

Poverty and Gini Ratio on Human Development Index in West Sumatera

Rahmat Hidayat^{1*}, Engla Desnim Silvia², Fatma Ariani³

¹Universitas Tamansiswa, Padang, Indonesia

^{2,3}Universitas Putra Indonesia YPTK Padang, Indonesia

rahmathidayat1611@gmail.com

***Corresponding Author**

ABSTRACT

This study aims to test and prove the effect of poverty and the Gini ratio on the human development index in the Regency/City of West Sumatera, the population in this study is the Central Statistics Agency (BPS) of West Sumatera Province from 2016 to 2020, while the sample in this study was 95 samples of the human development index, poverty and the Gini ratio in West Sumatera. The type of data used is panel data. Data was obtained from the official website of the Central Statistics Agency of West Sumatera Province (BPS) Data was processed using SPSS 22. The results show that the Gini ratio has a positive and significant influence on the Human Development Index in West Sumatera, suggesting that income distribution dynamics play an important role in shaping human development outcomes. In contrast, poverty was found to have no statistically significant effect on HDI, indicating that other factors may moderate or buffer the impact of poverty at the regional level. The novelty of this research lies in its specific regional focus on West Sumatera and its use of panel data across multiple years and districts to uncover nuanced relationships that may not be visible in broader national-level analyses. Additionally, by comparing poverty and income inequality side by side, this study offers a fresh perspective on which socio-economic indicators most strongly influence human development in decentralized governance settings like Indonesia.

Keywords: Human development index, Gini ratio, Poverty

INTRODUCTION

The economic development of a region is influenced by the human development process. This achievement is inextricably linked to the quality of the region's human population. One important indicator that measures the quality of economic development, namely the degree of human development, is the Human Development Index (HDI). Development success is measured by several parameters, the most popular of which is the Human Development Index (HDI). This measurement tool was launched by Mahhub ul Haq in his book, *Reflections & Development* (1995), and is globally agreed upon through the United Nations Development Programme (UNDP). The magnitude of this index requires simultaneous examination of several factors suspected of influencing the fluctuations in the Human Development Index (HDI).

Factors that influence the Human Development Index (HDI) include, Life expectancy (health). It is an indicator that influences the Human Development Index such as infant mortality rate, average population that is sick, percentage of sick population, percentage of births assisted by medical personnel. Knowledge (education). It is a factor that influences the Human Development Index. Knowledge indicators (education) include average length of schooling, number of children dropping out of school, and so on. Decent living standards (economy). It is a factor that influences the Human Development Index. Decent living standards indicators include the number of employed population, the number of poor population, the number of unemployed, and so on. The following presents data on the development of the Human Development Index by Regency/City in West Sumatera from 2016-2020.

Based on Figure 1 below, comparisons between regions do not stop at variations in the Human Development Index (HDI) figures and their rankings, but can also be compared levels of progress through the percentage of growth in the Human Development Index (HDI). The growth of the Human Development Index (HDI) shows a comparison between previous achievements. The

highest Human Development Index (HDI) in 2020 was in Padang City at 82.82, followed by Bukit Tinggi City in 2020 at 80.58 and Payakumbuh City in 2020 at 78.90. Conversely, the lowest Human Development Index (HDI) occurred in Mentawai Islands Regency in 2016 at 58.27. The comparative picture of the achievement of the Human Development Index (HDI) in Padang City with Mentawai Islands Regency is a contrasting comparison. This phenomenon indirectly illustrates the existence of a fairly wide gap, the high Human Development Index is due to being the center of the economy and education as well as access to affordable health services and the lowest is due to the existence of health facilities, education, economic support infrastructure that has not been evenly developed and the lack of decent housing.



Figure 1. Development of the Human Development Index According to Regency/City In Sumatra West 2016-2020

Source: BPS West Sumatra, 2024

Table 1. Number of Poor People by Regency/City in West Sumatra (Thousand People)

Region	2016	2017	2018	2019	2020
West Sumatra	371.55	364.51	357.13	348.22	344.23
Mentawai Islands Regency	13.09	12.95	12.99	13.22	13.37
South Coast Regency	35.86	35.53	34.92	36.51	35.46
Solok Regency	34.06	33.33	32.89	29.74	29.28
Sijunjung Regency	17.12	16.83	16.55	16.65	16.28
Tanah Datar Regency	19.63	19.27	18.48	16.20	15.34
Padang Pariaman Regency	36.34	34.70	33.20	29.48	28.98
KabAgam	37.55	36.57	32.92	33.10	33.31
Lima Puluah Kota Regency	28.57	26.93	26.47	26.64	26.43
Pasaman Regency	20.83	20.38	20.31	20.22	20.29
South Solok Regency	11.91	11.89	11.85	12.49	12.39
Dharmasraya Regency	16.24	15.63	15.42	15.49	15.70
West Pasaman Regency	30.76	30.84	31.83	31.53	31.64
Padang City	42.56	43.75	44.04	42.44	42.17
Solok City	2.59	2.50	2.29	2.29	1.99
Sawahlunto City	1.34	1.23	1.48	1.35	1.36
Padang Panjang City	3.47	3.22	3.11	3.00	2.84
Bukittinggi City	6.81	6.75	6.32	6.00	6.01
Payakumbuh City	8.35	7.72	7.69	7.68	7.74
Pariaman City	4.47	4.49	4.40	4.20	3.66

Source: BPS West Sumatra 2016-2020

One of the factors that influence the decline of a region's economy is the high level of poverty. Etymologically, poverty comes from the word "Miskin" which means having no possessions and lacking everything. The Central Statistics Agency defines it as an individual's inability to meet the minimum basic needs for a decent life (BPS, 2012). Furthermore, it is stated that poverty is a condition that is below the standard value line of minimum needs, both for food and non-food items, which is called the poverty line *or also* called the poverty threshold . According to (Yacoub, 2012) in his research, poverty is a fundamental problem, because poverty concerns the fulfillment of the most basic needs in life and poverty is a global problem because poverty is a problem faced by many countries. Poverty is a crucial problem experienced by nearly every country in the world. Generally, poverty can be defined as the inability to meet basic needs in every aspect of life. According to Amartya Sen (1999), poverty is more related to the inability to achieve that standard of living than whether it is achieved. The following presents poverty data by district/city in West Sumatra from 2016 to 2020.

Based on table 1, Comparison of the number of poor people according to Regency/City in West Sumatra, the highest is Padang City at 44.04 in 2018, followed by Agam Regency at 37.55 in 2016 and followed by Pesisir Selatan Regency at 36.51 in 2019. And conversely, the smallest number of poor people is Sawah Lunto City at 1.23 in 2017, followed by Solok City at 1.99 in 2020 and Padang Panjang City at 2.84 in 2020. While data from all Provinces West Sumatra experienced a decline from 2016 to 2020. This phenomenon leads to poverty stemming from the vicious cycle theory, which states that low productivity leads to low levels of regional economic prosperity and, in turn, impacts the Human Development Index.

To measure the level of economic prosperity in order to overcome the problem of poverty of the population in a region, the Gini coefficient (Gini Ratio) is used, which is a tool to measure inequality or aggregate inequality (overall). The Gini Index has a value between 0 and 1. A value of 0 indicates perfect equality where everyone has exactly the same income while a value of 1 indicates perfect inequality (complete inequality or perfectly unequal), where the entire population is concentrated in a certain area. So, the greater the value of the Gini concentration ratio, the greater the possibility of inequality between the distribution of the population and the number of locations.

Gini Index (Gini Ratio). The Gini Index is a measure of equality measured by comparing the area formed between the diagonal and the Lorenz Curve (income distribution) divided by the area of the triangle below the diagonal. Daimon and Thorbecke (1995:5) argue that decreasing inequality (improving income distribution) is always inconsistent with increasing poverty incidence unless there are two aspects underlying the inconsistency. 1) variations in income distribution from the lowest class increased drastically as a result of the crisis. 2) is a methodological issue related to doubts in measuring poverty and inequality indicators. The following presents Gini Ratio data by Regency/City in West Sumatra from 2016-2020.

Based on Table 2 below, Comparison between regions according to the Gini Ratio of Regency/City in West Sumatra, the highest is Padang City in 2017 at 0.338, followed by Bukit Tinggi City in 2018 at 0.337 and Mentawai Islands Regency in 2019 at 0.336. On the other hand, the lowest Gini Ratio is Sijunjung Regency in 2018 at 0.3, then Tanah Datar Regency in 2016 at 0.3 and Dhamasraya Regency in 2016 at 0.3. Padang Panjang City in 2017 also has a Gini Ratio of 0.3 from the table above, it can be seen that there are several Regencies/Cities that have the same Gini Ratio but in different years. Based on the data above, the Gini ratio is fluctuating, meaning that the Gini ratio value fluctuates every year, this is due to differences in regional income in different years .

Human development has a very broad meaning. The primary goal of development should be to create an environment that allows for a long, healthy, and productive life . Development and human development differ. Development emphasizes economic growth, human capital formation, human resources, people's welfare, and the fulfillment of basic needs. Human development focuses on expanding people's life choices so they can live a life of freedom and dignity (Arafat et al. 2018). According to Endrawati et al. (2023), poverty is an absolute or relative condition in an area where an individual or group of people is unable to meet their basic needs according to prevailing values or norms. From an economic perspective, poverty refers to the gap between weak

purchasing power and the desire to fulfill basic needs. According to Rini et al. (2022), the Gini Ratio is a measure of overall inequality ranging from zero to one. According to Todaro and Smith (2011), income inequality is the unequal distribution of total national income among several households (Pranita & Idris, 2021). Increases in labor income can lead to increased capital risk in the workforce, ultimately reducing labor demand. This leads to unemployment and increasing income inequality (Romi, 2021).

Table 2. Gini Ratio by Regency/City in West Sumatra 2016-2020

Region	Gini Ratio				
	2016	2017	2018	2019	2020
West Sumatra	0.33	0.318	0.321	0.306	0.305
Mentawai Islands Regency	0.31	0.319	0.306	0.336	0.273
South Coast Regency	0.27	0.299	0.255	0.246	0.264
Solok Regency	0.31	0.294	0.303	0.285	0.277
Sijunjung Regency	0.33	0.333	0.3	0.293	0.269
Tanah Datar Regency	0.3	0.262	0.288	0.278	0.273
Padang Pariaman Regency	0.26	0.28	0.296	0.297	0.257
Agam Regency	0.29	0.279	0.257	0.251	0.278
Lima Puluh Kota Regency	0.27	0.262	0.283	0.238	0.222
Pasaman Regency	0.3	0.26	0.266	0.33	0.31
South Solok Regency	0.31	0.299	0.309	0.295	0.307
Dharmasraya Regency	0.3	0.252	0.264	0.278	0.28
West Pasaman Regency	0.31	0.286	0.29	0.283	0.258
Padang City	0.35	0.338	0.344	0.312	0.312
Solok City	0.34	0.299	0.296	0.271	0.286
Sawahlunto City	0.32	0.299	0.31	0.289	0.3
Padang Panjang City	0.38	0.3	0.29	0.322	0.394
Bukittinggi City	0.33	0.313	0.337	0.267	0.265
Payakumbuh City	0.34	0.303	0.302	0.276	0.325
Pariaman City	0.34	0.301	0.316	0.3	0.31

Source: BPS West Sumatra 2016-2020

Absolute poverty is the number of people who are unable to obtain sufficient resources to meet basic needs, people living below the minimum real income level or can be said to be living below the international poverty line (Todaro and Smith, 2006). Specifically, this indicates that, *all else being equal*, if the Gini ratio increases by 1 percent, the average Human Development Index will increase by approximately 0.0057 percent. Income inequality will narrow as a simultaneous effect of increased regional spending, which will collectively increase the Human Development Index (HDI). Based on the above phenomenon, the problem formulation in this study is to what extent does poverty influence the human development index in West Sumatra Regency/City and to what extent does the Gini ratio influence the human development index in West Sumatra Regency/City.

LITERATURE STUDY

Poverty is a common problem in various regions in Indonesia. Poverty causes a person to be unable to meet their living needs. Poor people have low purchasing power, so their standard of living cannot meet their needs. Poverty has a low standard of living, which can negatively impact human development, because a decent standard of living is one of the elements of the Human Development Index (HDI). New growth theory emphasizes the importance of government, particularly in improving the Human Development Index (HDI) and encouraging research and

development to increase human productivity. Investing in education can improve the quality of human resources, as evidenced by increased knowledge and skills. The higher a person's education, the greater their knowledge and skills, which in turn boosts their productivity. Companies will gain more by employing highly productive workers, which in turn will lead to higher wages. In informal sectors such as agriculture, improving the skills and expertise of the workforce can increase agricultural output, as skilled workers are able to work more efficiently.

Ultimately, someone with high productivity will achieve better welfare, which is demonstrated through increased income and consumption. Low productivity among the poor can be caused by their limited access to education (Trisno et al., 2022). Absolute poverty is the number of people who are unable to obtain sufficient resources to meet basic needs, the population lives below the minimum real income level or can be said to live below the international poverty line (Simanjuntak et al., 2024). Further research (Maulana et al., 2022; Safitri et al., 2024; Syofya and Shintia, 2024), found that poverty has a positive and significant effect on the human development index.

H1: Poverty Has a Positive and Significant Influence on the Human Development Index in Districts/Cities of West Sumatra

Based on the results of panel data estimation, it shows that the Gini Ratio variable has a positive effect on the Human Development Index (HDI). The Gini Ratio is a tool for measuring the distribution of income or wealth, indicating how evenly income and wealth are distributed among the population. Therefore, the more evenly distributed the amount of income and wealth will lead to an increase in the level of welfare and the Human Development Index in West Sumatra. Conversely, the more unequal income and wealth in West Sumatra will lead to a lower level of welfare and the Human Development Index in West Sumatra. Specifically, this is an indication that under ceteris paribus conditions, if the Gini ratio increases by 1 percent, then on average the Human Development Index will increase by around 0.0057 percent. Income inequality will narrow as a simultaneous effect of increased regional spending, which together will increase the HDI. Furthermore, research (Umamah and Syafitri, 2025; Ramadhan, 2024; Apriyanti and Rospida, 2025; Riani, et al., 2021 and Albajili and Samsidin, 2025) found that the Gini ratio has a positive and significant effect on the human development index, this proves that the higher the Gini ratio, the higher the human development index.

H2: The Gini Ratio Has a Positive and Significant Influence on the Human Development Index in Districts/Cities of West Sumatra.

METHOD

The data used in this study is panel data which is a combination of *Time Series* and *Cross Section data*. *Time Series data* is in the form of the Human Development Index from year to year being studied and the sequence from year to year of the variables that influence it. *Cross section data* in this study is a study of more than one Regency/City in West Sumatra. The population in this study was obtained from the Central Statistics Agency (BPS). From BPS sources, data on the Human Development Index, Poverty, Gini Ratio and GRDP in the Regency/City of West Sumatra were obtained. The dependent variable used in this study is the human development index, while the independent variables used in this study are poverty and the Gini ratio. The data analysis technique in this study uses quantitative analysis techniques, which are carried out by collecting numerical data or numbers using multiple linear regression analysis. Multiple linear regression analysis is an analysis used to examine the relationship between the dependent variable and other independent variables. This study uses *software* SPSS 22 for data processing and analysis used is descriptive statistical analysis, classical assumption tests, including (normality, multicollinearity, heteroscedasticity) and multiple linear regression analysis hypothesis tests including (R2 test · F test, and t test).

RESULTS AND DISCUSSION

Results

Descriptive Statistics

Descriptive statistics are used to obtain an overview of the data to be analyzed. The analytical tools used in descriptive statistical tests include maximum, minimum, average (mean) , and standard deviation values. Descriptive statistics present numerical measurements that are very important for sample data. (Ghozali, 2016) .

Table 3. Descriptive Statistical Test Results

Variables	N	Minimum	Maximum	Mean	Standard Deviation
Human Development Index (Y)	95	58.27	82.82	71,6927	5.52284
Poverty (X1)	95	1.23	44.04	18,7967	12.90103
G is the ratio (X2)	95	,22	,39	,2953	,02949
Valid N (listwise)	95				

Source: SPSS 21 Data Processing (2025)

Based on table 3, the results of the descriptive statistical test found that the average value of the human development index was 71.69, while the standard deviation value was 5.52284. The average value of the poverty variable was 18.79, while the standard deviation value was 12.90103, then the average value of the Gini ratio variable was 0.29 while the standard deviation value was 0.2949.

Classical Assumption Test

Normality Test

A normality test is performed to determine whether the data is normally distributed. This study used the *Kolmogorov-Smirnov* (KS) statistical test to test for normality. Data normality can be detected using the *Kolmogorov-Smirnov test* . (Ghozali, 2016) .

Table 4. Normality Test Results

		Unstandardized Residual
N		95
Normal Parameters ^{a,b}	Mean	,0000000
	Standard Deviation	5.26085250
Most Extreme Differences	Absolute	,069
	Positive	,069
	Negative	-,060
Test Statistics		,069
Asymp. Sig. (2-tailed)		,200 ^{c,d}

Source: SPSS 21 Data Processing (2025)

From table 4 above, it can be seen that *the Asymp. Sig. (2-tailed) value* on the residual data is 0.200 for all variables > 0.05, so it can be concluded that the variables of the human development index, poverty, and Gini ratio in this study have been normally distributed, so that data processing can be carried out further.

Table 5. Multicollinearity Test Results

Variables	Tolerance	VIF	Results
Poverty	916	1,091	No Multicollinearity Occurs
Gini Ratio	916	1,091	No Multicollinearity Occurs

Source: SPSS 21 Data Processing (2025)

Based on table 5 above, it can be seen that *the corporate social responsibility* , poverty and Gini ratio variables have a *tolerance value of* > 0.10 or the same as a VIF value < 10, so it can be concluded that the independent variables used in this study are free from multicollinearity

problems.

Table 6. Heteroscedasticity Test Results

Variables	Sig	Results
Poverty	0.736	No Heteroscedasticity Occurs
Gini Ratio	0.281	No Heteroscedasticity Occurs

Source: SPSS 21 Data Processing (2025)

Based on the results of heteroscedasticity testing using the *Glejser test*, it can be seen that the values of *corporate social responsibility*, *poverty* and *Gini ratio* have a significance value of $> \alpha 0.05$, so it can be concluded that the variables in the regression model in this study do not experience heteroscedasticity problems or are free from heteroscedasticity symptoms.

Hypothesis Testing

Multiple Linear Regression Analysis

Multiple linear regression analysis in this study is a data analysis used to test the hypothesis, namely to test whether there is a significant influence between independent variables either together or partially (Ghozali, 2016).

Table 7. Multiple Linear Regression Test Results

Research Variables	Regression Coefficient	Sig	Results	Hypothesis Conclusion
Constant	60,229	0,000		
Poverty	-,062	0.164	Not Significant	H₁ Rejected
Gini Ratio	42,781	0.030	Significant	H₂ Accepted
R-Square	0.073			
F	0.011			

Source: SPSS 21 Data Processing (2025)

From table 7 In general, the multiple regression equation that can be obtained from multiple regression results is:

$$Y = 60.229 - 0.062X_1 + 42.781$$

From the equation it can be seen that the constant or intercept has a value of 60.229 mathematically stating that if the poverty value (X_1) and the Gini ratio (X_2) are equal to zero then the value of the human development index (Y) is 60.229. The regression coefficient of the poverty variable (X_1) is -0.062, meaning that a decrease in the poverty value with the assumption that other independent variables are constant will cause an increase in the human development index of -0.062. Finally, the regression coefficient of the Gini ratio variable (X_2) is 42.781, meaning that an increase in the Gini ratio variable with the assumption that other independent variables are constant will cause an increase in the human development index (Y) of 42.781.

Furthermore, the results of the coefficient of determination (R^2) test above show that the *adjusted R²* is 0.073 or 7.3 %. This indicates that 7.3 % of the human development index is influenced by the poverty and Gini ratio variables. Meanwhile, the remaining 92.7 % of the human development index is influenced by other variables not used as independent variables in this study.

Discussion

The Impact of Poverty on the Human Development Index

Poverty test results to the human development index the calculated t value was obtained as $-1.403 < 1.678$. The significance level shows 0.164 which is greater than the significance level of 0.05. This means that H_1 is rejected and it can be concluded that poverty does not affect the human development index. The higher the poverty level, the lower the human development index will be. Poverty is one of the factors contributing to the low Human Development Index (HDI). Because poverty is characterized by low levels of education, health, and well-being, poverty is a hallmark of low human development. This is not in line with research by Dwi Hariyanto (2015) which states that efforts to reduce the number of poor people have positive elasticity towards human

development, if the number of poor people increases then human development will increase.

Meanwhile, according to research by Nursiah Chalid and Yusbar Yusuf, the partial poverty level has no significant effect on the Human Development Index (HDI). The results of this study are also in accordance with the Neo-Liberal and Social Democracy theories, where the concept and indicators of poverty refer to absolute poverty and relative poverty. In their argument, poverty is an individual problem caused by the weaknesses and choices of the individual concerned. Poverty will disappear by itself if market forces are expanded as much as possible and economic growth is driven as high as possible. The superiority of market mechanisms and natural economic growth is considered to be able to overcome poverty and social injustice. According to the New Growth Theory, it emphasizes the importance of the role of government, especially in increasing human capital development and encouraging research and development to increase human productivity, such as improving the quality of education to improve one's skills which will increase one's productivity. When productivity increases, which is a characteristic of increasing human capital development, population income increases and encourages poverty reduction.

The findings of this study, which indicate that poverty does not significantly affect the Human Development Index (HDI), align with several recent studies that also report similar outcomes. For instance, Putra and Rahayu (2022) found that poverty rates had no direct impact on HDI in several Indonesian provinces due to compensatory effects from government social programs and education subsidies. Likewise, research by Sari and Handayani (2023) highlighted that in regions with robust infrastructure and health services, poverty levels did not correlate strongly with human development outcomes, as basic needs were still met through public provision. Similarly, Fadilah et al. (2024) emphasized the role of local governance in mitigating the effects of poverty on human development through targeted economic empowerment initiatives. These findings support the notion that while poverty remains a concern, its impact on HDI can be moderated by institutional and policy responses that ensure access to essential services.

However, this result diverges from several other studies that have firmly established poverty as a critical determinant of HDI. For example, Arifin and Susanti (2022) concluded that poverty had a strong negative effect on HDI in rural districts of Indonesia, largely due to limited access to education and healthcare. Similarly, Rizky and Maulida (2023) demonstrated that in underdeveloped regions, rising poverty was directly associated with a decline in HDI, particularly affecting life expectancy and school enrollment. A study by Latifah et al. (2024) also found that high poverty levels significantly undermined human development progress, especially where government interventions were weak or poorly targeted. These conflicting findings suggest that the relationship between poverty and HDI is complex and may vary depending on regional context, government policies, and the availability of public services.

The Influence of the Gini Ratio on the Human Development Index

Gini ratio test results to the human development index The calculated t value is $2.202 > 1.678$. The significance level shows 0.030 which is smaller than the significance level of 0.05. This means that H2 is accepted and it can be concluded that the Gini ratio has an effect on the human development index. The higher the Gini ratio value, the higher the level of the human development index. Based on the results of panel data estimation, it shows that the Gini Ratio variable has a positive effect on the Human Development Index (HDI). The Gini Ratio is a tool for measuring the distribution of income or wealth, indicating how evenly income and wealth are distributed among the population. Therefore, the more evenly distributed the amount of income and wealth will lead to an increase in the level of welfare and the Human Development Index in West Sumatra. Conversely, the more unequal income and wealth in West Sumatra will lead to a lower level of welfare and the Human Development Index in West Sumatra. Specifically, this is an indication that under *ceteris paribus conditions*, if the Gini ratio increases by 1 percent, then on average the Human Development Index will increase by around 0.0057 percent. Income inequality will narrow as a simultaneous effect of increased regional spending, which together will increase the HDI.

The positive relationship found in this study between the Gini ratio and the Human Development Index suggests a context-specific dynamic where increasing inequality does not

necessarily reduce development outcomes, possibly due to regional economic growth or targeted government interventions. This result aligns with the findings of Rahman and Hasan (2022), who analyzed the case of Bangladesh and found that moderate income inequality, when accompanied by economic growth and infrastructural investments, can contribute positively to improvements in education and health indices, both components of the HDI. Similarly, a study by Yusuf and Arif (2023) on Indonesian provinces reported that in regions experiencing rapid development and urbanization, income inequality had a statistically significant but positive correlation with HDI, attributed to concentrated growth that improved public service access in urban centers. On the contrary, the findings deviate from those of Chandra and Putri (2021), who found a negative relationship between the Gini coefficient and HDI in several Southeast Asian countries. Their study argued that persistent income inequality often limits access to quality healthcare and education for lower-income groups, thus hampering overall human development. This suggests that the positive effect observed in this study may not apply universally and may depend heavily on other social, economic, and institutional factors that mediate the impact of inequality.

CONCLUSION

The findings of this study reveal a nuanced relationship between poverty, income inequality, and the Human Development Index (HDI). Despite the commonly held belief that poverty plays a crucial role in shaping human development, the statistical analysis in this research indicates that poverty does not have a significant effect on the HDI. This may be due to various underlying factors, such as the role of government interventions, social safety nets, and community-based support systems that help offset the harshest effects of poverty on education, health, and well-being. On the other hand, the study confirms that income distribution, as reflected by the Gini ratio, significantly influences the HDI. A more equitable distribution of income tends to foster higher levels of human development, suggesting that regions with more balanced economic outcomes provide better access to essential services and opportunities for their populations. This aligns with theories that emphasize structural and policy-driven approaches to addressing inequality and development, highlighting the role of both market mechanisms and government efforts in improving welfare. However, the results also present an interesting contradiction, as an increase in the Gini ratio is shown to correspond with an increase in HDI, which may reflect short-term regional economic growth that benefits broader development indicators even while inequality rises. These findings should be interpreted with caution due to several limitations. First, the scope of the data may not capture long-term or latent effects of poverty on human development. Second, the use of aggregated regional data might mask variations at the micro or household level. Lastly, external factors such as migration, urbanization, and unobserved government programs may also influence the outcomes. Future research is recommended to explore these dynamics further by incorporating more granular data, using longitudinal methods, and examining mediating variables such as access to education, healthcare, and employment. Investigating how different types of poverty (absolute vs. relative) or dimensions of inequality affect specific components of the HDI may also provide deeper insights into effective policy formulation.

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