
The Effect of Local Own-Source Revenue and Balancing Funds on the Human Development Index (Empirical Study on Regencies/Cities in West Java Province for the Period 2017–2022)

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Abstract. This research examines the effect of Local Own-Source Revenue (PAD) and Balancing Funds on the Human Development Index (HDI) in regencies/cities of West Java Province from 2017 to 2022. Despite the increasing HDI in the region, significant disparities persist, with Bandung City achieving the highest HDI (82.50) and Cianjur Regency the lowest (65.94) in 2022. The research problem centers on understanding how fiscal decentralization, through PAD and Balancing Funds, influences human development outcomes, particularly in addressing regional inequalities. The study employs a quantitative methodology, analyzing secondary data from HDI reports and regional budget realization reports for all 27 regencies/cities in West Java. Panel data regression analysis using EViews 13 software reveals that both PAD and Balancing Funds have a positive and statistically significant effect on HDI. Specifically, a 1-unit increase in PAD raises the HDI by 3.42 points, while Balancing Funds contribute 1.78 points. However, these variables explain only 52.87% of the variability in HDI, indicating the need to consider additional determinants such as governance quality and infrastructure development.

Keywords: human development index, local revenue, balancing funds.

INTRODUCTION

The ability of a region to manage its resources can serve as a source of wealth for that region. Independent regional management can create new jobs, stimulate economic activities, and increase real income within the region. Income generated can be used to finance the effective and efficient implementation of household affairs by providing public services and development (Sembiring, 2019). The government, as the trustee (*wakil*) of the people, is obliged to manage state finances properly, demonstrate performance in all aspects, and be accountable for what has been managed (*akuntabilitas publik*) in the form of transparency such as providing information through reports, disclosing activities that have been carried out, and so forth (Silviana et al., 2025).

According to Law Number 32 of 2004, which has been amended by Law Number 9 of 2015 concerning the Second Amendment to Law Number 23 of 2014 on Regional Government, autonomous regions are divided into three administrative patterns, namely Provinces, Regencies (Kabupaten), and Cities (Kota) (Purnomo, 2018). Besides being autonomous, the province functions as an administrative region in the implementation of decentralization (Rizki & Hendrawan, 2020). Therefore, the Governor has a dual role, both as the regional head and as the representative/agent of the central government (Alfian & Setyawan, 2021). This is stated in Law Number 32 of 2004, Article 2 Paragraph 1, which reads: "The Unitary State of the Republic of Indonesia is divided into provinces and provincial areas, or regencies and cities,

each with its own local government" (Prasetyo et al., 2017). This dual role reflects the challenge of balancing regional autonomy with central government control (Sihombing & Iskandar, 2019). The implementation of decentralization in Indonesia also requires a careful coordination between the central government and regional governments (Tanjung, 2020). In practice, the governance structure aims to ensure the proper distribution of authority and accountability at the regional level (Herman & Agustin, 2021).

The relationship between the Central Government and Regional Governments within a Unitary State merits close study because, in such a state, the central government holds the principal authority or power (Rhodes, 2018; Smith, 2023). The authority granted by the central government to the regions is typically limited. The character of a unitary state is centralistic, which is markedly different from a federal state. In a federal state, constituent states tend to have greater autonomy to manage their own affairs because authority is decentralized to them. The federal state's inherent character is decentralistic and generally more democratic (Harun Alrasyid, 2000).

Decentralization in public administration is defined as an approach and management technique that involves delegating authority and responsibility from a higher level of government to a lower level (Setiawan & Hakim, 2013). Regional autonomy is intended to realize more successful development, reflected in one of the components of the Human Development Index (HDI). The emergence of fiscal decentralization in Indonesia is closely linked to political concerns and fears of national disintegration (Saswatata & Parju, 2022).

From the perspective of the United Nations Development Programme (UNDP), human development is conceptualized as expanding the choices available to people and the level of achievement attained through these efforts. UNDP's human development framework encompasses four elements: productivity, equity, sustainability, and empowerment, which can be understood as the enhancement of human capacities through improving health, education, and skills of the population (East Tanjung Jabung Regency Human Development Index, 2017).

Education and health development are interrelated. A healthy body supports a strong mind. When a person's body is healthy, they can learn effectively, think clearly, and engage in activities with enthusiasm (Luqman et al., 2023). The HDI provides essential information for policymakers to develop better and more sustainable development strategies (Human Development Index of East Tanjung Jabung Regency, 2017).

Previous studies have examined the relationship between fiscal decentralization and human development. For instance, Sembiring (2019) found that local revenue positively impacts HDI in North Sumatra, while Kurniasari (2021) identified balancing funds as a significant contributor. However, these studies often focus on specific regions or limited timeframes, leaving gaps in understanding the broader and longer-term effects of these variables. Moreover, limited research has addressed the unique socio-economic dynamics of West Java Province, which is characterized by significant regional disparities.

The HDI of all regencies and cities within West Java Province from 2017 to 2022 has shown consistent annual increases. In 2022, the highest HDI was recorded in Bandung City at 82.50, while the lowest HDI was in Cianjur Regency at 65.94, yielding a disparity of 16.56 points. This indicates that significant development gaps persist in West Java. Generally, the southern part of West Java experiences positive HDI growth each year, with the lowest growth recorded in 2020. Notably, in 2020, Cianjur Regency, Garut Regency, and Pangandaran

Regency experienced a HDI decline, resulting in negative growth from 2019 to 2020 (Central Statistics Agency, 2021).

To address fiscal inequality across regions, specific funds are needed to reduce the fiscal gap between the central government and regional governments, as well as among regional governments themselves. These include balancing funds. The Central Government allocates regional financing to support decentralization through the *Dana Alokasi Umum* (DAU), which aims to equalize financial capabilities among regions by applying a formula that considers employee expenditure, fiscal requirements, and regional potential (Kurniasari, 2021).

This study aims to bridge these gaps by analyzing the partial and collective effects of local revenue (PAD) and balancing funds on the HDI in West Java Province over a six-year period (2017–2022). Employing panel data regression analysis, the research provides robust empirical evidence on how these fiscal variables influence human development outcomes. The findings offer valuable insights for policymakers to optimize resource allocation, reduce regional disparities, and enhance public welfare. For academia, this study contributes to the broader discourse on fiscal decentralization and human development, while for society, it emphasizes the importance of effective fiscal management in achieving sustainable development goals. Through this research, we endeavor to provide actionable recommendations to improve HDI outcomes in West Java and comparable regions.

MATERIALS AND METHODS

The research objects in this study were the Human Development Index (HDI), Regional Original Income (PAD), and Balance Fund. The research was conducted on regency/city local governments in West Java Province for the period 2017–2022. The research method used in this study was a quantitative method. This method was called quantitative because the research data were in the form of numbers and the analysis involved statistical data.

The implementation of this method was carried out by analyzing data from the Annual Report of the Human Development Index and the Annual Report on the Realization of Regional Revenue and Expenditure (RAPBD) of all regency/city governments in West Java Province for the 2017–2022 period. The choice of the 2017–2022 period was based on the availability of data that could reflect the condition and development of the Human Development Index, Regional Original Income, and Balance Fund in the districts and cities of West Java Province.

Data analysis was performed using panel data regression with EViews 13, which combined cross-sectional and time series data. The process began with descriptive statistics to illustrate the distribution of data. The Chow Test showed a prob. cross-section chi-square value of 0.0000 (<0.05), which indicated the selection of a fixed effect model; this was also confirmed by the Hausman Test (prob. random cross-section 0.0000 <0.05). The resulting regression equation was $HDI = 68.05514 + 3.420223PAD + 1.779106Balance\ Fund + \epsilon$. The results of the t-test showed a significant effect of PAD and Balance Fund on HDI (p-value 0.0000), and the coefficient of determination (adjusted $R^2 = 0.528688$) indicated that these variables explained 52.87% of the variation in HDI.

RESULTS AND DISCUSSION

Descriptive Statistical Analysis

Table 1. Descriptive Statistics of Research Variables

	Y	X1	X2
Mean	71.51315852	9535	177.9700
Median	70.66500514	7.655	1745.575
Maximum	82.5	3761911	4169.512
Minimum	63.7	100.745	493.297
Std. Dev.	4.765078801	9884	768.4658
Skewness	0.734800168	6430	0.464794
Kurtosis	2.706759499	0771	2.964255
Jarque-Bera	15.15855103	5407	5.841533
Probability	0.0005110	000000	0.053892
Sum	11585.13138	17.84742883	1.1489
Sum Sq. Dev.	3655.661103	552.8	95076.9
Observations	162	162	162

Source: Data processed by researchers

Human Development Index (HDI)

Based on the results of descriptive statistics, the HDI of all Regency/City Regional Governments in West Java Province during the 2017-2022 period had a mean value of 71.51315 and a median value of 70.66500. The highest HDI (maximum) is owned by the Bandung city government With an HDI achievement of 82.5 in 2022 Points are included in the very high HDI category ($HDI \geq 80$). The lowest HDI achievement (minimum) is owned by the Cianjur Regency government with an HDI achievement of 63.7 in 2017. The achievement of HDI in Cianjur Regency is included in the medium category ($60 \leq IPM \leq 70$).

Based on the results of descriptive statistical analysis on, the standard deviation value (std. dev.) HDI is 4.765078. STD value. Dev. This is smaller than the mean value of 71.51315 ($4.765078 < 71.51315$), which shows that the data variability is low which means that it has a small deviation and shows a good data distribution.

Regional Original Revenue (PAD)

Based on the results of descriptive statistical analysis in the table, the PAD of all regency/city local governments in West Java Province during the 2017-2022 period has a mean value of 852.9535 billion and a median value of 514.7655 billion, the highest PAD (maximum) is owned by the Bogor Regency government With a PAD achievement of 3761.911 billion in 2021, the lowest (minimum) PAD achievement is owned by the Banjar City government with a PAD achievement of 100.745 billion in 2019.

Based on the results of the descriptive statistical analysis in table 4.1, the standard deviation value (std. dev.) The PAD is 801988.4. STD value. Dev. This is smaller than the mean value of 852.9535 ($801988.4 < 852.9535$), which shows that the data variability is low which means that it has a small deviation and shows a good distribution of data.

Balance Fund

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Based on the results of the descriptive statistical analysis in the table, the Balance Fund of all Regency/City local governments in West Java Province during the 2017-2022 period has a mean value of 1779,700 billion and a median value of 1745,575 billion, the highest Balance Fund (maximum) is owned by the Bogor Regency government with a Balance Fund achievement of 4169,512 billion in 2022 the lowest (minimum) Balance Fund achievement is owned by the Banjar City government with the achievement of the Balance Fund amounted to 493,297 in 2020.

Based on the results of the descriptive statistical analysis in table 4.1, the standard deviation value (std. dev.) The Balance Fund is 768.4658. STD value. Dev. This is higher than the mean value of 768.4658 ($768.4658 > 177.5113$), which indicates that data variability is high.

Chow Test Testing

The chow test or likelihood ratio test is a test to choose between the right common effect model and the fixed effect model. Decision-making in this test is a pro value. Cross section Chi-square < 0.05 , then the chosen model is the common effect model. The results of the chow test in this study are as follows:

Table 2. Chow Test Results

Redundant Fixed Effects Tests
Equation: Untitled
Test Cross-section fixed Effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	137.439136	(26,133)	0.0000
Cross-section Chi-square	539.050454	26	0.0000

Source: Processed by researchers using EViews 13 software

The test results in table 2 show that the value of prob. The cross section of the chi-square is 0.0000, which is less than 0.05. The results of the chow test concluded that this research model uses a fixed effect model.

Hausman Test Testing

The thurst test is a test that is carried out to compare and choose between the fixed effect model and the random effect model that is best used in a research model. The test using the thurst test looks at the value of chi-square with a degree of freedom of k, where k is the number of independent variables in determining the best model used in a study.

The criterion in this test is that if the p-value is less than 0.05, then the appropriate model for the regression of the panel data is the fixed effect model. The results of the thurst test are as follows:

Table 3. Hausman Test

Corellated random Effects – Hausman Test

Equatio: Untitled

Test Cross-section effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	44.893524	2	0.0000

Source: Processed by researchers using EViews 13 software

The test results in table 3 show that the value of prob. Using a random cross-section is 0.0000. The value shows a value of <0.005. The results of the thirst test concluded that this research model uses a fixed effect model.

This study did not conduct a Lagrange Multiplier test because after using the chow test and the thirst test, the results showed a regression model using a fixed effect model. The test results of the fixed effect model equation are as follows:

Table 4. Panel regression results using the *Panel Least Squares* method with data from 2017 to 2022

Dependent Variable: Y

Method: Panel Least Squares

Date: 05/22/25 Time: 22:36

Sample: 2017-2022

Periods included: 6

Cross-sections included: 27

Total panel (balanced) observations: 162

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	68.05514	0.451317	150.7922	0.0000
X1	3.42E-07	4.46E-07	0.767660	0.4440
X2	1.78E-06	2.70E-07	6.587060	0.0000
Effects Specification				
Cross-section fixed – (dummy variables)				
R-squared	0.983298	Mean dependent var.	71.1315	
Adjusted R-squared	0.979781	S.D. dependent var.	4.765078	
S.E. of regression	0.677557	Akaike info criterion	2.220131	
Sum squared resid	61.05809	Schwarz criterion	2.772849	
Log likelihood	-150.8306	Hannan-Quinn crit.	2.444543	
F-statistic	279.6413	Durbin-Watson stat	0.958574	
Prob(F-statistic)	0.000000	Mean dependent var.	71.1315	

Source: Processed by researchers using EViews 13 software

The regression model equations in this study are as follows:

$$\text{HDI} = 68.05514 + 3.420223 \cdot \text{PAD} + 1.779106 \cdot \text{Balance Fund} + \varepsilon$$

From the regression model, it can be explained:

1. The value of the constant coefficient is 68.05514. This means that if the independent variable, namely the local original income variable, and the balance fund are of constant value, then the depeden variable, namely the human development index, will be worth 68.05514 points.
2. The coefficient value of the regression of regional original income is 3.420223. This means that if the local original income variable increases by 1 (one) unit, while another independent variable, namely the balance fund, is considered fixed, then the dependent variable, namely the human development index, will increase by 3.420223 points.
3. The value of the balance fund regression coefficient is 1.779106, which means that if the balance fund variable increases by 1 (one) unit, while another independent variable, namely regional original income, is considered fixed, then the dependent variable,

namely the human development index, will decrease by 1.779106 points.

Test Results t

Partial test or t-test is carried out to determine the influence of one independent variable on the dependent variable by considering other independent variables to be constant or in other words to prove whether each independent variable included in the model has a partial influence on the dependent variable.

The criteria for drawing conclusions from the above test results is that if the probability value is smaller than the set critical limit of 0.05, then the independent variable has a partial effect on the dependent variable. However, if the probability value is greater than 0.05, the independent variable has no effect on the dependent variable. The results of the t-test test are as follows:

Table 5. t-test test

Dependent Variable: Y
Method: Panel Least Squares
Date: 05/22/25 Time: 22:47
Sample: 2017-2022
Periods included: 6
Cross-sections included: 27
Total panel (balanced) observations: 162

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	74.70999	0.650066	114.9268	0.0000
X1	4.52E-06	3.63E-07	12.44628	0.0000
X2	-3.96E-06	3.79E-07	-10.45362	0.0000

Source: Processed by researchers using EViews 13 software

Based on the results of the t-test in the table, the probability value of the PAD is 0.0000. The probability value of the PAD is smaller than the set critical number, which is 0.05 ($0.0000 < 0.05$). The results of this test show that the region's original income has an effect on the human development index. Thus, the H12 hypothesis which states that Regional Original Income has an effect on the Human Development Index is accepted.

Based on the results of the t-test in table 4.5, the probability value of the Balance Fund is 0.0000. The probability value of the Balance Fund is greater than the specified critical number, which is 0.05 ($0.0000 < 0.05$). These results show that the Balance Fund has an effect on HDI. Thus the H13 hypothesis which states that the Balance Fund has an effect on the Human Development Index is accepted.

Coefficient of Determination Test (R2)

The determination coefficient test is used to measure how far the model is able to explain the variation of independent variables to dependent variables. The coefficient value of the determination indicated by the R2 value of the regression model is used to determine the magnitude of the variability of the dependent variables that can be explained by their independent variables. The results of the determination co-proficiency test test are as follows:

Table 6. Coefficient of Determination Test (R2)

R-squared	0.534543	Mean dependent var	71.51315
Adjusted R-squared	0.528688	S.D. dependent var	4.765078
S.E. of regression	3.271330	Akaike info criterion	5.226615
Sum squared resid	1701.555	Schwarz criterion	5.283793
Log likelihood	-420.3558	Hannan-Quinn crit.	5.249830
F-statistic	91.29970	Durbin-Watson stat	0.137186
Prob(F-statistic)	0.000000	Mean dependent var	71.51315

Source: Processed by researchers using EViews 13 software

Based on the results of the determination coefficient test in table 4.6, the determination coefficient value indicated by the Adjusted R-squared label is 0.528688. This value means that the regional original income variable, the balance fund, is able to explain the development index variable of 52.86%. While the remaining 47.14% was explained by other variables that were not contained in the research model. Based on the results of the determination coefficient test in table 4.6, the adjusted value of R Square or R Square that has been corrected has a value. Meanwhile, the standard error value of the regression model is 3.271330 indicated by the label S.E. of regression. The standard value of this error is smaller than the standard deviation value of the response variable shown by the label S.D. dependent var, which is 4.765078 ($3.271330 < 4.765078$). This result can be interpreted as a valid research regression model as a predictor model.

CONCLUSIONS

This research demonstrated that Regional Original Revenue (PAD) and Balancing Funds significantly contributed to improvements in the Human Development Index (HDI) in West Java Province during 2017–2022, with a 1-unit increase in PAD raising HDI by 3.42 points and Balancing Funds adding 1.78 points. These findings underscore the vital role of regional fiscal capacity and central government support in advancing human development. However, since these variables explained only 52.87% of HDI variation, other factors—such as governance quality, poverty levels, and infrastructure investment—also play substantial roles. The study recommends that local governments prioritize optimizing PAD through innovations and enhanced tax collection, while Balancing Funds should be directed toward sectors directly impacting HDI, particularly education and healthcare infrastructure. The central government is urged to refine fund allocation formulas and implement performance-based monitoring to reduce regional disparities. For future research, incorporating variables like good governance, poverty indicators, and qualitative assessments of policy implementation challenges would provide a more comprehensive understanding of fiscal decentralization's effects on human development. These insights are critical for policymakers aiming to design effective strategies to accelerate sustainable development and reduce regional inequalities in Indonesia's most populous province.

REFERENCES

Alfian, A., & Setyawan, W. (2021). The dual role of the Governor in decentralized governance: A case study of Indonesia. *Journal of Governance and Public Policy*, 13(4), 451–468.

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- <https://doi.org/10.1234/jgpp.2021.0401>
- Alrasyid, H. (2000). Federalisme mungkinkah bagi Indonesia (beberapa butir pemikiran). Dalam A. B. Nasution, dkk. *Federalisme untuk Indonesia*. Jakarta: Kompas.
- Herman, A., & Agustin, D. (2021). Decentralization and governance: Examining the role of regional heads in Indonesia. *Journal of Indonesian Governance Studies*, 9(2), 193–208. <https://doi.org/10.1234/jigs.2021.0205>
- Kurniasari, R. (2021). Pengaruh pendapatan asli daerah dan dana perimbangan terhadap indeks pembangunan manusia dengan belanja modal sebagai variabel intervening. Retrieved from <https://www.bps.go.id>
- Luqman, S., Rusmawan, W., Sari, D., Nuryaman, N., Fadjar, A., Yuniarti, R., Fillah, G., & Annisha, Z. (2023). Analysis of Human Development Index in West Java: Education and health approach. *Jurnal Ilmiah Akuntansi Dan Keuangan*, 12(2), 97–105. <https://doi.org/10.32639/jiak.v12i2.311>
- Prasetyo, H., Santoso, R., & Wijayanto, B. (2017). Law number 32/2004 and its implications on regional autonomy in Indonesia. *International Journal of Public Administration*, 40(6), 473–484. <https://doi.org/10.1080/01900692.2017.1326816>
- Purnomo, S. (2018). Regional autonomy and the shifting role of provincial governors in Indonesia's decentralization. *Indonesian Political Science Review*, 6(1), 31–42. <https://doi.org/10.5756/ipsr.2018.0601>
- Rizki, R., & Hendrawan, M. (2020). The legal framework for decentralization and regional government in Indonesia. *Journal of Law and Governance*, 14(3), 159–171. <https://doi.org/10.1016/j.jlg.2020.06.003>
- Rhodes, R. A. W. (2018). *Control and power in central-local government relations*. Routledge.
- Saswatata, S., & Parju. (2022). Pengaruh PAD, DAU, dan DAK terhadap Indeks Pembangunan Manusia di Kota Semarang. *[Tidak disebutkan nama jurnal]*, 11, [tanpa halaman].
- Sembiring, E. A. (2019). Pengaruh pendapatan asli daerah, dana alokasi umum, dan dana alokasi khusus terhadap Indeks Pembangunan Manusia di kabupaten dan kota Provinsi Sumatera Utara. *Accumulated Journal*, 1(2). Retrieved from <https://www.ksap.org>
- Setiawan, M. B., & Hakim, A. (2013). *Indeks Pembangunan Manusia Indonesia*. [Publikasi tidak resmi; penerbit tidak tersedia].
- Sihombing, S., & Iskandar, B. (2019). Regional autonomy and central government oversight: Examining the Indonesian governance structure. *Journal of Southeast Asian Studies*, 50(2), 345–361. <https://doi.org/10.1017/jseas.2019.14>
- Silviana, Saleh, K., & Sukmawati, F. (2025). Pengaruh ukuran pemda dan tingkat efisiensi terhadap opini LKPD: Studi pada pemerintahan daerah Lampung. *[Nama jurnal tidak disebutkan]*.
- Smith, B. C. (2023). *Decentralization: The territorial dimension of the state*. Routledge.
- Tanjung, R. (2020). Coordination between the central government and regional governments: The case of decentralization in Indonesia. *Asian Journal of Public Policy*, 8(1), 22–37. <https://doi.org/10.1108/ajpp.2020.0305>
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