity), so the regression model already meets the assumption of heteroscedasticity and is suitable for further analysis.

Autocorrelation Test

The autocorrelation test is a way to find out if there is a correlation between the residual in a period and the residual in the previous period. In panel data analysis, one of the methods that is usually used is the Wooldridge Test for Autocorrelation in Panel Data. The use of this test is to detect whether there is first-order autocorrelation in the panel data model. The hypotheses used in the Wooldridge Test are as follows:

H_0: No first-order autocorrelation.

H_1: First-order autocorrelation exists.

The decision-making criteria are:

If the Prob > F > 0.05, then H_0 is accepted, so that no autocorrelation occurs.

If the Prob > F ≤ 0.05, then H_0 is rejected, resulting in autocorrelation.

Autocorrelation Test Results

Table 8. Autocorrelation Test Results

Wooldridge Test for Autocorrelation in Panel Data **H0: no first order autocorrelation**		
	F(1, 21) =	**541,629**
	Prob > F =	**0,0000**

Based on the results of the Wooldridge Test for Autocorrelation in Panel Data, an F(1.21) value of 541.629 was obtained with a Prob > F value of 0.0000. The value of the Prob > F of 0.0000 is smaller than the significance level of 0.05, so H_0 is rejected. Thus, it can be concluded that there are symptoms of first-order autocorrelation in the panel data model. The existence of autocorrelation indicates that the residual in one period correlates with the residual in the previous period, so one of the classical assumptions has not been fulfilled. Therefore, to obtain a more reliable estimate, the panel regression model needs to use autocorrelation handling, through robust standard errors.

Regression Estimation Results

Based on the results of the selection of the panel data regression model through the Chow test, the Hausman test, and the Lagrange Multiplier (LM) test, it was found that the most suitable model to be used in this study was the Fixed Effect Model (FEM). Next, classical assumption testing was carried out on the selected model. The test results showed that the model had autocorrelation problems, so to overcome this problem, a re-estimation was carried out using the robust standard error method. The use of robust standard errors aims to produce more accurate standard error values so that parameter significance tests (t-tests and F-tests) can still be performed even if there is a violation of the autocorrelation assumption. Thus, the interpretation of the hypothesis test results is based on the results of the Fixed Effect Model estimation with robust standard error.

Modeling Results

Table 9. Modeling Results (Fixed Effect Model with Robust Standard Errors)

ipm	Coefficient	Robust std. err.	t	P>|t|	[95% Conf. Interval] Lower	[95% Conf. Interval] Upper
Spending	-0,0027417	0,0016501	-1,66	0,111	-0,0061734	0,0006899
Poverty	-1,275721	0,2251589	-5,67	0,000	-1,743965	-0,8074779
pdrb	0,0015785	0,0010673	1,48	0,154	-0,0006411	0,0037982
_cons	91,13303	8,057414	11,31	0,000	74,37672	107,8893

Source: Data Processing Researcher using STATA 17

The results of the panel data regression estimation with the robust Fixed Effect Model (FEM) approach are as follows:

$$Y = 91.13303 - 0.0027417X_1 - 1.275721X_2 + 0.0015785X_3$$

Where:

Y = IPM

X1 = Regional Expenditure

X2 = Poverty Rate
X3 = GDP
Based on the regression equation, it can be explained as follows:

1. The constant value of 91.13303 indicates that if the variables of regional expenditure, poverty, and GDP are considered constant or zero, then the HDI value is 91.13303.
2. The regional expenditure coefficient of -0.0027417 indicates that any increase in regional expenditure of 1 unit will cause a decrease in HDI of 0.0027417 units, assuming that the other variables remain the same. However, this effect needs to be seen based on the results of the significance test.
3. The poverty coefficient of -1.275721 indicates that every increase in the poverty rate by 1 unit will cause a decrease in HDI of 1.275721 units assuming other variables are fixed.
4. The GDP coefficient of 0.0015785 indicates that every increase in GDP by 1 unit will increase the HDI by 0.0015785 units assuming other variables are fixed.

Hypothesis Testing

Hypothesis testing is used to find out whether there is an influence of independent variables on dependent variables either partially or simultaneously, as well as how much influence these independent variables have in the regression model. In this study, regression analysis was used to predict how much influence between Regional Expenditure, Poverty Level, and GDP on HDI. The calculation of this test was carried out with the help of Stata 17, the results of the hypothesis test were divided into two, namely the simultaneous test using f and the partial test using the t test. The following are the results of the hypothesis testing.

Simultaneous Test (F Test)

Simultaneous tests are carried out to determine the influence of several independent variables together on one dependent variable, the basis for decision-making of this F Test is as follows:

- If the value of Sig. < 0.05, then the independent variable has a simultaneous effect on the dependent variable.
- If the Sig. value > 0.05, then the independent variable has no simultaneous effect on the dependent variable.

The following are the results of the hypothesis test using a simultaneous test (F Test)

Simultaneous Test Results

Table 10. Simultaneous Test Results (F Test)

F **(3,21)** =	**30.38**
Prob **>** F =	**0.0000**

Source: Data Processing Researcher using STATA 17

Based on the table above, the probability value of F of 0.0000 is smaller than the significance level of 0.05 (0.0000 < 0.05), so that the test decision is H0 rejected and Ha accepted. Thus, it can be concluded that the variables of regional spending, poverty, and GDP simultaneously have a significant effect on the Human Development Index (HDI) in the districts/cities that are the object of the study. These results show that the changes that occur in HDI are not only influenced by one variable individually, but are collectively influenced by a combination of regional economic factors consisting of local government spending, poverty levels, and regional economic conditions reflected through GDP.

Partial Test (t-test)

Partial tests were carried out to determine the influence of each independent variable on the dependent variable partially. Partial tests can be carried out through t-test statistics by comparing the value of Sig. t with an alpha value of 0.05 and also counting it with a table, the basis for decision-making is as follows.

- If Sig. < 0.05, then the independent variable has a partial effect on the dependent variable.
- If Sig. > 0.05, then the independent variable has no partial effect on the dependent variable.

The following are the results of the hypothesis test using a partial test (T test)

Partial Test Results

Table 11. Partial Test Results (t-test)

ipm	Coefficient	Robust std. err.	t	P>|t|	[95% Conf. Interval]	
					Lower	Upper
Spending	-0,0027417	0,0016501	-1,66	0,111	-0,0061734	0,0006899
Poverty	-1,275721	0,2251589	-5,67	0,000	-1,743965	-0,8074779
pdrb	0,0015785	0,0010673	1,48	0,154	-0,0006411	0,0037982
_cons	91,13303	8,057414	11,31	0.000	74.37672	107.8893

Source: Data Processing Researcher using STATA 17

Based on the results of the t-test, which is presented in the table above, the following information was obtained:

The Influence of Regional Expenditure on HDI

The test results showed that the regional expenditure variable had a coefficient value of -0.0027417 with a probability value of 0.111. The probability value is greater than the significance level of 5% (0.111 > 0.05), so H0 is accepted and Ha is rejected. Thus, it can be concluded that regional spending partially does not have a significant effect on the Human Development Index (HDI).

The Effect of Poverty on HDI

The test results showed that the poverty variable had a coefficient value of -1.275721 with a probability value of 0.000. The probability value is smaller than the significance level of 5% (0.000 < 0.05), so H0 is rejected and Ha is accepted. Thus, it can be concluded that poverty partially has a negative and significant effect on the Human Development Index (HDI).

Effect of GDP on HDI

The test results showed that the GDP variable had a coefficient value of 0.0015785 with a probability value of 0.154. The probability value is greater than the significance level of 5% (0.154 > 0.05), so H0 is accepted and Ha is rejected. Thus, it can be concluded that GDP does not partially have a significant effect on the Human Development Index (HDI).

Coefficient of Determination

The determination coefficient is used to measure how much an independent variable is able to explain the variation in changes in dependent variables in a regression model. The value of the determination coefficient indicates the proportion of information that can be explained by an independent variable to the dependent variable, while the rest is explained by other factors outside the research model. If the number of the coefficient of determination is getting closer

to 1, then the influence of the independent variable on the dependent variable is getting higher. The following are the results of the determination coefficient (*R2*) presented in the Table below.

Determination Coefficient Results

Table 12. Coefficient of Determination Results (R-squared)

R-squared:	
Within =	**0.5584**
Between =	**0.6589**
Overall =	**0.6157**

Source: Data Processing Researcher using STATA 17

Based on the results of the determination coefficient test above, it is known that the value within r squared is 0.5584. This value shows that independent variables consisting of regional spending, poverty, and GDP are able to explain the variation in the change in the Human Development Index (HDI) by 55.84%, while other factors outside the model contribute 44.16%.

CONCLUSION

Based on the results of the study, it can be concluded that local government spending did not have a direct and significant impact on increasing the Human Development Index (HDI) in the regencies/cities of East Nusa Tenggara Province during the 2019–2024 period, as the test results indicated statistically insignificant effects. Similarly, GDP per capita did not show a significant effect on HDI. In contrast, poverty had a negative and significant influence, indicating that an increase in poverty contributed to a decline in human development. Therefore, the government needs to improve budget allocation strategies by directing expenditures toward more targeted programs, particularly in public services, to better address community needs.

Based on these findings, it is recommended that local governments in East Nusa Tenggara Province improve the quality, efficiency, and targeting of regional expenditures by ensuring that budget allocations in the education, health, and infrastructure sectors are effectively implemented and monitored through performance-based budgeting mechanisms. Poverty reduction programs should also be prioritized through the expansion of social protection, improvement of access to basic services, and empowerment of community-based economic activities, considering that poverty was found to have a significant negative impact on HDI. Furthermore, coordination between provincial and district/city governments should be strengthened to ensure that fiscal policies are aligned with regional development priorities. Economic growth strategies should also be reassessed to promote more inclusive growth that directly enhances human welfare, given that GDP per capita was found to have no significant effect on HDI. Future research is encouraged to examine sectoral government spending in greater depth and incorporate additional variables to provide more comprehensive insights into the determinants of human development in East Nusa Tenggara Province.

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