

## ***The Effect of Government Expenditure And Economic Growth on The Human Development Index in Riau Province***

### **Pengaruh Pengeluaran Pemerintah Dan Pertumbuhan Ekonomi Terhadap Indeks Pembangunan Manusia Provinsi Riau**

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#### **ABSTRACT**

*This study aims to analyze the effect of Government Expenditure and Economic Growth on the Human Development Index (HDI) in Riau Province. HDI is used as an indicator to measure the level of community welfare from aspects of education, health, and standard of living. The method used is multiple linear regression with secondary data processed using the E-Views 10 program. The results show that partially, government expenditure has a positive and significant effect on HDI in Riau Province during the 2010–2023 period, while economic growth has a positive but not significant effect. Simultaneously, both variables have a significant effect on HDI in Riau Province during the 2010–2023 period. These findings indicate the important role of government expenditure in improving the quality of life of the population.*

**Keywords:** Government Expenditure, Economic Growth, Human Development Index

#### **ABSTRAK**

Penelitian ini bertujuan untuk menganalisis pengaruh Pengeluaran Pemerintah dan Pertumbuhan Ekonomi terhadap Indeks Pembangunan Manusia (IPM) di Provinsi Riau. IPM digunakan sebagai indikator untuk mengukur tingkat kesejahteraan masyarakat dari aspek pendidikan, kesehatan, dan standar hidup layak. Metode yang digunakan adalah regresi linier berganda dengan data sekunder yang diolah menggunakan program E-Views 10. Hasil penelitian menunjukkan bahwa secara parsial, pengeluaran pemerintah berpengaruh positif dan signifikan terhadap IPM di Provinsi Riau selama periode 2010–2023, sedangkan pertumbuhan ekonomi berpengaruh positif namun tidak signifikan. Secara simultan, kedua variabel tersebut berpengaruh signifikan terhadap IPM di Provinsi Riau dalam periode yang sama. Temuan ini menunjukkan pentingnya peran pengeluaran pemerintah dalam meningkatkan kualitas hidup penduduk.

**Kata Kunci:** Pengeluaran Pemerintah, Pertumbuhan Ekonomi, Indeks Pembangunan Manusia

### **1. Introduction**

The Human Development Index (HDI) is recognized as a comprehensive measure of development, integrating economic outcomes with critical social dimensions like health and education. This composite index aligns with Sen's capability approach, which emphasizes expanding people's freedoms to live long, healthy, and meaningful lives. In Indonesia, BPS calculates HDI through life expectancy, mean and expected years of schooling, and per capita expenditure—key variables that reflect overall human welfare. Studies in regions like Riau stress that fiscal policies, especially government spending on education, healthcare, and infrastructure, can directly enhance these dimensions of human well-being (Maryozi et al., 2022; Marbun, 2018).

Enhancing human development is essential for cultivating high-quality human resources, which, in turn, fosters sustainable economic and social progress. Research indicates that without

targeted improvements in human capital, economic growth alone cannot produce widespread welfare gains (Firmansyah et al., 2020; Mongan, 2019). Notably in Riau, allocations in education and health sectors have been shown to yield positive outcomes for school enrollment and healthcare access—core components of HDI (Desriandra et al., 2016; Sutono, 2022).

Economic growth typically reflects increased output measured by GDP or GRDP, and theoretically leads to income growth, enabling better access to education, health, and living standards. However, when growth is uneven or skewed toward particular industries, its benefits may not reach broader society (Maulidya, 2021; Zulkarnain & Setyawan, 2020). In Riau's case, reliance on extractive sectors has led to growth without equivalent improvements in HDI, creating a discrepancy between economic performance and human development (Wijayanti, 2024).

Few prior studies have analyzed these variables—government expenditure and economic growth—collectively at the provincial level in Riau. Typically, research either focuses on spending in specific sectors (e.g., Maryozi et al., 2022) or isolates economic growth effects in broader national or sub-national contexts (Maharda & Aulia, 2020; Mongan, 2019). This oversight leaves a gap in understanding the synergistic interactions of fiscal policy and growth for human development in Riau.

This study addresses that gap by simultaneously examining the impact of government expenditure and economic growth on HDI in Riau Province from 2010 to 2023. By integrating both fiscal and economic variables, this research offers a more holistic insight into drivers of human development in a resource-rich but socially uneven region (Firmansyah et al., 2020; Sutono, 2022).

The novelty of this analysis lies in evaluating these variables jointly rather than in isolation, enabling a more nuanced view of how economic and fiscal policies can work together to enhance human development in Riau. This integrated perspective is critical to developing policy that not only stimulates growth but also translates growth into tangible social improvements (Sihombing, 2017; Zaini & Hartanto, 2023).

The main objectives of this research are twofold: to assess the partial effects of government expenditure and economic growth on HDI, and to evaluate their combined impact. By doing so, it seeks to inform policymakers in Riau on how to design comprehensive strategies that target both economic and social dimensions of development (Maryozi et al., 2022; Said et al., 2024).

Ultimately, the findings are intended to guide provincial authorities in developing more inclusive policies. By emphasizing social investments and equitable growth, Riau can better ensure that economic gains translate into improved education, healthcare access, and overall quality of life for its residents (Arfiyansyah & Khusaini, 2018; Sutono, 2022).

## **2. Literature Review**

### **Government Expenditure**

Government expenditure is a fundamental tool of fiscal policy, employed by governments to influence economic performance and enhance social welfare through strategic allocation of budgets. At the regional level, this function is operationalized through the *Anggaran Pendapatan dan Belanja Daerah* (APBD), where spending on sectors such as education, health, and infrastructure directly supports improvements in public service access and quality (Marbun, 2018; Sutono, 2022). Empirical evidence shows that when these allocations are efficiently managed, they significantly boost components of the Human Development Index (HDI), particularly in terms of schooling and health outcomes (Maryozi, Isyandi, & Aulia, 2022; Simamora et al., 2024). In regions like Riau Province, increased education and health spending has been positively associated with better life expectancy and educational attainment.

### **Economic Growth**

Economic growth is commonly measured through indicators such as Gross Domestic Product (GDP) or Gross Regional Domestic Product (GRDP) and is regarded as a central driver of development. Growth reflects an increase in the value of goods and services produced in an economy, leading ideally to rising income and consumption (Maharda & Aulia, 2020; Zulkarnain & Setyawan, 2020). In theory, higher income levels enable individuals to better fulfill their basic needs, which translates into better health, improved education, and higher living standards (Firmansyah, Ilman, & Permatacita, 2020). However, in practice, the quality and inclusiveness of economic growth determine its real impact on human development. In regions where economic expansion is concentrated in extractive or capital-intensive sectors, such as Riau, the gains may not equitably reach all population segments (Maulidya, 2021; Wijayanti, 2024). This phenomenon underscores the importance of inclusive economic policies to ensure that growth is accompanied by tangible social benefits.

### **Human Development**

Human development, as conceptualized by Amartya Sen and operationalized through the Human Development Index (HDI), emphasizes enhancing individuals' capabilities to live long, healthy, and meaningful lives. The HDI integrates health (life expectancy), education (schooling), and income (standard of living) into a composite measure of well-being (Mongan, 2019; Path Analysis, 2021). This perspective moves beyond traditional economic indicators and places people at the center of development strategies. In Indonesia, regional disparities in HDI persist despite national-level improvements, indicating the need for targeted interventions that address local conditions and capabilities (Desriandra, Murialti, & Anriva, 2016; Yulianti & Saputra, 2021).

### **The Relationship Between Government Expenditure and the Human Development Index**

Government expenditure, particularly when directed toward human capital development, has a measurable impact on HDI. Spending on education enhances both mean years of schooling and expected years of schooling, while health expenditure improves access to healthcare and raises life expectancy (Said, Apridar, & Silvia, 2024; Kurniawan & Murtala, 2020). Empirical studies in Indonesian provinces confirm that public investments in these sectors are significantly correlated with improvements in HDI, particularly when spending is efficiently allocated (Zaini & Hartanto, 2023; Sihombing, 2017). In Riau Province, targeted government spending on infrastructure, schools, and clinics has been associated with moderate but consistent improvements in development outcomes (Sutono, 2022; Maryozi et al., 2022).

### **The Relationship Between Economic Growth and the Human Development Index**

Economic growth also influences HDI, primarily by increasing both household and government income, which in turn can finance better services and infrastructure (Zulkarnain & Setyawan, 2020; Bandiyono, 2018). However, this relationship is not automatic. Studies show that in regions where growth is not inclusive or fails to generate broad employment opportunities, the impact on HDI is limited (Marbun, 2018; Zunaidi & Hafiz, 2023). For instance, in Riau Province, where growth has been driven by resource-based industries, the effect on HDI is less pronounced compared to regions with diversified and labor-intensive economies (Desriandra et al., 2016; Maulidya, 2021). This underscores the importance of complementing economic expansion with

redistributive and participatory development strategies that ensure equitable access to the benefits of growth (Arfiyansyah & Khusaini, 2018).

### Research Framework

The research framework serves as a conceptual foundation that guides the study by illustrating the relationships between key variables under investigation. In this study, the framework is designed to examine the influence of government expenditure and economic growth on the Human Development Index (HDI) in Riau Province. It integrates theoretical perspectives and empirical evidence to explain how government spending in critical sectors and overall economic expansion contribute to improvements in social dimensions such as health, education, and living standards. By mapping these relationships, the framework helps to clarify the pathways through which fiscal policy and economic dynamics affect human development outcomes, providing a structured approach for hypothesis formulation and data analysis.

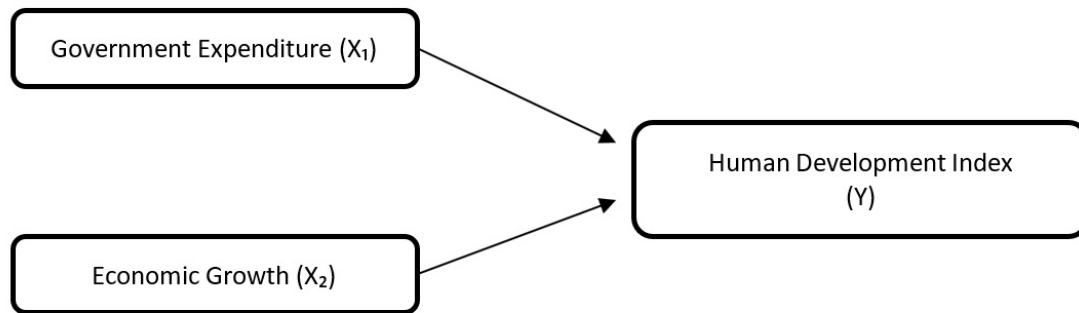


Figure 1. Research Model

### 3. Methods

In this study, the researcher uses a quantitative method. The quantitative method is a research approach used to address research problems by utilizing numerical data and statistical software. This study examines **"The Effect of Government Expenditure and Economic Growth on the Human Development Index in Riau Province."**

Meanwhile, the data processing in this study is carried out using E-Views software. The data analysis employs multiple regression analysis, which is used to determine the effect of government expenditure and economic growth on the Human Development Index, using the Ordinary Least Squares (OLS) method. The regression model is formulated as follows

$$Y = b_0 + b_1 X_1 + b_2 X_2 + \varepsilon$$

Description:

- Y : Human Development Index (HDI) (%)
- B<sub>0</sub> : Constant
- B : Coefficient value
- X<sub>1</sub> : Government Expenditure (Rp)
- X<sub>2</sub> : Economic Growth (%)
- b<sub>1</sub> : The regression coefficient of X<sub>1</sub>
- b<sub>2</sub> : The regression coefficient of X<sub>2</sub>
- ε : Error term

To reduce data variation, the multiple linear regression model is transformed into a semi-logarithmic form as follows:

$$Y = b_0 + b^1 \log X^1 + b^2 X^2 + \mathcal{E}$$

In this study, the data analysis techniques used include: Multiple Linear Regression Test, Classical Assumption Tests, and Hypothesis Testing

#### 4. Results and Discussion

##### 1. Multiple Linear Regression Test

This analysis is used to determine the effect of independent variables on the dependent variable by employing multiple linear regression analysis. It is useful for predicting the value of the dependent variable when there is an increase or decrease in the independent variables, and for identifying the direction of the relationship-whether it is positive or negative-between the independent and dependent variables

**Table 1. Multiple Linear Regression Test**

Dependent Variable: Y					
Method: Least Squares					
Date: 04/17/25 Time: 17:05					
Sample: 2010 2023					
Included observations: 14					
	Variable	Coefficient	Std. Error	t-Statistic	Prob.
	C	-90.71962	39.87982	-2.274825	0.0439
	Log X1	12.45653	3.052696	4.080501	0.0018
	X2	0.398027	0.244602	1.627239	0.1320
R-squared	0.618532	Mean dependent var		71.38714	
Adjusted R-squared	0.549175	S.D. dependent var		1.796079	
S.E. of regression	1.205951	Akaike info criterion		3.399823	
Sum squared resid	15.99748	Schwarz criterion		3.536764	
Log likelihood	-20.79876	Hannan-Quinn criter.		3.387146	
F-statistic	8.918003	Durbin-Watson stat		0.368822	
Prob(F-statistic)	0.004989				

Eviews, 2025

Based on the estimation results in Table 1, the regression equation can be formulated as follows:

$$Y = -90,71962 + 12,45653 \log X_1 + 0,398027 X_2 + e$$

From the above linear regression equation, the following interpretations can be made:

- The constant value ( $b_0$ ) = -90.71 means that if government expenditure and economic growth are assumed to be zero, then the Human Development Index (HDI) of Riau Province for the period 2010–2023 would be -90.71%. Although this value is not practically realistic—since the HDI cannot be negative—it still holds statistical meaning. This value should not be interpreted literally, but rather as an indication that the model heavily relies on the presence of variables  $X_1$  and  $X_2$  in predicting  $Y$ .
- The coefficient of government expenditure ( $b_1$ ) = 12.45. Based on the  $t$ -test, the probability value is 0.0018, which is smaller than  $\alpha = 0.05$ ; therefore,  $H_0$  is rejected and  $H_a$  is accepted.

This means that government expenditure has a statistically significant and positive effect on the Human Development Index (HDI) in Riau Province from 2010 to 2023. The positive effect indicates that a 1% increase in government expenditure leads to a 12.45% increase in the HDI of Riau Province.

- c. The coefficient of economic growth ( $b_2$ ) = 0.39. Based on the  $t$ -test, the probability value is 0.13, which is greater than  $\alpha = 0.05$ ; therefore,  $H_0$  is accepted. This indicates that economic growth does not have a statistically significant effect on the Human Development Index (HDI) in Riau Province from 2010 to 2023. This result may be due to the fact that economic growth does not always reflect equitable distribution of welfare, and thus its influence on the HDI in Riau Province during the study period is not significant.

d.

## 2. Hypothesis Testing

### a. Significance Test of Independent Variables (t-Test)

The  $t$ -test is used to determine the effect of each independent variable individually on the dependent variable. This test is conducted to assess whether the effect is statistically significant or not.

The confidence level used in this study is 95%, or a significance level of 5% ( $\alpha = 0.05$ ). Based on Table 4.1, the  $t$ -test results can be explained as follows:

1. **The Effect of Government Expenditure on the Human Development Index in Riau Province.**  
Based on the research results, the  $t$ -test probability value for government expenditure is 0.0018, which is less than  $\alpha = 0.05$ . Therefore,  $H_0$  is rejected and  $H_a$  is accepted. This means that, partially, government expenditure has a significant effect on the Human Development Index in Riau Province during the period 2010–2023.
2. **The Effect of Economic Growth on the Human Development Index in Riau Province.**  
Based on the research results, the  $t$ -test probability value for economic growth is 0.13, which is greater than  $\alpha = 0.05$ . Therefore,  $H_0$  is accepted and  $H_a$  is rejected. This indicates that, partially, economic growth does not have a significant effect on the Human Development Index in Riau Province during the period 2010–2023. This may be because economic growth does not always reflect equitable distribution of welfare. During the 2010–2023 period, economic growth in Riau Province was likely driven by sectors that had limited direct impact on education, health, and the population's purchasing power, resulting in an insignificant effect on the Human Development Index.

### b. F-test

**The F-test** is conducted to determine whether all independent variables simultaneously have a significant effect on the dependent variable. Based on Table 4.1, the probability value of the F-test is 0.0049, which is less than  $\alpha = 0.05$ . Therefore,  $H_0$  is rejected. This means that government expenditure and economic growth variables, taken together, have a statistically significant effect on the Human Development Index in Riau Province during the period 2010–2023.

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

The R-Square value in Table 4.1 is 0.55. This means that 55% of the variation in the dependent variable (Human Development Index) can be explained by the independent variables (Government Expenditure and Economic Growth). The remaining 45% is explained by other variables outside the model

### 3. Classical Assumption Tests

Classical assumption testing in the regression model consists of the normality test, multicollinearity test, and heteroscedasticity test. These tests must be conducted in multiple regression analysis to ensure the validity of the relationships between the variables used in the study. The results are explained as follows:

#### a. Normality Test

The normality test aims to examine whether, in the regression model, the independent and dependent variables—or both—are normally distributed.

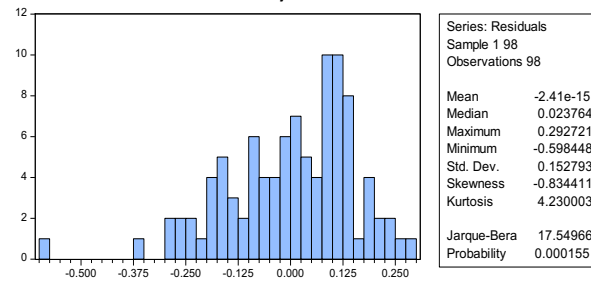


Figure 2. Normality Test

Based on figure 2, the results of the residual normality test show that the Jarque-Bera (JB) value is 1.33, while the Chi-Square critical value is 14.06. Since the JB value is relatively small, it indicates that the residuals in the regression model are **not normally distributed**.

#### b. Multicollinearity Test

The purpose of the **multicollinearity test** is to examine whether there is a correlation among the independent variables in the regression model. If such correlation exists, it indicates the presence of multicollinearity. An ideal regression model should have no multicollinearity between the independent variables. Multicollinearity can be detected using the **Variance Inflation Factor (VIF)**; if the VIF value is less than 10, the data is considered free from multicollinearity.

Table 2. Multicollinearity Test

Date: 04/17/25 Time: 17:04			
Sample: 2010 2023			
Included observations: 14			
Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	1590.400	15310.01	NA
Log X1	9.318956	14982.52	1.593184
X2	0.059830	6.280782	1.593184

Eviews, 2025

Based on Table 2, the VIF values for the independent variables show that the VIF for log  $X_1$  is 1.59 and for  $X_2$  is also 1.59. Since the VIF values for both variables are less than 10, it can be concluded that the model is free from multicollinearity.

### c. Heteroscedasticity Test

The heteroscedasticity test aims to examine whether there is an inequality of variance in the residuals from one observation to another in the regression model.

**Table 3. Heteroskedasticity Test**

Heteroskedasticity Test: White

F-statistic	2.457881	Prob. F(5,8)	0.1239
Obs*R-squared	8.479877	Prob. Chi-Square(5)	0.1317
Scaled explained SS	1.341659	Prob. Chi-Square(5)	0.9306

Eviews, 2025

Based on Table 4.4, the results of the White heteroscedasticity test show that the Chi-Square (5) probability value in the Obs\*R-squared statistic is 0.13, which is greater than 5%. Therefore, it can be concluded that the regression model does not suffer from heteroscedasticity and is free from heteroscedasticity symptoms.

### d. Autocorrelation Test

The autocorrelation test is used to examine whether there is a correlation between observations in a multiple linear regression model. This test can be conducted using the Durbin-Watson (DW) test.

**Table 4. Autocorrelation Test**

+		Uncertain		No Autocorrelation		Uncertain		(-)	
				↓					
0	DL		DU	1.837565	4-DU		4-DL		4
	1.1004		1.5367		2.4633		2.8996		

Eviews, 2025

Based on Table 4, the results show that the Durbin-Watson (DW) value is 1.83. Referring to the DW critical value curve, this value lies between DU and 4 – DU, which falls within the criteria indicating no autocorrelation

## Discussion

The results of the t-test show that government expenditure has a positive and statistically significant effect on the Human Development Index (HDI) in Riau Province during the 2010–2023 period. This supports the argument that public spending plays a pivotal role in improving community welfare by expanding access to education, health services, and basic infrastructure—three critical dimensions of human development. Studies by Marbun (2018), Firmansyah et al. (2020), and Arfiyansyah and Khusaini (2018) corroborate these findings, emphasizing that targeted government expenditure on education and health significantly boosts HDI performance across Indonesian regions. Likewise, Maryozi et al. (2022) highlight the positive impact of infrastructure investment in enhancing human development outcomes. This suggests that well-designed fiscal policies, especially



when allocated to sectors that directly affect quality of life, contribute meaningfully to inclusive and sustainable development.

In contrast, the findings show that economic growth, although positively related, does not have a statistically significant effect on HDI in Riau Province during the observed period. This may be attributed to the fact that not all growth translates into equitable improvements in social welfare. In regions where growth is driven by extractive industries or sectors with limited employment absorption—such as in many parts of Riau—its benefits may not sufficiently trickle down to influence the broader population's access to education, health, or decent living standards (Desriandra et al., 2016; Maharda & Aulia, 2020). Maulidya (2021) and Zulkarnain & Setyawan (2020) also found that in some provinces, economic growth alone was not a strong determinant of HDI unless accompanied by targeted social investments. These insights affirm that while economic expansion is necessary, it is not sufficient without a parallel emphasis on redistributive and social development policies.

Furthermore, the F-test results indicate that government expenditure and economic growth simultaneously have a significant effect on HDI. This finding underscores the importance of aligning macroeconomic growth strategies with social development priorities. As suggested by Kurniawan and Murtala (2020), the synergy between fiscal allocation and economic performance can create a multiplier effect in enhancing HDI. The R-squared value of 0.55 further confirms that 55% of the variation in HDI is explained by the combination of government expenditure and economic growth. This is consistent with the results of studies by Sutono (2022), Simamora et al. (2024), and Said et al. (2024), which demonstrated that integrated regional policy planning—combining growth strategies and spending efficiency—is key to achieving higher human development outcomes.

## 5. Conclusion

This study concludes that government expenditure in Riau Province has a positive and significant impact on the Human Development Index (HDI), particularly through investments in education, health, and basic services. Additionally, the combined effect of government spending and economic growth significantly contributes to improving the HDI in the region. This highlights the crucial role of government fiscal policy alongside economic development in enhancing the quality of life for the population.

Based on these findings, it is recommended that the Riau provincial government continue to increase budget allocations toward sectors directly influencing human development, while steering economic growth to be more inclusive and equitable for all communities. Future research should expand by incorporating other relevant variables such as unemployment rate, per capita expenditure, and school participation to provide a more holistic understanding of HDI determinants. Furthermore, the public is encouraged to actively utilize available government services and engage in community efforts to support sustainable human development.

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