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Regional Financial Independence, Local Revenue Effectiveness, and Expenditure Ratios Influencing Human Development Index in Seluma Regency.

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ABSTRACT

Human Development Index (HDI) is a key indicator of regional development performance because it reflects achievements in health, education, and living standards. Despite continuous fiscal decentralization reforms, Seluma Regency has consistently recorded the lowest HDI in Bengkulu Province, raising concerns regarding the effectiveness of regional fiscal management. This study examines the effects of the Regional Financial Independence Ratio, Local Own-Source Revenue (PAD) Effectiveness Ratio, and Regional Expenditure Ratio on the Human Development Index in Seluma Regency during 2013–2023. A quantitative explanatory approach was employed using secondary time-series data obtained from the Central Statistics Agency (BPS) and the Directorate General of Fiscal Balance (DJPK). Multiple linear regression analysis was conducted using EViews 12 after satisfying classical assumption tests. The findings indicate that the Regional Financial Independence Ratio has a positive but statistically insignificant effect on HDI. In contrast, the PAD Effectiveness Ratio demonstrates a significant negative effect, suggesting that improved revenue realization does not necessarily translate into better human development outcomes when expenditure allocation remains inefficient. Furthermore, the Regional Expenditure Ratio exhibits a positive but insignificant relationship with HDI. Simultaneously, all independent variables significantly influence HDI, indicating that regional fiscal performance collectively contributes to human development. These findings emphasize that strengthening fiscal capacity alone is insufficient without improving the quality and effectiveness of public expenditure allocation. The study contributes to the fiscal decentralization literature by providing empirical evidence from a relatively underexplored Indonesian regency and offers policy recommendations for enhancing human development through more strategic, accountable, and outcome-oriented regional fiscal management.

1. Introduction

National development is an effort to improve the welfare of the nation, society, and the state. Each regional government in Indonesia is expected to be capable of managing its own resources and potential. To support this, the central government has implemented regional autonomy, granting regions the authority to manage their own governance and public affairs independently. The previous centralization policy created significant disparities between the central and regional governments, resulting in uneven development and challenges in improving community welfare. Regional autonomy, implemented since 2001, aims to overcome

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various obstacles faced by local governments in optimizing the management of their resources. The primary goal of this policy is to enhance community welfare. It also intends to reduce the burden on the central government while encouraging local capacities to explore and utilize their resources, ultimately fostering regional independence and contributing to human development. This development is reflected in the Human Development Index (HDI) (Marwati, 2016:2).

Human development considers individuals as the real wealth of a nation. The HDI, introduced by the United Nations Development Programme (UNDP) in 1996, serves as an index to measure the overall welfare of a society. It is based on three fundamental dimensions: a long and healthy life, knowledge, and a decent standard of living. As such, human development becomes the central objective of development initiatives, particularly at the regional level.

According to the UNDP, human development refers to expanding people's choices and capabilities. It is also a measure of the success of these efforts (BPS, 2018). HDI is a crucial indicator, widely used by governments as a reference for formulating public policies. One such application is in determining regional balance funds through the General Allocation Fund (DAU), where HDI serves as a significant factor in allocation. Additionally, HDI is used to assess the effectiveness of human development programs initiated by both central and local governments.

However, human development is a long-term process and cannot be measured in a short period. Unlike economic development, the outcomes of human development are not immediately visible. Compared to other Southeast Asian countries, Indonesia ranks fifth in terms of HDI, trailing behind Singapore, Brunei Darussalam, Malaysia, and Thailand (Ahdiat, 2022:22). While Indonesia still lags behind these countries overall, it does have an advantage in average years of schooling when compared to Thailand.

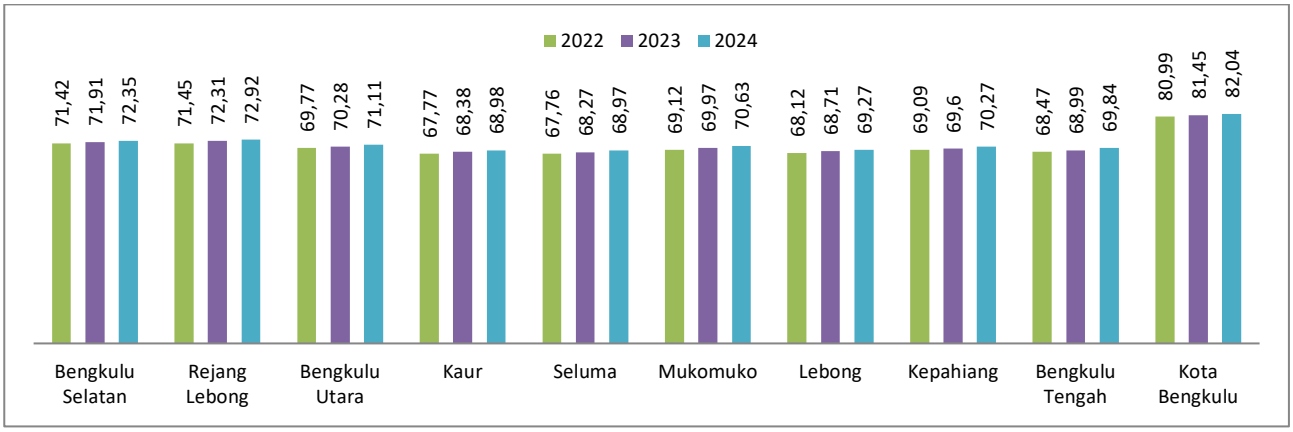
The development of HDI in Indonesia has shown positive trends at national, provincial, and district/city levels, as published annually by BPS. In 2015, BPS revised its HDI calculation methodology. The old method, which used the literacy rate, was replaced with expected years of schooling. GDP per capita was also replaced with Gross National Product (GNP) per capita. Moreover, the aggregation method was changed from the arithmetic mean to the geometric mean. The inclusion of average years of schooling and expected years of schooling provides a more relevant and accurate picture of the education component of human development.

Comprehensive national development is impossible without regional involvement, particularly in human development, to reduce the development gap between the center and the regions. HDI is a critical indicator for evaluating the success of development at both national and international levels.

In general, HDI in Sumatra shows an increasing trend each year, though with variations across provinces. For example, in 2024, the Riau Islands Province recorded the highest HDI in Sumatra at 79.89, followed by West Sumatra (76.43), North Sumatra (75.76), and Bengkulu (73.39). Lampung Province, meanwhile, recorded the lowest HDI in Sumatra at 71.81.

Bengkulu Province, located in the southwestern part of Sumatra, reported an HDI of 73.39 in 2024, up from 72.80 the previous year. Despite this positive trend, Bengkulu remains behind several other provinces in the high HDI category. Within Bengkulu, disparities also exist between its districts and cities. Of the ten districts/cities, Seluma Regency has the lowest HDI. This condition forms the basis for conducting this study, which aims to investigate the specific factors influencing HDI in Seluma Regency.

Figure I. 1Human Development Index By District/City In Bengkulu Province



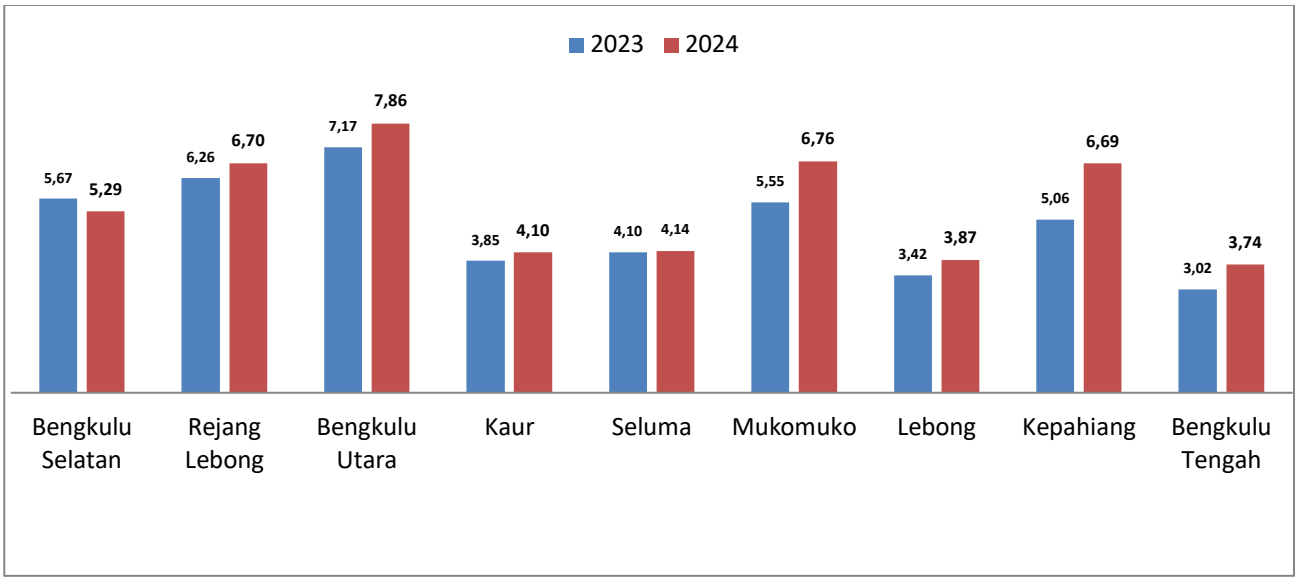
Source : BPS, 2025 (processed data)

According to the United Nations Development Programme (UNDP), the Human Development Index (HDI) is categorized into four levels: very high (HDI > 80), high (HDI between 70–79), medium (HDI between 60–69), and low (HDI < 60). Based on Figure I.1, the HDI of Seluma Regency over the past five years has consistently remained within the medium category. Although there has been a positive trend in HDI improvement each year, Seluma Regency continues to have the lowest HDI in Bengkulu Province, recording a score of 68.97 in 2024. In contrast, the highest HDI in the province is held by Rejang Lebong Regency, which reached a value of 72.92 in the same year. This data indicates that only three regencies in Bengkulu Province South Bengkulu, Rejang Lebong, and North Bengkulu have achieved the high HDI category, while the remaining seven regencies, including Seluma, remain in the medium category.

The improvement of HDI cannot be separated from the financial capacity of a region. Every regional development program requires adequate funding to support its implementation and ensure the achievement of development goals (Marwati, 2016:4). In the context of fiscal decentralization, local governments are expected to be more strategic in allocating funds from the regional budget (APBD), not only in priority sectors but also in supporting sectors that contribute to improving the welfare of the community. One of the key indicators used to assess regional financial management is the regional financial independence ratio. This ratio reflects the ability of local governments to fund their governance, development, and public services independently, and it is calculated by comparing the Local Original Revenue (Pendapatan Asli Daerah or PAD) to the total regional income (Wurangian & Sannie, 2024:2).

A higher financial independence ratio suggests that a region relies less on external funding sources, particularly from the central and provincial governments. Conversely, a lower ratio indicates a higher level of dependency, which may hinder the region's ability to implement programs related to human development. Therefore, financial independence is a crucial factor in determining a region's capability to manage its affairs autonomously and to improve its Human Development Index. Strengthening regional fiscal capacity is essential for supporting sustainable human development and achieving equitable growth across regions.

Figure I.2 Regional Financial Independence Ratios of Districts and Cities in Bengkulu Province for 2023 and 2024



Source : BPS, 2025 (processed data)

According to Yuliawati (2020), the financial independence ratio is measured by comparing Local Own-Source Revenue (Pendapatan Asli Daerah/PAD) with balancing funds and regional loans. This ratio reflects the extent to which a region is financially independent in funding its own governmental activities. The higher the financial independence of a region, the greater the local government's flexibility in allocating PAD to develop the area by providing and improving public facilities across various sectors, particularly through capital expenditure, which in turn enhances the quality of life of its citizens. Based on Figure I.2, it can be observed that although Seluma Regency is not the region with the lowest financial independence ratio in Bengkulu Province, it remains the regency with the lowest Human Development Index (HDI) value. This discrepancy warrants further investigation to understand how the regional financial independence ratio influences HDI development in Seluma Regency.

In addition to the financial independence ratio, another financial factor that contributes to HDI improvement is the effectiveness of Local Own-Source Revenue (PAD). The effectiveness of PAD serves as a metric to assess how well a local government realizes its PAD targets relative to its actual potential. A higher effectiveness ratio indicates better performance in financial management by the regional government (Maulia, 2022:17). PAD plays a vital role as one of the main funding sources for financing regional expenditures. It is derived from regionally sourced income such as local taxes, retributions, returns from region-owned enterprises, and other legitimate sources of local income. With a higher PAD as an independent funding source, it is expected that regions can allocate more resources to improve public services, including infrastructure and healthcare both of which are key components in human development. Consequently, a strong PAD performance can contribute to raising the HDI in the region (Tandiboyong & Prasasyaningsih, 2024:6).

One of the primary functions of government is to organize development and public service activities as part of its general responsibility to achieve societal welfare (Suprianto, 2014:2). Regional governments must finance public services such as education, healthcare, and other essential services using regional revenue. In the context of regional autonomy, regional public expenditure is largely dependent on regional revenue, which includes PAD, balancing funds, and other legal

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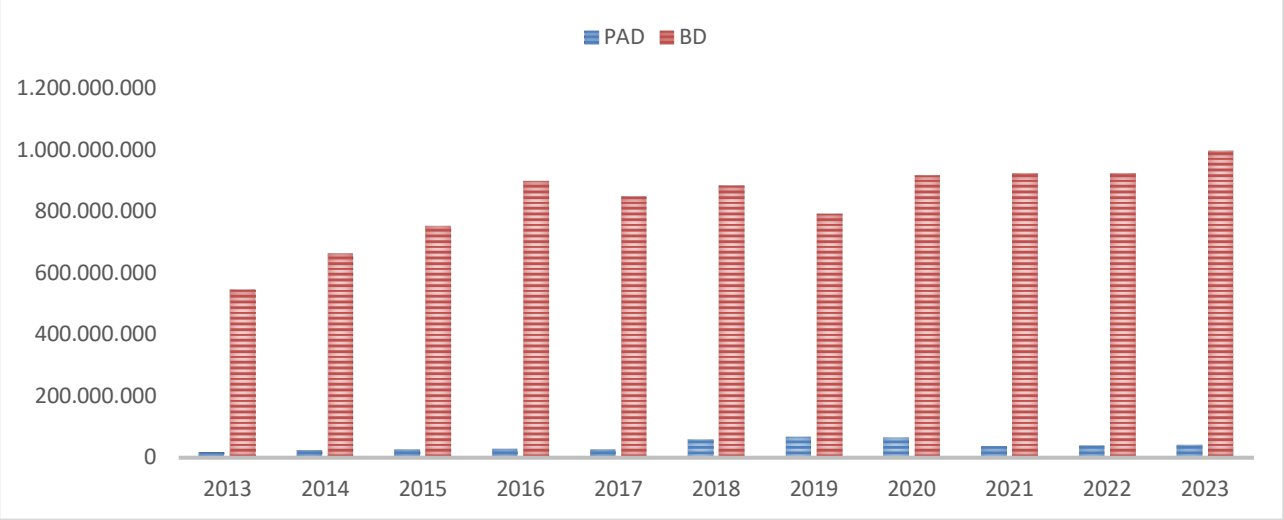
sources of income. Effective and autonomous regional financial management, therefore, plays a significant role in determining the success of human development efforts.

Figure I.3 Regional Revenue and Expenditure of Seluma Regency, 2018–2023



Source : BPS Bengkulu Province (processed data)

According to the Directorate General of Fiscal Balance (Direktorat Jenderal Perimbangan Keuangan/DJPK), regional expenditure refers to all obligations of the regional government recognized as a reduction in net assets during a specific fiscal period. It encompasses all spending incurred by local governments to implement various programs and activities aimed at improving public welfare and supporting regional development. Based on Figure I.3, it can be observed that the majority of Seluma Regency's regional expenditures are not sourced from Local Own-Source Revenue (PAD). A large portion of development spending in Seluma is financed through central government assistance and other legitimate external revenues. This situation indicates inefficiencies in the financial management of the regency and generally reflects the low level of financial independence in funding its own expenditures.

The primary reason for selecting Seluma Regency as the object of this study is due to its position as the region with the lowest Human Development Index (HDI) in Bengkulu Province. This condition reflects that the quality of human development in Seluma is significantly lagging compared to other regencies. Furthermore, although Seluma does not have the lowest regional financial independence ratio in the province, it still records the lowest HDI. This discrepancy raises critical questions and provides the basis for examining how regional financial independence, the effectiveness of Local Own-Source Revenue (PAD), and regional expenditure influence the Human Development Index in Seluma Regency.

By analyzing these relationships, the findings of this study are expected to provide valuable recommendations for the local government in formulating more effective policies to improve HDI and enhance the welfare of the local population. Based on the background described above, the researcher is interested in conducting a study entitled: "The Influence of Regional Financial Independence Ratio, Local Revenue Effectiveness, and Regional Expenditure on the Human Development Index in Seluma Regency, 2013–2023."

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2. Literature Review

2.1 Human Development Index

The Human Development Index (HDI) represents one of the most comprehensive indicators for evaluating development outcomes because it integrates health, education, and living standards into a single composite index. Unlike traditional economic indicators that primarily focus on income growth, HDI emphasizes human capability development and social welfare. According to the United Nations Development Programme (UNDP), human development aims to expand people's opportunities to live healthy, educated, and prosperous lives. Consequently, HDI has become an important benchmark for assessing the effectiveness of public policies implemented by national and regional governments.

Recent studies indicate that improvements in HDI are closely associated with the quality of fiscal governance rather than merely the amount of government expenditure. Regions with better public financial management generally demonstrate superior performance in education, healthcare, and poverty reduction. Therefore, fiscal decentralization should not only increase local financial capacity but also ensure efficient allocation of public resources toward human development outcomes (Digdowiseiso & Damayanti, 2021; Ramadhan & Setiawati, 2022; Yahya, 2024).

2.2 Fiscal Decentralization and Agency Theory

Fiscal decentralization provides local governments with greater authority to manage financial resources according to regional priorities. The theoretical foundation of fiscal decentralization is supported by Agency Theory, where local governments act as agents responsible for utilizing public resources efficiently to maximize community welfare as the principal. Effective fiscal governance requires transparency, accountability, and performance-oriented budgeting.

Recent literature suggests that successful decentralization depends not only on fiscal autonomy but also on institutional quality, governance effectiveness, and accountability mechanisms. Regions possessing stronger governance systems tend to transform fiscal resources into better public services and ultimately higher human development outcomes (Awani & Hariani, 2021; Sari et al., 2023; Wurangian & Sannie, 2024).

2.3 Regional Financial Independence

Regional financial independence reflects the ability of local governments to finance development activities using internally generated revenue without excessive dependence on transfers from the central government. Higher fiscal independence indicates stronger local fiscal capacity and greater flexibility in determining development priorities.

Recent empirical studies provide mixed findings regarding the influence of fiscal independence on HDI. Digdowiseiso and Damayanti (2021) reported that financial independence does not always significantly improve human development because local governments often prioritize administrative expenditure rather than productive investment. Conversely, Ramadhan and Setiawati (2022) demonstrated that financially independent regions generally possess greater opportunities to improve education and health services through more responsive budgeting. Similarly, Manggara et al. (2024) emphasized that excessive dependence on central government transfers reduces regional flexibility in implementing strategic development programs.

These findings imply that regional financial independence alone is insufficient unless accompanied by effective expenditure management and sound fiscal governance.

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2.4 Local Own-Source Revenue (PAD) Effectiveness

The effectiveness of Local Own-Source Revenue (PAD) measures the ability of local governments to achieve predetermined revenue targets. A higher effectiveness ratio reflects stronger fiscal management capacity in mobilizing local revenue sources. However, revenue collection effectiveness does not necessarily translate into better development outcomes if the additional revenue is not allocated toward productive sectors.

Recent evidence reveals inconsistent findings regarding PAD effectiveness. Yahya (2024) found that PAD effectiveness significantly influences regional welfare; however, the direction of the relationship depends on expenditure allocation efficiency. Tandiboyong and Prasasyaningsih (2024) argued that local revenue contributes positively to human development when invested in education, healthcare, and public infrastructure. In contrast, Munfarida (2021) suggested that effective revenue realization without efficient expenditure planning may produce limited benefits for HDI improvement. These conflicting findings indicate that PAD effectiveness should be evaluated alongside expenditure quality rather than revenue realization alone.

2.5 Regional Expenditure

Regional expenditure constitutes the primary instrument through which governments provide public services and promote socioeconomic development. Budget allocation toward education, healthcare, infrastructure, and social protection directly influences the three dimensions of HDI.

Recent literature consistently emphasizes expenditure quality rather than expenditure quantity. Sutono (2022) demonstrated that higher government spending does not automatically improve HDI because a considerable proportion of regional budgets remains concentrated on operational expenditure. Likewise, Alya and Vendra (2024) argued that inefficient budget allocation weakens the effectiveness of fiscal decentralization in promoting regional development. Furthermore, recent evidence indicates that capital expenditure directed toward public infrastructure and human capital investment produces significantly stronger impacts on HDI than routine administrative spending (Sari et al., 2022).

2.6 Empirical Studies

Several recent empirical studies have investigated fiscal determinants of HDI. Digdowiseiso and Damayanti (2021) reported that fiscal independence exhibited a positive but insignificant influence on HDI due to ineffective budget allocation. Ramadhan and Setiawati (2022) similarly found that regional financial ratios collectively affected HDI, although individual variables produced varying effects.

Meanwhile, Yahya (2024) demonstrated that fiscal decentralization indicators significantly influence regional welfare, particularly when fiscal management is accompanied by effective governance. Tandiboyong and Prasasyaningsih (2024) further confirmed that PAD and intergovernmental transfers positively contribute to human development when expenditure prioritizes public services. Conversely, Manggara et al. (2024) highlighted that excessive dependence on central government transfers limits fiscal flexibility and constrains regional development.

Overall, previous studies indicate inconsistent relationships among fiscal independence, PAD effectiveness, regional expenditure, and HDI, suggesting that institutional quality and expenditure efficiency play important moderating roles.

2.7 Research Gap

Although numerous studies have examined fiscal decentralization and human

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development, several important gaps remain. First, previous research predominantly focuses on provincial or national datasets, while evidence from relatively underdeveloped regencies remains limited. Second, most studies analyze fiscal indicators separately without simultaneously incorporating regional financial independence, PAD effectiveness, and regional expenditure into a unified analytical framework. Third, empirical findings remain inconsistent regarding the influence of fiscal performance on HDI, indicating that regional institutional characteristics may alter these relationships. Finally, recent fiscal reforms and changes in regional financial governance after the COVID-19 pandemic require updated empirical evidence using more recent data.

Therefore, this study contributes to the literature by examining the simultaneous effects of regional financial independence, PAD effectiveness, and regional expenditure on the Human Development Index in Seluma Regency during 2013–2023, providing updated evidence from a relatively underexplored Indonesian region.

3. Research Method

3.1 Nature of Research

In general, research can be categorized into three main types:

1. Exploratory Research: This type of research is open-ended and typically conducted when the problem is not clearly defined. It helps in formulating problems more clearly and developing hypotheses for future studies.
2. Explanatory (Confirmatory) Research: This type of research focuses on the relationship between variables and involves hypothesis testing.
3. Descriptive Research: This aims to describe a phenomenon in detail or determine the frequency of certain social aspects. It may or may not involve statistical hypothesis testing (Singarimbun & Effendi, 2002).

Based on these classifications, the current study is explanatory research, as it aims to examine the relationship between variables and test the formulated hypotheses.

3.2 Data Types and Sources

Types of Data: Data used in this study are quantitative, meaning they are expressed in numerical form and can be analyzed statistically (Soeratno & Arsyad, 2008).

Sources of Data:

1. Primary Data: Collected directly from respondents through observations, interviews, and questionnaires.
2. Secondary Data: Obtained from existing sources, such as institutional records.

This research uses secondary data sourced from the Central Statistics Agency (BPS) and the Directorate General of Fiscal Balance (DJPK) from 2013 to 2023.

3.3 Data Collection Techniques

1. Literature Study: Involves reviewing scientific works and written documents relevant to the research topic.
2. Document Study: Involves collecting existing data from relevant institutions, such as BPS and DJPK.

3.4 Definition and Specifications of Variables

1. Human Development Index (HDI): A composite index measuring human development based on health (life expectancy), education (mean and expected years of schooling), and standard of living (per capita expenditure).
2. Regional Financial Independence Ratio: Calculated as PAD divided by total regional revenue, expressed in percentage. It measures the region's ability to finance itself.
3. PAD Effectiveness Ratio: Measures the extent to which regional governments achieve PAD revenue targets, calculated as the ratio of realized PAD to targeted PAD in the regional budget.

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4. Regional Expenditure: Represents total government spending to carry out functions and public services, measured in rupiah.

3.5 Analysis Method

This study uses time series regression analysis with the help of EViews 12 econometrics software. The model used is multiple linear regression (J. Supranto, 2011):

$$\mathbf{Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e}$$

Where:

- Y = Human Development Index (HDI)
- X_1 = Regional Financial Independence Ratio
- X_2 = PAD Effectiveness
- X_3 = Regional Expenditure
- a = Constant
- b_1, b_2, b_3 = Regression coefficients
- e = Standard error

3.4 Hypothesis Testing

1. Partial Test (t-test):
   - H_0: $b_1 = b_2 = b_3 = 0$ → No significant effect of independent variables on the dependent variable.
   - H_1: At least one coefficient ≠ 0 → Significant effect exists.

Decision Criteria:

- Reject H_0 if t-calculated > t-table at α = 0.05
- Accept H_0 if t-calculated ≤ t-table

2. Simultaneous Test (F-test):
   - H_0: $b_1 = b_2 = b_3 = 0$ → No joint effect of independent variables
   - H_1: At least one independent variable significantly affects the dependent variable

Formula: $F = [(R^2 / (k-1))] / [(1 - R^2) / (n - k)]$

Decision Criteria:

- Reject H_0 if F-calculated > F-table
- Accept H_0 if F-calculated ≤ F-table

3. Coefficient of Determination (R^2): R^2 measures how well the independent variables explain the variability of the dependent variable.
   - If R^2 → 1: independent variables explain most of the variation in the dependent variable
   - If R^2 → 0: independent variables explain little of the variation.

4. Results And Discussion

4.1 Research result

4.2.1 Analysis Statistics Descriptive

Descriptive statistics aim to provide an overview of the data so that it becomes easier to understand and more informative for the reader. The variables used in this study are as follows:

Table Iv. 1Results of Descriptive Statistics Test

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Standard Deviation
Human Development Index	11	62,100	68,270	65,465	2,087
Ratio Independence Regional Finance	11	3,150	7,300	4,558	1,506
PAD Effectiveness	11	0.610	2,080	1,118	0.430
Ratio Regional Shopping	11	0.170	0.500	0.233	0.090
Valid N (listwise)	11				

Source : Eviews 12, processed data (2025)

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Based on the descriptive statistical analysis presented in Table IV.1, the following insights can be drawn:

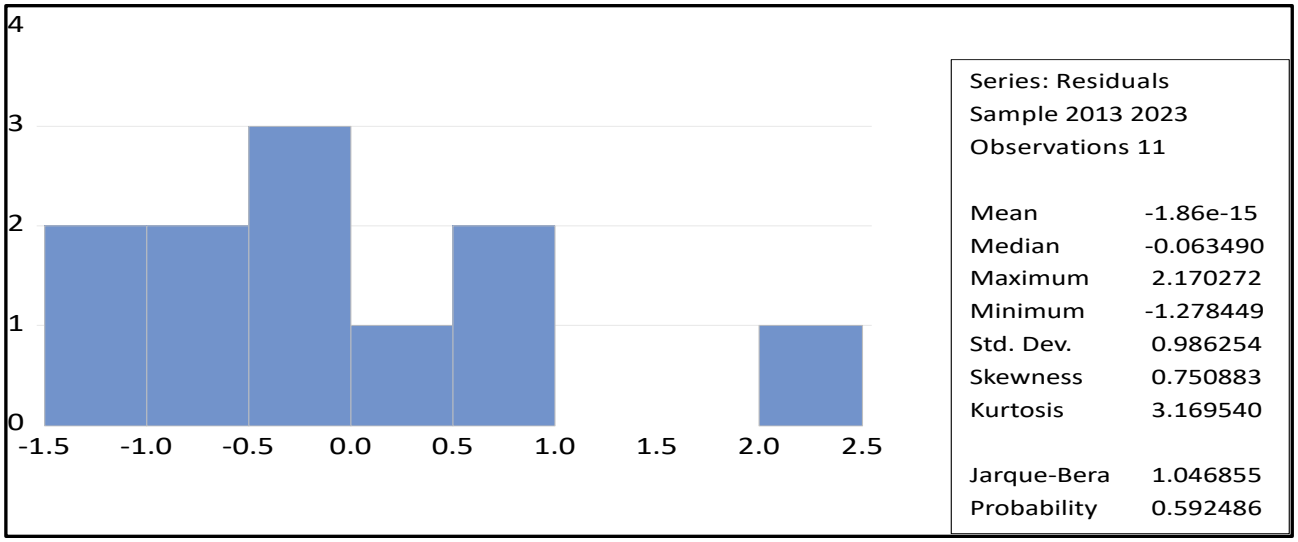
1. Human Development Index (HDI): The HDI variable exhibits a maximum value of 68.270 and a minimum value of 62.100. The mean is 65.465, with a standard deviation of 2.087, indicating a moderate spread around the average.
2. Regional Financial Independence Ratio (X1): The maximum recorded value is 7.300, and the minimum is 3.150. The average stands at 4.558 with a standard deviation of 1.506, reflecting moderate variation in regional financial independence.
3. PAD Effectiveness (X2): This variable ranges from a minimum of 0.610 to a maximum of 2.080. The mean is 1.118, and the standard deviation is 0.430, indicating some degree of fluctuation in the effectiveness of locally generated revenue.
4. Regional Expenditure Ratio (X3): This variable shows a maximum of 0.500 and a minimum of 0.170. The average value is 0.233, with a standard deviation of 0.090, suggesting low variability in regional expenditure levels.

These descriptive statistics offer foundational insights into the central tendencies and dispersion of each variable, serving as a basis for further inferential statistical analysis, including regression testing.

4.2.2 Assumption Test Classic

4.2.2.1 Normality Test

Figure Iv. 1Normality Test



Source : Eviews 12, processed data (2025)

From the results testing Jarque-Bera value of 1.046855 and the value probability of 0.592486 which means mark probability 0.59248 > value significant (0.05) then can concluded that the data is normally distributed.

4.2.2 Classical Assumption Tests

4.2.2.1 Heteroscedasticity Test

To detect the presence of heteroscedasticity, several methods can be used, one of which is the Glejser Test. This test involves regressing the absolute residuals on the independent variables. If the probability value of each independent variable is greater than 0.05, it indicates no heteroscedasticity problem (Gujarati, 2007:97).

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Table IV.3. Glejser Test Results

Variables	Prob.
C	0.2747
Regional Financial Independence	0.7658
PAD Effectiveness	0.5109
Regional Expenditure Ratio	0.8002
Source: EViews 12, processed data (2025)	

Based on the Glejser test results in Table IV.3, all independent variables have probability values greater than 0.05. Therefore, it can be concluded that there is no heteroscedasticity problem in the model.

4.2.2.2 Multicollinearity Test

The multicollinearity test is conducted to determine whether there is a correlation among independent variables in the regression model. This study uses the Variance Inflation Factor (VIF) to test multicollinearity. A VIF value less than 10 indicates that multicollinearity is not present.

Table IV.4. Multicollinearity Test Results

Variables	VIF
Regional Financial Independence	1.320
PAD Effectiveness	3.407
Regional Expenditure Ratio	3.979
Source: EViews 12, processed data (2025)	

Based on Table IV.4, all variables have VIF values below 10, indicating that the model is free from multicollinearity issues.

4.2.2.3 Autocorrelation Test

The autocorrelation test aims to determine whether there is a correlation between residuals in the current period and previous periods in a linear regression model. This test uses the Durbin-Watson (DW) statistic. The criteria are as follows:

1. DW < -2 indicates positive autocorrelation.
2. DW between -2 and 2 indicates no autocorrelation.
3. DW > 2 indicates negative autocorrelation.

Table IV.5. Autocorrelation Test Results

Model	R Square	Adjusted R Square	Std. Error of Estimate	Durbin-Watson
1	0.776	0.680	1.1787	0.858
Source: EViews 12, processed data (2025)				

As shown in Table IV.5, the Durbin-Watson value is 0.858, which falls between -2 and 2, indicating that there is no autocorrelation problem in the regression model.

4.2.3 Multiple Linear Regression Analysis

Multiple linear regression analysis is used to determine the influence of each independent variable on the dependent variable. The results are presented below:

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Table IV.6. Multiple Linear Regression Results

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	67.25988	1.990355	33.79291	0.0000
RKKD	0.469422	0.284405	1.650539	0.1428
EPAD	-4.210813	1.598842	-2.633665	0.0337
RBD	3.314179	8.007344	0.413892	0.6913
R-squared				0.776699
Adj. R-squared				0.680999
F-statistic				8.115942
Prob (F-statistic)				0.011132

Source: EViews 12, processed data (2025)

From the regression output above, the regression equation is as follows:

Y = 67.2598 + 0.4694X1 - 4.2108X2 + 3.3141X3 + e

Where:

- Y = Human Development Index (HDI)
- X1 = Regional Financial Independence Ratio
- X2 = PAD Effectiveness
- X3 = Regional Expenditure Ratio
- e = Standard Error

Interpretation:

1. The constant value of 67.2598 suggests that if all independent variables are held constant, the HDI value would be 67.2598.
2. The coefficient of X1 (RKKD) is 0.469, indicating a positive but statistically insignificant relationship with HDI.
3. The coefficient of X2 (EPAD) is -4.210, indicating a significant negative effect on HDI.
4. The coefficient of X3 (RBD) is 3.314, indicating a positive but insignificant effect on HDI.

4.2.4 Hypothesis Testing

4.2.4.1 Partial Test (t-Test)

The t-test is conducted to examine the individual effect of each independent variable on the dependent variable (HDI). The criteria are:

- If the p-value < 0.05, H0 is rejected and H1 is accepted.
- If the p-value > 0.05, H0 is accepted and H1 is rejected.

Table IV.7. t-Test Results

Variables	Coefficient	Prob.
C	67.25988	0.0000
RKKD	0.469422	0.1428
EPAD	-4.210813	0.0337
RBD	3.314179	0.6913

Source: EViews 12, processed data (2025)

Interpretation:

1. RKKD: With a p-value of 0.1428 (>0.05), RKKD does not significantly affect HDI.
2. EPAD: With a p-value of 0.0337 (<0.05), EPAD has a significant negative effect on HDI.
3. RBD: With a p-value of 0.6913 (>0.05), RBD does not significantly affect HDI.

4.2.4.2 Simultaneous Test (F-Test)

The F-test assesses whether the independent variables collectively influence the dependent variable. The decision rule is: If p-value < 0.05, H0 is rejected, and the model is considered significant.

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Table IV.8. F-Test Results

F-statistic	8.115942
Prob(F-statistic)	0.011132

Source: EViews 12, processed data (2025)

Since the p-value (0.0111) is less than 0.05, it can be concluded that the independent variables (RKKD, EPAD, RBD) jointly have a significant effect on the HDI.

4.2.4.3 Coefficient of Determination (R^2)

The coefficient of determination (R^2) measures how well the regression model explains the variation in the dependent variable.

Table IV.9. Coefficient of Determination Results

R-squared	0.7766
Adjusted R^2	0.6809

Source: EViews 12, processed data (2025)

The R-squared value of 0.7766 indicates that approximately 77% of the variation in HDI can be explained by the independent variables, while the remaining 23% is influenced by other factors not included in this study.

4.2 Discussion

4.2.1 The Influence of Regional Financial Independence Ratio on Human Development Index (HDI)

The results show that the Regional Financial Independence Ratio has a positive but not significant effect on the Human Development Index (HDI) in Seluma Regency. This implies that although increased financial independence tends to be followed by improvements in HDI, the statistical relationship is not strong enough to serve as a solid basis for conclusive statements. One possible reason is that regional expenditure allocation has not been fully prioritized toward sectors that directly enhance quality of life, such as education, healthcare, and basic services. Additionally, high dependency on central government transfers may indicate that locally-generated revenues are not yet capable of significantly improving public services and, consequently, the HDI (Manggara et al., 2024:38).

These findings align with previous studies. Ramadhan & Setiawati (2022:332) found that the financial independence ratio does not significantly influence provincial HDI in Indonesia, due to suboptimal utilization of local revenues for human development. Digdowiseiso & Damayanti (2021:192) similarly argue that increased fiscal independence is not necessarily followed by significant improvement in human development, owing to weaknesses in budget effectiveness and program planning.

4.2.2 The Influence of PAD Effectiveness on Human Development Index (HDI)

This study finds that the effectiveness of Regional Original Revenue (PAD) has a significant negative effect on HDI in Seluma Regency. This suggests that higher PAD effectiveness is actually associated with a decline in HDI achievement. These findings indicate that although PAD may be effectively collected in terms of reaching revenue targets, its allocation is not optimally directed towards human development programs such as education, health, and basic social services. It reflects a situation where most PAD is spent on administrative or routine expenditures, rather than investments that directly improve citizens' quality of life (Munfarida, 2020:67).

Theoretically, this contradicts fiscal decentralization theory (Oates, 1972), which posits that increased local fiscal capacity

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should enhance a region's ability to meet its development needs. In practice, however, these negative findings highlight that increased PAD effectiveness does not automatically lead to higher HDI unless it is accompanied by sound planning and human-oriented budget management. Hence, effective PAD collection must be supported by good governance to positively influence HDI.

These findings are consistent with Yahya (2024:81), who found a significant but negative relationship between PAD effectiveness and HDI. Yahya suggests that the negative relationship may be due to the low amount of PAD collected, which, although surpassing budget targets, is still relatively small and not effectively used to meet regional needs. Similarly, Munfarida (2020:72) concludes that efficient PAD management on the revenue side, if not matched by effective expenditure allocation, can negatively impact human development quality.

4.2.3 The Influence of Regional Expenditure Ratio on Human Development Index (HDI)

The study shows that the Regional Expenditure Ratio has a positive but statistically insignificant effect on HDI in Seluma Regency. This implies that increased regional expenditure tends to be followed by an increase in HDI, but the statistical link is weak. One possible reason is that the expenditure composition is more focused on operational or routine spending rather than development expenditures in crucial sectors such as education, healthcare, and decent living standards. High spending levels do not always guarantee quality development if not directed and targeted efficiently.

This result is in line with previous studies. Sutono (2022:161) found that regional expenditure did not significantly influence HDI in Riau Province, due to a lack of direct program planning for human development. Sari et al. (2022:134) also argue that expenditures not directed toward capital and priority sectors tend not to contribute significantly to HDI improvements. Thus, although increasing expenditure may reflect local government commitment to development, it does not necessarily lead to public welfare improvements unless supported by effective budget management.

4.2.4 The Influence of Regional Financial Independence Ratio, PAD Effectiveness, and Regional Expenditure Ratio on Human Development Index (HDI)

Simultaneous testing shows that the combined variables of Regional Financial Independence Ratio, PAD Effectiveness, and Regional Expenditure Ratio have a significant joint effect on HDI in Seluma Regency during the 2013–2023 period. This indicates that these three fiscal capacity indicators collectively play an important role in determining human development outcomes in the region. Although individually some variables are not significant, together they show a strong and meaningful relationship with improvements in citizens' quality of life.

The Regional Financial Independence Ratio reflects a region's capacity to finance governance and development activities without depending on central government transfers. A high level of independence suggests a strong fiscal capacity and greater flexibility in determining development priorities, including those related to education, health, and welfare. Thus, improvements in financial independence can contribute to higher HDI through more responsive local policies.

PAD Effectiveness, despite showing a significant negative individual effect, remains a crucial component of regional fiscal dynamics in the simultaneous model. It highlights that even if PAD is effectively collected, it must be properly managed and directed toward programs that improve public services and living standards.

The Regional Expenditure Ratio also supports HDI through public service provision. Although its partial effect is not statistically significant, it contributes meaningfully in the

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joint model as part of the region's expenditure structure supporting human development. Budget allocations, if properly targeted at priority sectors, can help accelerate HDI improvements.

Overall, these findings confirm the importance of synergy among the three fiscal components in influencing HDI. The Regional Financial Independence Ratio, PAD Effectiveness, and Regional Expenditure Ratio should be viewed as an integrated fiscal policy framework. With strategic and well-directed fiscal management, these variables can be powerful tools in enhancing community well-being and promoting sustainable human development in Seluma Regency.

5. Conclusion

5.1 Conclusion

Based on the discussion above, the conclusions drawn are:

1. The Regional Financial Independence Ratio (RKKD) does not have a significant effect on HDI in Seluma Regency during the 2013–2023 period.
2. PAD Effectiveness (EPAD) has a significant negative effect on HDI in Seluma Regency during the same period.
3. The Regional Expenditure Ratio (RBD) does not significantly influence HDI in Seluma Regency during the 2013–2023 period.
4. Simultaneously, the variables RKKD, EPAD, and RBD have a significant joint effect on HDI in Seluma Regency during the 2013–2023 period.

5.2 Suggestions

Based on the analysis and conclusions, the following suggestions are proposed:

1. For Local Government: Fiscal policy optimization is needed so that PAD is not only effective in achieving revenue targets but also directed toward human development programs such as education, health, and poverty alleviation.
2. Improving Budget Efficiency: Regional governments should increase the efficiency and quality of expenditures by prioritizing productive spending that directly improves HDI, rather than focusing on operational expenditures.
3. Future Research: Future studies are recommended to include other specific and relevant variables for human development, such as education spending, healthcare spending, or poverty levels. Additionally, expanding the research coverage or extending the research period would provide more comprehensive and comparable findings across regions and years.

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