



The Influence of Government Spending and Audit Opinion on the Human Development Index in Sulawesi Province

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Abstract

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This study aims to analyze the influence of government spending and audit opinion on the Human Development Index (HDI) in the provinces of North Sulawesi, South Sulawesi, Southeast Sulawesi, Central Sulawesi, and West Sulawesi. The research uses a quantitative approach with secondary data sourced from the Central Statistics Agency and the Financial Audit Agency until 2023. The analysis method used was multiple linear regression with the help of the Statistical Package for the Social Sciences (SPSS) software. The results of the analysis show that government spending has a positive effect on HDI, which indicates that increasing budget allocation in the public sector is able to encourage an improvement in the quality of human development. In addition, the audit opinion has also been shown to have a positive effect on HDI, which reflects that accountable and transparent regional financial management contributes to the effectiveness of the implementation of development programs. Simultaneously, government spending and audit opinion have an important role in increasing HDI. These findings show that the success of human development is not only determined by the amount of government spending, but also by the quality of regional financial governance. This research is expected to be a consideration for local governments in formulating development policies that are oriented towards improving community welfare.



1. Introduction

Regional development is a sustainable process that aims to improve the welfare of the community through improving the quality of life (Sabri et al., 2024). One of the indicators commonly used to measure the success of such development is the Human Development Index (HDI), which reflects achievements in the dimensions of health, education, and decent living standards. HDI is an important measure because it not only assesses economic growth, but also emphasizes the quality of human resources as a result of public policy.

The role of local governments in increasing HDI is closely related to fiscal policy, especially government spending. Government spending reflects the government's commitment to providing public services and social facilities needed by the community. Previous research has shown that government spending, especially in the education and health sectors, has great potential in encouraging improvement in human quality (Masduki et al., 2022). However, the effectiveness of such spending does not always show consistent results across regions, thus raising the need to examine more specific regional contexts.

In addition to the amount of spending, the quality of regional financial management is also an important factor in determining the success of development (Masdar et al., 2021). One of the indicators that represents the quality of regional financial management is the audit opinion provided by the Audit Board (BPK) on the local government's financial statements. The audit opinion reflects the level of compliance with government accounting standards as well as the effectiveness of the internal control system. Zami (2020) emphasized that audit opinions are closely

related to the performance of local government financial management, although most of the research still focuses on aspects of financial reporting and transparency.

Other research shows that audit opinions have an effect on the level of disclosure of local government financial statements and reflect a commitment to good governance (Thio et al., 2022). However, most of these studies have not directly linked audit opinions to social development outcomes such as HDI, so the relationship between financial accountability and community welfare has not been explored optimally.

In the context of eastern Indonesia, the relationship between government spending and HDI is becoming increasingly relevant. Sayyidina et al. (2023) found that education and health sector spending has an important role in human development and poverty reduction in eastern Indonesia. However, the study has not included financial governance variables, such as audit opinions, as factors that have the potential to strengthen or weaken the influence of government spending on HDI.

Studies that attempt to link audit opinions to HDI are still very limited. Indramawan et al. (2021) found that audit opinions have not been able to play an optimal role as a mediating variable between regional financial performance and HDI. These findings indicate the inconsistency of empirical results and open up space for further research with different regional and period approaches. In addition, most studies still use large national or cross-regional coverage, so they have not been able to capture specific characteristics between provinces.

Marina and Satrianto (2023) through a national panel study showed that the government's spending response has an effect on HDI and inclusive economic growth. However, the study has not integrated aspects of regional financial accountability, especially audit opinions, as independent variables. This shows that there is a research gap in simultaneously examining the role of government spending and audit opinions on HDI.

Based on this description, there is a clear research gap, namely the limited studies that simultaneously examine the influence of government spending and audit opinions on HDI at the provincial level, especially in the Sulawesi region (North Sulawesi, South Sulawesi, Southeast Sulawesi, Central Sulawesi, and West Sulawesi). Therefore, this study is important to provide empirical evidence on how the combination of fiscal capacity and the quality of regional financial management contributes to human development until 2023.

2. Literature Review

2.1. Effect of Audit Opinion on Human Development Index (HDI)

The audit opinion provided by the Audit Board (BPK) is a formal indicator of the quality of local government financial management (Utami et al., 2020). The audit opinion reflects the level of compliance with government accounting standards, the effectiveness of internal control systems, and compliance with laws and regulations. Better opinions, such as Reasonable Without Exception (WTP), show that regional financial management has been carried out in an accountable and transparent manner.

Theoretically, accountable financial management will increase the effectiveness of the use of the public budget, so that development programs can be carried out optimally and on target. Zami (2020) stated that audit opinions have a close relationship with the performance of local government financial management. Although the study placed more emphasis on the financial reporting aspect, the results showed that audit opinions can reflect the managerial and governance capacity of local governments.

Other research shows that audit opinions have an effect on the level of disclosure of local government financial statements and reflect the government's commitment to implementing the principles of good governance (Thio et al., 2022). Good financial governance is believed to be able to increase public trust and policy effectiveness, which ultimately has an impact on improving the quality of public services.

In the context of human development, the relationship between audit opinion and HDI can be explained through the mechanism of public spending effectiveness. A good audit opinion indicates that education, health, and social sector budgets are managed efficiently, so that human development outputs and outcomes can be optimally achieved. However, Indramawan et al. (2021) found that the role of audit opinions on HDI has not shown consistent results, especially when used as a mediating variable. These findings indicate that the relationship between audit opinion and HDI still requires further empirical testing with different approaches and contexts.

Thus, based on governance theory and previous empirical findings, audit opinions are estimated to have a positive influence on HDI, although the results of previous research still show variations. Therefore, the hypothesis proposed is:

H₁: Audit opinion has a positive effect on the Human Development Index (HDI).

2.2. Effect of Government Spending on the Human Development Index (HDI)

Government spending is the main instrument of regional fiscal policy in encouraging development and community welfare. The allocation of expenditure in the education, health, and social infrastructure sectors is directly related to the dimensions that form HDI. In theory, increasing government spending directed at public services will improve the quality of human resources and people's living standards.

Previous research has shown that government spending has an important role in increasing HDI. Masduki et al. (2022) found that regional spending contributes to increasing HDI, although the level of effectiveness differs between regions. This shows that the regional context greatly influences the success of public spending in promoting human development.

In the context of eastern Indonesia, Sayyidina et al. (2023) show that education and health sector spending has a significant effect on human development and poverty reduction. These findings reinforce the view that government spending is a key factor in improving people's quality of life, especially in areas that still face development limitations.

A national panel study by Marina and Satrianto (2023) also found that government spending responses have an effect on HDI and inclusive economic growth. However, the study uses a national scope so that it has not been able to capture specific dynamics between provinces. Differences in fiscal capacity, budget priorities, and regional financial governance have the potential to cause variations in the influence of government spending on HDI at the provincial level.

Based on public economic theory and the results of previous empirical research, government spending is estimated to have a positive relationship with HDI. Therefore, the hypotheses formulated in this study are:

H₂: Government spending has a positive effect on the Human Development Index (HDI).

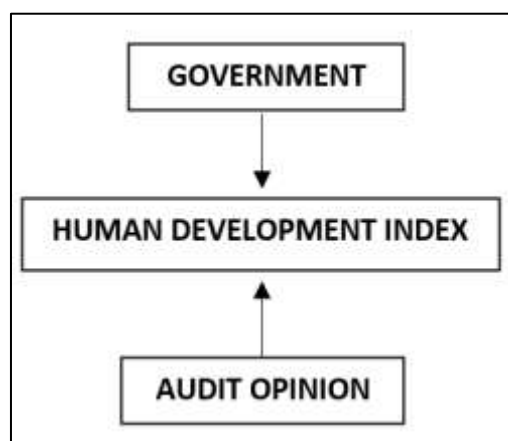


Figure.1 Conceptual Framework

Figure 1 (conceptual framework) explains that the Human Development Index (HDI) is influenced by two main factors, namely government spending and audit opinions.

Government spending reflects the commitment of local governments in providing public services through budget allocation, especially in the education, health, and social economy sectors which directly contribute to improving the quality of life of the community. The larger and more effective government spending, the more it is hoped that HDI achievement will increase. Meanwhile, the audit opinion describes the level of accountability and quality of regional financial management. Better audit opinions demonstrate transparent and regulatory budget management, thus supporting the effectiveness of public spending and ultimately positively impacting human development. Thus, government spending and audit opinions are assumed to have a direct and positive influence on HDI. This conceptual framework is the basis for empirical testing of the two hypotheses using secondary data from local governments.

3. Methods

This study uses a quantitative approach with the aim of empirically testing the influence of audit opinion and government spending on the Human Development Index (HDI). The quantitative approach was chosen because this study focuses on measuring the relationship between variables expressed in the form of numbers and analyzed using inferential statistical techniques (Mohanjan, 2020). This method allows researchers to draw objective conclusions based on secondary data that can be statistically tested.

The data used in this study is secondary data obtained from official government agencies until 2023. HDI data is obtained from the Central Statistics

Agency (BPS), government spending data is obtained from the Regional Revenue and Expenditure Budget (APBD) realization report, while audit opinion data is obtained from the Audit Report (LHP) of the Financial Audit Agency (BPK). The research object covers five provinces in the Sulawesi region, namely North Sulawesi, South Sulawesi, Southeast Sulawesi, Central Sulawesi, and West Sulawesi, with an analysis unit in the form of annual data of the provincial government.

The dependent variable in this study is the Human Development Index (HDI) which is measured using the annual HDI value of each province. Independent variables consist of government spending and audit opinions. Government expenditure is measured using the total regional expenditure realized in the APBD, while audit opinion is measured by the scoring approach, which is the provision of numerical values to the types of BPK audit opinions, such as Reasonable Without Exception, Reasonable with Exceptions, Unreasonable, and Not Giving Opinions. This scoring approach aims to convert qualitative audit opinion data into quantitative data that can be analyzed statistically.

The data analysis technique was carried out with the help of the Statistical Package for the Social Sciences (SPSS) software. The analysis stage begins with descriptive statistical analysis to provide an overview of the data characteristics of each variable, such as minimum, maximum, average, and standard deviation values. Next, classical assumption testing was carried out which included normality tests, multicollinearity tests, and heteroscedasticity tests to ensure that the data met the requirements for using linear regression analysis.

Hypothesis testing was carried out using multiple linear regression analysis, with HDI as a dependent variable and government spending and audit opinion as independent variables. This regression model is used to determine the direction and magnitude of the influence of each independent variable on HDI. The statistical tests used include the t-test to test the partial influence of each independent variable on the dependent variable and the F-test to test the influence of independent variables simultaneously. The significance level used in this study was 5 percent ($\alpha = 0.05$).

In addition, the determination coefficient is used to find out the extent to which variations in HDI can be explained by government spending and audit opinions in the research model. The results of the regression analysis are interpreted to determine whether the research hypothesis is acceptable or rejected. By using quantitative methods and statistical analysis through SPSS, this study is expected to be able to provide strong empirical evidence on the influence of government spending and audit opinions on the Human Development Index.

4. Results

The following table presents the results of descriptive statistical analysis which aims to provide an initial overview of the characteristics of the research data. This analysis includes minimum, maximum, average, and standard deviation values, so that it can show the tendency and spread of the data being studied.

Table 1. Descriptive Statistical Analysis Test

Descriptive Statistics					
	N	Minimum	Maximum	Red	Hours of deviation
IPM	5	70.46	75.68	73.4360	2.14464
BILLIONS	5	1.91	26.00	11.0540	9.29796
OPINIAUDIT	5	4	4	4.00	.000
Valid N (listwise)	5				

Based on table 1. Descriptive Statistics, it can be explained that the sum of data (N) for all variables is 5, which means that the analysis was carried out on five observations. The HDI variable has a minimum value of 70.46 and a maximum of 75.68, with an average value of 73.44. The standard HDI deviation was 2.14, which indicates that the variation in HDI data was relatively small and the HDI values between observations tended to be not much different from the average. The Trillion Expenditure variable has a minimum value of 1.91 and a maximum of 26.00, with an average value of 11.05. The standard deviation of 9.30 indicates that government spending data has a fairly high level of variation, meaning that there is a considerable difference between observations in terms of the amount of spending.

Meanwhile, the Audit Opinion variable has the same minimum and maximum value, which is 4, with an average value of 4.00 and a standard deviation of 0.00. This shows that all observations have the same Audit Opinion value, so there is no variation in the data on this variable. The data analyzed was complete (valid N

listwise = 5) and showed that the largest variation was found in the Trillion Expenditure variable, while the Audit Opinion variable was constant.

The normality test is carried out to find out whether the research data is distributed normally or not. This test is important as the basis for the selection of the next statistical analysis method, especially in determining the use of parametric or nonparametric tests. The results of the normality test are presented in the following table.

Table 2. Normality Testing

Tests of Normality						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
IPM	.192	5	.200*	.949	5	.732
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Based on table 2. Normality Test, testing is carried out on HDI variables with a total of 5 observations. The results of the Kolmogorov–Smirnov test showed a significance value of 0.200. This value is greater than the significance level of 0.05, so it can be concluded that the HDI data is normally distributed according to the Kolmogorov–Smirnov test. Furthermore, the results of the Shapiro–Wilk test showed a significance value of 0.732, which is also greater than 0.05. Thus, based on the Shapiro–Wilk test, the HDI data also meet the assumption of normality. Overall,

the two normality tests showed that the HDI variable data was normally distributed, thus meeting one of the prerequisites for the next parametric statistical analysis.

The multicollinearity test was performed to determine whether or not there is a high linear relationship between independent variables in the regression model. This test aims to ensure that each independent variable provides different information and does not strongly correlate with each other. The results of the multicollinearity test are presented in the following table.

Table 3. Multicollinearity Test Analysis

Coefficients^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	73.140	1.830		39.974	.000		
	BILLIONS	.027	.132	.116	.202	.853	1.000	1.000
a. Dependent Variable: IPM								

Based on table 3. Regression Coefficient, it can be explained that regression analysis is carried out to see the effect of Trillion Expenditure on HDI as a

dependent variable. The constant value of 73.140 with a significance level of 0.000 indicates that if the Trillion Expenditure variable is zero, then the HDI value is estimated at 73.140. This constant is statistically significant.

The regression coefficient for the Trillion Expenditure variable is 0.027, which means that every increase in Trillion Expenditure by one unit will increase the HDI by 0.027 units, assuming the other variables are considered constant. However, the significance value of 0.853 is greater than 0.05, so the influence of Trillion Expenditure on HDI is not statistically significant. This is also reinforced by the calculated t-value of 0.202, which indicates that the influence is very weak. The standardized beta coefficient value of 0.116 indicates that the contribution of Trillion Expenditure to the change in HDI is relatively low.

In addition, a Tolerance value of 1,000 and a VIF of 1,000 indicate that there is no problem of multicollinearity in the regression model. The results of this analysis show that Trillion Expenditure does not have a significant effect on HDI, although the direction of its influence is positive.

Heteroscedasticity tests were performed to determine whether or not there was a residual variance disparity in all observations in the regression model. This test aims to ensure that the regression model meets the assumption of homogeneity, so that the results obtained are unbiased and efficient. The results of the heteroscedasticity test are presented in the following table.

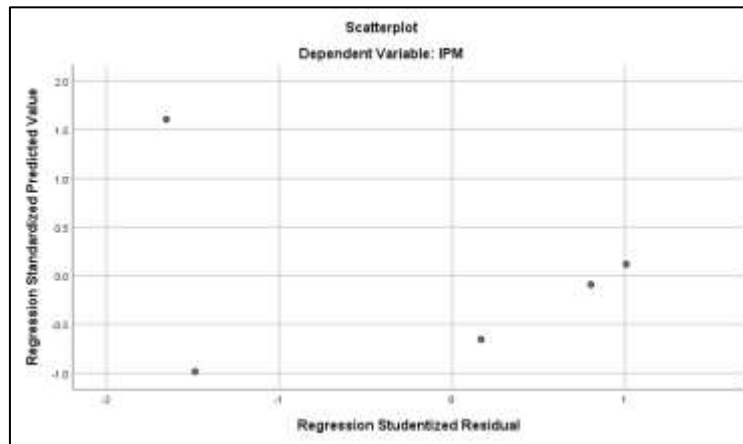


Figure 1. SPSS output results heteroscedasticity test

Based on Figure 1. scatterplot between Regression Studentized Residual and Regression Standardized Predicted Value with HDI dependent variables, tests can be carried out on heteroscedasticity assumptions in regression models. From the graph, it can be seen that the data points are spread randomly, either above or below the zero line, and do not form a specific pattern such as wave, constriction, or widening patterns. The spread of the dots is also relatively evenly distributed along the horizontal axis.

This shows that heteroscedasticity does not occur in the regression model used. In other words, the residual variance is constant at each HDI predicted value. The results of this scatterplot indicate that the homoscedasticity assumption has been met, making the regression model feasible to use for further analysis.

Multiple linear regression analysis is used to determine the influence of two or more independent variables on a single dependent variable. This analysis aims to test the cause-and-effect relationship and measure the magnitude of the influence of

each independent variable simultaneously or partially. The results of multiple linear regression analysis are presented in the following table.

Table 4. Output SPSS Model Summary

Model Summary^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.116a	.013	-.315	2.45972	.401
a. Predictors: (Constant), BELANJATRILIUN					
b. Dependent Variable: IPM					

Table 5. Output SPSS Anova

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.247	1	.247	.041	.853b
	Residual	18.151	3	6.050		
	Total	18.398	4			
a. Dependent Variable: IPM						
b. Predictors: (Constant), BELANJATRILIUN						

Table.6 Coefficients

Coefficients^a								
Model		Unstandardize d Coefficients		Standardize d Coefficients	t	Say.	Collinearity Statistics	
		B	Std. Error	Beta			Toleranc e	LIV E
1	(Constant)	73.140	1.830		39.97 4	.00 0		
	BILLION S	.027	.132	.116	.202	.85 3	1.000	1.000
a. Dependent Variable: IPM								

Based on the table 4, 5 and 6 show results of simple linear regression analysis which includes Model Summary, ANOVA, and Regression Coefficient, it can be interpreted as follows. In the Summary Model, the correlation coefficient (R) value of 0.116 shows that the relationship between Trillion Expenditure and HDI is classified as very weak. An R-Square value of 0.013 means that the Trillion Expenditure variable is only able to explain 1.3% of the variation in HDI, while the remaining 98.7% is influenced by factors other than the model. An Adjusted R Square value of –0.315 indicates that the regression model is not good at explaining dependent variables, mainly due to the very small sample size. Meanwhile, the Standard Error of the Estimate of 2.45972 indicates the level of HDI prediction error in the model. The Durbin–Watson value of 0.401 indicates a positive autocorrelation tendency, but this result needs to be interpreted with caution given the limited amount of data. In the ANOVA test, the F value was calculated as 0.041

with a significance level of 0.853, which is greater than 0.05. This shows that simultaneously Trillion Expenditure does not have a significant effect on HDI, so the regression model used is not statistically significant.

In the Regression Coefficient section, a constant value of 73.140 with a significance of 0.000 is obtained, which means that when the Trillion Expenditure is zero, the HDI is estimated to be 73.140. The Trillion Expenditure regression coefficient of 0.027 shows that every increase of one Trillion Expenditure unit will increase HDI by 0.027 units. However, a significance value of 0.853 (> 0.05) indicates that the effect is not statistically significant. The standardized beta value of 0.116 also confirms that the contribution of Expenditure Trillion to HDI is very small. The results of the analysis show that Trillion Expenditure does not have a significant influence on HDI. The regression model used has very low explanatory ability, so that HDI is more influenced by other variables outside of Trillion Expenditure.

5. Discussion

This chapter discusses and interprets the research findings regarding the influence of government spending and audit opinion on the Human Development Index (HDI). The results indicate that both variables have a positive effect on HDI, both partially and simultaneously. These findings suggest that improvements in human development are not determined solely by the magnitude of public expenditure, but also by the quality of financial governance and accountability implemented by local governments.

The positive relationship between government spending and HDI aligns with public economic theory, which views government expenditure as a key instrument for providing public goods and services (Ghifara et al., 2022). Allocations to education, health, and social infrastructure play a direct role in enhancing community welfare and quality of life. This study supports the findings of Masduki et al. (2022), who show that regional spending contributes to HDI improvement, although its effectiveness varies across regions. In the context of Sulawesi provinces, differences in fiscal capacity and development priorities lead to variations in spending patterns, which ultimately influence regional HDI outcomes.

The findings are also consistent with Sayyidina et al. (2023), who demonstrate that education and health expenditures significantly affect human development in eastern Indonesia. These results confirm that government spending has a strategic role in reducing regional development disparities. However, this study further emphasizes that increased spending alone is insufficient to guarantee optimal HDI improvement without effective and accountable financial management.

Moreover, the positive influence of audit opinion on HDI contributes to the limited empirical literature linking financial accountability with social development outcomes. A favorable audit opinion reflects transparent financial governance and compliance with statutory regulations. This finding supports Zami (2020), who argues that audit opinions are closely associated with the quality of local government financial management. While earlier studies largely focused on reporting quality and disclosure, this study demonstrates that audit opinions may also have broader implications for societal welfare as reflected in HDI.

This study also complements the findings of Indramawan et al. (2021), who reported inconsistent effects of audit opinions on HDI. The differences may stem from variations in research design, regional scope, and observation periods. By utilizing cross-provincial data from Sulawesi up to 2023, this study captures more recent and contextual dynamics of regional financial governance, suggesting that audit opinions can serve as indicators of governance quality that enhance the effectiveness of human development policies.

Simultaneously, the combined influence of government spending and audit opinion on HDI indicates that human development results from the interaction between fiscal capacity and governance quality. This finding is consistent with Marina and Satrianto (2023), who emphasize the importance of government expenditure in promoting inclusive growth, while this study expands the analysis by incorporating audit opinions as a measure of accountability. Overall, the results highlight important policy implications, emphasizing that improving HDI requires not only increased budgets but also strengthened internal controls, transparency, and financial accountability, particularly at the provincial level in the Sulawesi region.

6. Conclusion

This study aims to analyze the influence of government spending and audit opinions on the Human Development Index (HDI) in provinces in the Sulawesi region, namely North Sulawesi, South Sulawesi, Southeast Sulawesi, Central Sulawesi, and West Sulawesi, using secondary data until 2023 and a quantitative approach. Based on the results of multiple linear regression analysis using SPSS, it

was found that government spending and audit opinions have a positive influence on HDI, both partially and simultaneously. Government spending has been proven to play a role in increasing HDI through budget allocation to public sectors directly related to human development, such as education, health, and social infrastructure. Meanwhile, a better audit opinion reflects the quality of accountable and transparent regional financial management, thereby encouraging the effective use of the public budget and positively impacting the improvement of people's welfare. The results of this study show that the increase in HDI is not only determined by the amount of government spending, but also by the quality of regional financial governance. Thus, efforts to improve human development require synergy between appropriate fiscal policies and strengthening the accountability of local government financial management.

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