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DETERMINANTS OF HUMAN DEVELOPMENT INDEX AND THE MODERATING ROLE OF ZAKAT DISBURSEMENT: EVIDENCE FROM BANTEN PROVINCE (2019–2023)

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Abstract

This study aims to analyze the influence of unemployment, poverty, and the Gini ratio on the Human Development Index (HDI) with zakat as a moderating variable in eight regencies/cities in Banten Province for the period 2019-2023. This study uses a quantitative approach with secondary data obtained from the Central Statistics Agency (BPS) and the National Zakat Agency (BAZNAS). The analysis method used is panel data regression with *the Fixed Effect Model* (FEM) and *Moderated Regression Analysis* (MRA). The results show that unemployment and the Gini ratio have no effect on the Human Development Index, while poverty has a significant positive effect on the Human Development Index. In addition, zakat is unable to moderate the influence of unemployment, poverty, and the Gini ratio on the Human Development Index. Therefore, it is necessary to optimize the management and distribution of zakat so that it can contribute more effectively to improving community welfare.

Keywords: Human Development Index, Unemployment, Poverty, Gini Ratio, Zakat

1. Introduction

The Human Development Index (HDI) is a key indicator used to measure the success of a region's development through three basic dimensions: longevity, healthy living, and a decent standard of living. In line with the *Sustainable Development Goals* (SDGs), improving the quality of human development is a primary goal for every country, including Indonesia, in realizing sustainable social welfare. Therefore, the Human Development Index not only reflects economic development achievements but also depicts the overall quality of life of the community, making it a strategic indicator in the formulation and evaluation of development policies at the regional and national levels.

Although the Human Development Index (HDI) in Banten Province continued to increase during the study period (2019-2023) and reached a high level of 73.87 in 2023, human development in this region still shows regional disparities. South Tangerang City had the highest HDI at 82.28, while Lebak Regency only achieved 65.21, making this value still in the moderate category. This condition indicates that human development in Banten Province has not been evenly distributed, and is still concentrated in the northern part of Banten, especially Greater Tangerang. Meanwhile, the southern part of Banten, such as Lebak Regency and Pandeglang Regency, still faces human development lag. This phenomenon indicates that the high average HDI in Banten Province does not fully reflect the equitable distribution of human development quality across all regencies/cities.

The inequality in human development in Banten Province is inseparable from the various socio-economic problems still facing the region. Based on data from the Central Statistics Agency (BPS), Banten Province was the province with the highest unemployment rate in Indonesia in 2023. Furthermore, Banten Province also faces a relatively high poverty rate, with the number of poor people reaching 826,130, and a Gini ratio that places Banten as one of the provinces with the highest levels of income inequality in Indonesia. This indicates a paradox, namely that the high average achievement of the Human Development Index is not always followed by equitable distribution of social welfare. Therefore, the high unemployment rate, poverty, and the Gini ratio are reasons as factors that have the potential to influence human development in Banten Province.

From an Islamic economic perspective, zakat is an instrument that has the potential to support human development through income redistribution and community economic empowerment. Banten Province has significant potential for zakat collection and distribution, reflected in its position as one of the provinces with the highest zakat collection realization in Indonesia. Furthermore, the ratio of zakat realization to Gross Regional Domestic Product (GRDP) in Banten Province showed an increasing trend during the 2019-2023 period, although its contribution remains relatively small. This condition indicates that optimizing zakat management still offers opportunities to support improvements in the quality of human development and reduce the impact of various socioeconomic problems, such as unemployment, poverty, and income inequality.

Various previous studies have examined the relationship between unemployment, poverty, the Gini ratio, and the Human Development Index (HDI). However, these results still show inconsistent findings. Some studies conclude that unemployment, poverty, and the Gini ratio have a significant effect on the HDI, while others show an insignificant effect or even a different direction of the relationship. Furthermore, research on zakat as a moderating variable in the relationship between socioeconomic factors and human development is still relatively limited and focuses more on poverty levels than on the HDI. This situation indicates a research gap *that still* requires further study, particularly at the district/city level in Banten Province.

Based on these phenomena and *research gaps* , this study offers a novelty *by* examining the role of zakat as a moderating variable in the relationship between unemployment, poverty, and the Gini ratio on the Human Development Index (HDI) in eight districts/cities in Banten Province for the period 2019-2023. Unlike previous studies that generally only examine the direct influence of socioeconomic variables on the HDI or test zakat on poverty, this study integrates the perspectives of human development and Islamic economics by examining the moderating effect of zakat. Therefore, this study aims to analyze the influence of unemployment, poverty, and the Gini ratio on the Human Development Index (HDI), with zakat as a moderating variable in eight districts/cities in Banten Province.

2. Literature review

2.1 Human Development Index (HDI)

According to the UNDP (2023), the Human Development Index (HDI) is a composite measure formed from three basic dimensions: longevity, health, and a decent standard of living. In Indonesia, the Central Statistics Agency (BPS) adopted this concept as a strategic indicator for measuring the success of regional development and the quality of life of the community (BPS, 2023). The higher the HDI value, the better the quality of human resources in a region. Therefore, the HDI not only reflects the success of economic development but also shows the level of community welfare more comprehensively. Therefore, the HDI is an important indicator in the formulation, implementation, and evaluation of development policies at both the regional and national levels.

2.2 Unemployment Against HDI

Unemployment is a condition where someone who has entered the workforce does not have a job, but is looking for work or preparing

a new business (Central Statistics Agency, 2023). According to (Todaro & Smith, 2016), the high unemployment rate reflects the suboptimal utilization of human resources, thus hampering economic growth and reducing community welfare. Meanwhile, according to (Sukirno, 2017)explains that unemployment causes a loss of household income, thus decreasing the community's ability to meet education, health, and decent living standards. This condition ultimately has the potential to reduce the quality of human development as reflected in the Human Development Index (HDI). Therefore, theoretically, an increase in the unemployment rate is expected to have a negative impact on the HDI. Empirically, research conducted by (Suryani, 2024)shows that unemployment does not have a significant effect on the HDI, thus indicating a difference between the theoretically predicted relationship and empirical findings.

2.3 Poverty Against HDI

Poverty is the inability of an individual or household to meet basic needs to maintain a decent standard of living. The Central Statistics Agency (2023) defines the poor as those with average monthly per capita expenditure below the poverty line. According to (Todaro, 2016), poverty is a major obstacle to development because it limits people's access to education, health services, and economic opportunities. This condition leads to low human resource quality, which impacts human development outcomes. Therefore, theoretically, increasing poverty levels are expected to lower the Human Development Index (HDI).

2.4 Gini Ratio to Human Development Index

The Gini ratio is an indicator used to measure the level of income distribution inequality within a region (Priambada, 2024). The Gini ratio ranges from 0 to 1, with values closer to 0 indicating a more equitable income distribution, while values closer to 1 indicate a higher level of inequality. According to the Central Statistics Agency (2023), the Gini ratio is an important indicator in assessing the equity of development outcomes and societal welfare. High inequality can lead to an unequal distribution of economic resources, thus limiting access to education, healthcare, and a decent standard of living for the community, particularly low-income groups. This condition can lead to uneven human development outcomes across regions and ultimately has the potential to hinder improvements in the Human Development Index (HDI).

Empirically , the relationship between the Gini ratio and the Human Development Index (HDI) still shows mixed results. (Ramadhan & Pertiwi, 2025) found that the Gini ratio had no significant effect on the HDI. This finding suggests that income inequality does not always have a direct impact on human development and can be influenced by socioeconomic conditions and development policies in each region.

2.5 Zakat as a Moderating Variable

Zakat is an instrument for wealth distribution in Islamic economics, aimed at realizing social justice and improving social welfare. According to Hafidhuddin (2022), zakat not only serves as a spiritual act of worship but also has a socio-economic function through the redistribution of income from wealthy groups to those in need (*mustahik*). Zakat distribution, whether in consumptive or productive forms, is expected to help meet basic community needs, increase access to education and healthcare, and encourage economic empowerment.

Beik and Arsyianti (2016) explain that optimal zakat management has the potential lower level poverty , reduce inequality income , and increase welfare society . In context development humans , the existence of zakat is expected can strengthen effectiveness of the poverty alleviation program poverty as well as increase quality life public through repair dimensions education , health , and standards life worthy . Therefore that , in a way theoretically zakat is estimated capable moderate influence unemployment , poverty , and ratio like this to Human Development Index (HDI).

3. Research methods

This study uses a quantitative approach with an explanatory research type to analyze the effect of unemployment, poverty, and the Gini ratio on the Human Development Index (HDI) with zakat as a moderating variable in eight districts/cities in Banten Province for the period 2019-2023. The data used are secondary data in the form of panel data *,* namely a combination of *cross-sectional* and *time series data* , with a total of 40 observations. The data in this study were obtained from official publications of the Central Statistics Agency (BPS) and the National Zakat Agency (BAZNAS).

The dependent variable in this study is the Human Development Index (HDI). The independent variables are the open unemployment rate, poverty rate, and Gini coefficient. The moderating variable is the

distribution of zakat funds, measured by the amount of zakat funds distributed by BAZNAS to each district/city in Banten Province.

Data analysis was performed using Eviews-12 software. The analysis stages included descriptive statistical analysis, panel data regression model selection using the Chow and Hausman tests, and classical assumption testing, including multicollinearity and heteroscedasticity tests. This was followed by statistical tests consisting of the R2 test and the T-test. Finally, a *moderated regression analysis was performed.*

The role of zakat as a moderating variable was analyzed using the *Moderated Regression Analysis* (MRA) test. This test was conducted by forming an interaction variable between zakat and each independent variable, namely unemployment, poverty, and the Gini ratio, against the dependent variable, namely the Human Development Index (HDI). The moderating variable is declared influential if the coefficient of the interaction variable shows a Prob. value of the interaction variable <0.05, then the interaction between the independent variable and zakat is declared significant, so that zakat has a moderating role in the relationship. Conversely, if the probability value is >0.05, then there is no statistical evidence that zakat moderates the relationship between the independent variable and the dependent variable.

4. Results and Discussion

4.1 Research result

4.1.1 Descriptive Statistical Analysis

Descriptive analysis was conducted to provide a general overview of the characteristics of the research data, including the Human Development Index (HDI), unemployment, poverty, the Gini ratio, and zakat in eight districts/cities in Banten Province during the 2019-2023 period. The descriptive analysis describes the data that can be analyzed based on the mean , standard deviation, maximum value, and observation values. This study used 40 observations consisting of a combination of eight districts/cities and five years of observation.

Table 4.1 Descriptive Analysis

	Y (HDI)	X1 (Unemployment)	X2 (Poverty)	X3 (Gini Ratio)	Z (Zakat)
Mean	72.02325	8.709000	5.721250	0.320950	5,060,000,000
Median	72.36500	8.615000	5.250000	0.316500	2,880,000,000
Maximum	82.28000	13.06000	10.72000	0.383000	23,500,000,000
Minimum	63.88000	4.780000	1.680000	0.243000	6400000
Std. Dev.	5.878319	1,709,273	2.544015	0.035914	5,170,000,000
Skewness	0.231749	0.473210	0.381353	-0.088560	1.628847
Kurtosis	1.886018	3.647930	2.225432	2.109639	5.658203
Jarque-Bera	2.426311	2.192537	1.969458	1.373524	29.46435
Probability	0.297258	0.334115	0.373540	0.503203	0.000000
Observations	40	40	40	40	40

Based on the results of descriptive statistical analysis in Table 4.1, it shows that the average value (*mean*) of the Human Development Index (HDI) is 72.02, with a minimum value of 63.88 and a maximum value of 82.28. The unemployment variable has an average value (*mean*) of 8.709000, with a minimum value of 4.780000, and a maximum value of 13.06000. The poverty variable has an average value (*mean*) of 5.721250 , with a minimum value of 1.680000 , and a maximum value of 10.72000. The Gini ratio variable has an average value (*mean*) of 0.320950, with a minimum value of 0.243000, and a maximum value of 0.383000. The zakat variable has an average value (*mean*) of IDR 5,060,000,000, with a minimum value of IDR 6,400,000, and a maximum value of IDR 23,500,000,000.

4.1.2 Estimation Model Selection

In this test, there are 3 types of tests carried out, namely the Chow Test, Hausman Test, and Lagrange Multipler Test.

1. Chow Test

Chow test is used to determine the most appropriate panel data regression model between *the Common Effect Model* (CEM) and *the Fixed Effect Model* (FEM). According to (Ghozali, 2018) the basis for making decisions on the *Chow test* is: If the *cross-*

section probability value is > a significant value of 0.05, then the H0 value is accepted, so the model used is *the common effect model.* If the cross-section probability value is *chi-square < a significant value of 0.05, then the* H0 value is accepted, so the model used is *the fixed effect model.*

Table 4.2 Chow Test

Redundant Fixed Effect Tests
Equation: Untitled
Cross-section fixed effects test

Effects Test	Statistics	df	Prob.
Cross-section F	367.432428	(7.28)	0.0000
Cross-section Chi-square	181.242904	7	0.0000

Based on the results of the Chow test in Table 4.2 above, the Cross-section F Prob value is 0.0000 and the Cross-section Chi-square Prob value is 0.0000. This probability value is smaller than the significance level of 0.05. Thus, H0 is rejected and HA is accepted, so it can be concluded that *the Fixed Effect Model* (FEM) is more appropriate to use compared to *the Common Effect Model* (CEM).

2. Hausman test

The Hausman test is used to determine the most appropriate panel data regression model between *the Fixed Effect Model* (FEM) and *the Random Effect Model* (REM). The following are the results of the Hausman test. According to (Widarjono, 2018), the basis for making decisions using the *Hausman test* is: If the Prob. value is > 0.05, then the H0 value is accepted, so the model used is *the Random Effect Model (REM). If the Prob. value is < 0.05, then the* H0 value is accepted, so the model used is *the Fixed Effect Model (REM). Effect Model* (FEM) *.*

Table 4.3 Hausman Test

Correlated Random Effect – Hausman Test
Equation Untitled
Cross-section random effect test

Test Summary	Chi-Sq. Statistic	Chi-Sq. df	Prob.
Random cross-section	47.040680	4	0.0000

Based on the results of the Hausman test in Table 4.3, the random cross-section probability value is 0.0000, which is smaller

than the significance level of 0.05. Thus, H0 is rejected and HA is accepted, so it can be concluded that *the Fixed Effect Model* (FEM) is more appropriate to use compared to *the Random Effect Model* (REM).

Based on the results of the Chow and Hausman tests, *the Fixed Effect Model* (FEM) was found to be the most appropriate model for use in this study. Therefore, all panel data regression analyses in this study used the *Fixed Effect Model* (FEM) approach to test the influence of Unemployment, Poverty, and the Gini Ratio on the Human Development Index, with Zakat as a moderating variable.

4.1.3 Classical Assumption Test

1. Multicollinearity Test

The multicollinearity test aims to determine whether there is a strong linear relationship between the independent variables in a regression model. If the data exhibits multicollinearity, then there is a strong relationship between the independent variables in the regression model (Bawono & Shina, 2018). The basis for making this test decision is as follows (Ghozali, 2018): If the correlation value is > 0.80, then there is a multicollinearity problem. If the correlation value is < 0.80, then there is no multicollinearity problem.

Table 4.4 Multicollinearity Test

Variables	X1	X2	X3	Z
X1 (Unemployment)	1,000	-0.018	-0.236	0.259
X2 (Poverty)	-0.018	1,000	-0.566	-0.276
X3 (Gini Ratio)	-0.236	-0.566	1,000	-0.039
Z (Zakat)	0.259	-0.276	-0.039	1,000

Based on the results of the multicollinearity test in table 4.4 above can be seen that mark coefficient correlation between variables unemployment , poverty , ratio like this , and zakat in its entirety is below 0.80 . With thus , it can concluded that in the regression model study This No happen multicollinearity . These results based on the basis taking decision (Ghozali , 2018).

2. Heteroscedasticity Test

Heteroscedasticity test is a test used to determine whether the regression model used has unequal variances from the residuals of one observation to another. In this study,

heteroscedasticity testing is not carried out with conventional tests, but is handled using *White cross-section robust standard errors* in the *Fixed Effect Model* (FEM) model. The use of *White cross-section robust* aims to produce standard errors that remain consistent (robust) even though there are indications of heteroscedasticity separately, but is used directly in robust estimation as a form of handling the possibility of heteroscedasticity. correcting the possibility of heteroscedasticity in panel data, so that the resulting standard error becomes reliable.

Table 4.5 Estimation Results *Fixed Effect Model* with *White Cross-Section (Period Cluster) Robust Standard Errors*

Variables	Coefficientin	Std. Error	t-Statistic	Prob.
C	67.85880	1.422803	47.69373	0.0000
X1	-0.027057	0.043834	-0.617256	0.5705
X2	0.817765	0.156084	5.239248	0.0063
X3	-0.952767	1.012281	-0.941208	0.3999
Z	5.38E-12	2.21E-12	2.434418	0.0716

Based on the results of the FEM estimation with *White cross-section robust standard errors* in table 4.5 above, it was obtained that the regression model has been corrected (*robust*) from the heteroscedasticity problem, so that the results of the statistical test were used as a basis for further regression analysis in this study.

4.1.4 Panel Data Regression Analysis

According to (Latan & Temalagi, 2016), multiple linear regression analysis is a regression analysis technique used to test the influence of several independent variables on a dependent variable. Panel data regression analysis was conducted in this study with the aim of determining the influence of independent variables, namely unemployment, poverty, and the Gini ratio, on the dependent variable, namely the human development index, with zakat as a moderating variable. This study uses *a Fixed Effect Model* (FEM) with *White cross-section robust standard errors* so that the resulting coefficient estimates are more robust against the possibility of heteroscedasticity. The equation can be written as follows:

$Y = \alpha + \beta1X1 + \beta2X2 + \beta3X3 + \beta4Z + \varepsilon$

The following are the results of panel data regression analysis:

4.6 Results of Panel Data Regression Analysis

	Coefficientin	Std. Error	t-Statistic	Prob.
C	67.85880	1.422803	47.69373	0.0000
X1	-0.027057	0.043834	-0.617256	0.5705
X2	0.817765	0.156084	5.239248	0.0063
X3	-0.952767	1.012281	-0.941208	0.3999
Z	5.38E-12	2.21E-12	2.434418	0.0716

Based on the estimation results, the following regression equation is obtained:

$Y = 67.85880 - 0.027057X_1 + 0.817765X_2 - 0.952767X_3 + 5.38E^{-12}Z + \varepsilon$

The estimation results show that the unemployment variable (X1) and the Gini ratio (X3) have negative regression coefficients, while the poverty variable (X2) and zakat (Z) have positive regression coefficients on the Human Development Index (HDI). The significance of the influence of each variable is further explained through statistical tests and a discussion of hypotheses in the following section.

4.1.5 Model Feasibility Results (Statistical Test)

According to (Suharyadi & Purwanto, 2016), a statistical test is a test used to obtain a value from a sample to decide whether to accept or reject the null hypothesis. In this study, the tests used were the R2 test and the T test.

1. R2 Test (Coefficient of Determination Test)

The R2 test is used to determine the extent to which an independent variable explains variation in the dependent variable in a regression model. The R2 value ranges from 0 to 1, with values closer to 1 indicating a strong ability of the independent variable to explain variation in the dependent variable. The following are the results of the R2 test :

Table 4.7 R2 Test

Information	Mark
R-squared	0.997898
Adjusted R-squared	0.997072
SE of Regression	0.318103
Sum Squared Residual	2.833303
Log Likelihood	-3,808816
F-statistic	1208,173
Prob (F-statistic)	0.000000
Durbin-Watson Stat	1.049820

Based on the estimation results using *the Fixed Effect Model* (FEM) Using *the White cross-section robust standard errors* in Table 4.7 above, the Adjusted R-Squared value is 0.997072. This indicates that the variables of unemployment, poverty, Gini ratio, and zakat are able to explain 99.71% of the variation in the human development index, while the remaining 0.29% is explained by other variables outside the research model.

2. T-Test (Individual Test)

The T-test is a test conducted with the aim of individually determining the influence of one independent variable on the dependent variable, assuming the other independent variables are constant (*ceteris paribus*). The following are the results of the T-test:

Table 4.8 T-Test

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	67.85880	1.422803	47.69373	0.0000
X1	-0.027057	0.043834	-0.617256	0.5705
X2	0.817765	0.156084	5.239248	0.0063
X3	-0.952767	1.012281	-0.941208	0.3999
Z	5.38E-12	2.21E-12	2.434418	0.0716

Based on the results of the individual test in table 4.8 above, it shows that only the poverty variable (X2) has a significant effect on the Human Development Index with a Prob. value of 0.0063 (<0.05). Meanwhile, the unemployment variable (X1) has a prob. value of 0.5705, the Gini ratio of 0.3999, and zakat (Z) of 0.0716, which indicates that all have a significance value of 5%. Thus, unemployment, the Gini ratio, and zakat do not have a significant

effect on the Human Development Index (HDI) during the study period.

4.1.6 MRA Test

Moderated Regression Analysis (MRA) was used to test whether zakat could moderate the effects of unemployment, poverty, and the Gini ratio on the Human Development Index (HDI) . The following are the results of the MRA test:

1. **The results of the MRA test of unemployment against the Human Development Index with zakat as a moderating variable.**

Table 4.9 MRA Test

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	73.65498	0.791120	93.10218	0.0000
X1	-0.212227	0.090189	-2.353140	0.0256
Z	6.65E-11	1.22E-10	0.545577	0.5895
X1 ×Z	-2.59E-12	1.34E-11	-0.193877	0.8476

Based on Table 4.9, the interaction variable between unemployment and zakat (X1xZ) has a Prob. value of 0.8476 (> 0.05). This result indicates that zakat is unable to moderate the effect of unemployment on the Human Development Index. Thus, the hypothesis that zakat can moderate the relationship between unemployment and the Human Development Index is rejected.

2. **The results of the MRA test of poverty against the Human Development Index with zakat as a moderating variable.**

Table 4.10 MRA Test

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	67.32329	0.624573	107.7909	0.0000
X2	0.816912	0.112968	7.231376	0.0000
Z	-2.70E-11	3.89E-11	0.695800	0.4921
X2 ×Z	6.42E-12	7.79E-12	0.824071	0.4166

Based on Table 4.10, the interaction variable between poverty and zakat (X2xZ) has a Prob. value of 0.4166 (> 0.05). This result indicates that zakat is unable to moderate the effect of poverty on the Human Development Index. Thus, the hypothesis that zakat can moderate the relationship between poverty and the Human Development Index is rejected.

3. **The results of the MRA test of the Gini ratio against the Human Development Index with zakat as a moderating variable.**

Table 4.11 MRA Test

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	73.23595	1.660281	44.11057	0.0000
X3	-4.264985	5.262708	-0.810416	0.4243
Z	3.03E-10	1.73E-10	1.756880	0.0895
X3 ×Z	-8.53E-10	5.71E-10	-1.494778	0.1458

Based on Table 4.11, the interaction variable between the Gini ratio and zakat (X3xZ) has a Prob. value of 0.1458 (> 0.05). This result indicates that zakat is unable to moderate the effect of the Gini ratio on the Human Development Index. Thus, the hypothesis that zakat can moderate the relationship between the Gini ratio and the Human Development Index is rejected.

4.2 Discussion

4.2.1 The Impact of Unemployment on the Human Development Index (HDI)

Based on the results of the T-test that has been conducted, the unemployment variable (X1) has a regression coefficient value of -0.027057 with a probability value of 0.5705, so this value is greater than the significance level of 0.05 (0.5705 > 0.05). These results indicate that unemployment (X1) does not have a significant effect on the Human Development Index (Y) in eight districts/cities in Banten Province. Thus, the first hypothesis (H1) which states that unemployment has an effect on the Human Development Index (HDI) is rejected. This aligns with *Becker's Human Capital Theory* , which states that human development is not solely dependent on the labor market but is also influenced by investment in education, healthcare, and infrastructure quality (Wibowo & Nugroho, 2021). Therefore, unemployment is not strong enough to lower the HDI in regions with established public service quality. These results are in line with the findings of (Kurniawan, 2023) which concluded that in provinces with high educational infrastructure, the impact of unemployment on the HDI tends to be weaker because the quality of education is able to offset the negative effects of unemployment.

4.2.2 The Impact of Poverty on the Human Development Index (HDI)

Based on T-test results that have been done , variable poverty (X2) has coefficient regression of 0.817765 with mark probability of

0.0063. The probability value the more small from level its significance namely of 0.05 (0.0063 < 0.05). results the show that variables poverty (X2) has an effect significant to Human Development Index (HDI) in eight districts / cities in Banten Province . With Thus , the hypothesis second (H_2) which states that poverty influential to Human Development Index (HDI) is accepted .

In a way theory , poverty estimated own connection negative with development human . Concept *Human Development* , developed by Amartys Sen , views development man as expansion capability public in get healthy life , education , and standards a decent life (T. Fernandes, 2023). According to draft the high poverty cause public difficult fulfil need base so that potential lower IPM quality such as number hope life , education , and standards life worthy .

Although Thus , the results study This show direction different relationships . In statistics , variables poverty own coefficient regression positive and influential significant to Human Development Index in eight districts / cities in Banten Province . Conditions This indicates that connection between poverty and HDI in the period study No fully follow draft theoretically , so that need explained based on The characteristics of the research area . These results are in line with research conducted by (Adim, 2024) which concluded that poverty has a positive and significant effect on the Human Development Index in Indonesia . the explain that connection positive between poverty and HDI can happen due to improvement quality development humans in a area No only influenced by the level poverty , but is also influenced by other factors such as improvement access education , services health , as well as policy steady development walking . Condition the in line with study this , where the index development humans in Banten Province remain experience improvement although level poverty in some districts / cities also experienced improvement during period study .

4.2.3 The Influence of the Gini Ratio on the Human Development Index (HDI)

Based on The results of the T-test that have been carried out, the Gini ratio variable (X3) has a regression coefficient value of -0.952767 with a probability value of 0.3999 , so this value is greater than the significance level of 0.05 (0.3999 > 0.05). These results indicate that the Gini ratio (X3) does not have a significant effect on the Human Development Index (Y) in eight districts/cities in Banten Province.

Thus, the third hypothesis (H3) which states that the Gini ratio has an effect on the Human Development Index (HDI) is rejected.

Inability significance influence ratio like this to index development man can explained by theory *Human Capital* was put forward by Gary Becker. This theory state that quality development man more influenced by investments in education and health , not in distribution income solely . Therefore that area with level inequality relative income tall Still can own high HDI value if access public to education and services health still awake . In addition , the insignificance influence ratio this can also be done explained from characteristics Human Development Index (HDI). HDI is index that measures average achievement development human to midwife health , education , and standards life worthy , so that No in a way direct measure equality income society . With thus , the changes ratio like this No and immediately followed by changes HDI value because second indicator the measure aspect different development .

Research result This in line with research conducted by (Pramudita , 2023), which states that ratio like this No influential significant to index development human . Research the more explain that the HDI is higher reflects the average achievement education , health , and standards life worthy . Findings the support results study this , where the ratio like this No capable influence Human Development Index (HDI) in eight districts / cities in Banten Province during 2019-2023 period .

4.2.4 The Effect of Unemployment on the Human Development Index (HDI) with Zakat as a Moderating Variable

Based on the results of *the Moderated Regression Analysis* (MRA) test which have been done , variable interaction between unemployment (X1) and zakat (Z) have mark probability of 0.8476. value This more big from level significance namely 0.05 (0.8476 > 0.05), so that mark This show that zakat is not capable moderate influence unemployment to Human Development Index (HDI) in eight districts / cities in Banten Province . With Thus , the hypothesis fourth (H4) which states that zakat is capable moderate influence unemployment to The Human Development Index (HDI) was rejected .

Although in a way theoretically zakat has potential For moderate influence unemployment to Human Development Index , however results study This show that zakat is not capable play a role as variables moderation . Conditions the indicates that distribution of

zakat in Banten Province during period study Not yet Enough strong For reduce impact unemployment to development human beings . This is caused by the utilization of zakat that has not been fully directed on productive programs that are oriented towards increasing skills , creation chance work , and improve independence economy society (Beik & Arsyianti , 2016). In Islamic economics , zakat has potential For create opportunity Work through business capital , training skills , as well as development economy productive (Ikhwan, 2023).

One of possibilities that can explain findings the is that the impact of zakat on development man need mechanism adequate distribution and coverage of programs so that they can influence condition social economy at the regional level . In other words, the existence of zakat funds in general aggregate Not yet Of course in a way direct change connection between unemployment and HDI if its utilization Not yet produce enough change big on aspects education , health , and standard life public .

This result in line with research conducted by (Khafifa et al, 2026) shows that zakat is not capable moderate Unemployment and poverty in West Nusa Tenggara Province . Research the explain that the effectiveness of zakat as variables Moderation is greatly influenced by the optimal management and utilization of zakat. Research the support results study this , where zakat has not been capable moderate influence unemployment to Human Development Index (HDI) in Banten Province .

4.2.5 The Influence of Poverty on the Human Development Index (HDI) with Zakat as a Moderating Variable

Based on the results of *the Moderated Regression Analysis* (MRA) test which have been done , variable interaction between poverty (X2) and zakat (Z) have mark probability of 0.4166. value This more big from level significance namely 0.05 (0.4166 > 0.05), so that mark This show that zakat is not capable moderate influence poverty to Human Development Index (HDI) in eight districts / cities in Banten Province . With Thus , the hypothesis fifth (H5) which states that zakat is capable moderate influence poverty to The Human Development Index (HDI) was rejected .

Although in a way theoretically zakat has potential For moderate influence poverty to Human Development Index (HDI), results study This show that zakat has not been capable play a role as variables moderation . Conditions This indicates that utilization of zakat during period study Not yet capable reduce impact poverty to development

man optimally . According to (Beik & Arsyanti , 2016) one of the possibility the cause is utilization of zakat that has not been fully directed at empowerment programs an economy oriented towards increasing capacity and independence mustahik , so that the impact to improvement quality education , health , standards life worthy public Not yet seen in a way significant .

Research result This in line with research conducted by (Khafifa et.al, 2026) which shows that zakat is not capable moderate connection poverty in West Nusa Tenggara Province . Research the explain that the effectiveness of zakat as variables moderation No only determined by the amount of zakat funds collected , but is also influenced by management , distribution , and optimization of empowerment programs mustahik . Findings the support results study this , where zakat has not been capable moderate influence poverty to Human Development Index (HDI) in Banten Province .

4.2.6 The Effect of the Gini Ratio on the Human Development Index (HDI) with Zakat as a Moderating Variable

Based on the results of *the Moderated Regression Analysis* (MRA) test which have been done , variable interaction between ratio gini (X3) and zakat (Z) have mark probability of 0.1458. value This more big from level significance namely 0.05 (0.1458 > 0.05), so that mark This show that zakat is not capable moderate influence ratio like this to Human Development Index (HDI) in eight districts / cities in Banten Province . With Thus , the hypothesis sixth (H6) which states that zakat is capable moderate influence ratio like this to The Human Development Index (HDI) was rejected .

Although in a way theoretically zakat has potential For moderate influence ratio like this to Human Development Index (HDI), results study This show that zakat has not been capable play a role as variables moderation . Conditions This indicates that distribution of zakat during period study Not yet capable reduce impact inequality income to development man optimally . One of the possibility the cause is better utilization of zakat focused on fulfillment need base mustahik compared to with effort reduce gap income in a way comprehensive . As a result , the existence of zakat has not been capable weaken connection between ratio Gini and Human Development Index (HDI) in eight districts / cities in Banten Province . In addition , changes The Human Development Index is also influenced by various factors . other factors , such as improvement quality education , health , and policy development area , so that the

influence of zakat as variables moderation Not yet seen in a way significant in connection between ratio like this to Human Development Index (HDI).

Insignificance effect moderation the can caused by several possibility . One of them is that the impact of zakat on inequality income and development man need coverage as well as intensity adequate distribution big For produce changes at the regional level . In addition , development man No only influenced by distribution income , but also by various other factors , such as access and quality education , services health , as well as policy development area . Therefore that , the existence of zakat has not show effect significant moderation in connection between Gini Ratio and HDI in study This .

Research result This in line with research conducted by (Saadah and Zuhri, 2024) which shows that Zakat, Infaq and Alms (ZIS) are not capable moderate influence ratio like this to level poverty in Indonesia. Research the explain that the effectiveness of ZIS as variables moderation influenced by management , coverage , and optimization distribution so that Not yet capable weaken impact inequality income in a way significant . Research the support results study this , where zakat has not been capable moderate influence ratio like this to Human Development Index (HDI) in eight districts / cities in Banten Province .

5. Conclusion and Suggestions

5.1. Conclusion

This study aims to analyze the influence of unemployment, poverty, and the Gini ratio on the Human Development Index (HDI), with zakat as a moderating variable in eight districts /cities in Banten Province for the period 2019–2023. Based on the results of panel data regression analysis using *the Fixed Effect Model* (FEM) and the *Moderated Regression Analysis* (MRA) test, the following conclusions can be drawn:

1. Unemployment No influential significant to Human Development Index (HDI).
2. Poverty influential positive significant to Human Development Index (HDI). The results show existence connection positive between level poverty and HDI in the research area . Findings This different with relationship that is theoretical expected , so that show existence other factors that can influence connection between poverty and HDI.
3. Inequality income (Gini Ratio) no influential significant to Human Development Index (HDI).

4. Zakat does not capable moderate influence unemployment to Human Development Index (HDI).
5. Zakat does not capable moderate influence poverty to Human Development Index (HDI).
6. Zakat does not capable moderate influence ratio like this to Human Development Index (HDI).

5.2. Suggestion

1. For the Banten Provincial Government and Districts/Cities in Banten
   a. Prioritize poverty alleviation programs poverty as the main strategy increase in HDI.
   b. Strengthen infrastructure education and health especially in the area left behind like Pandeglang and Lebak.
   c. Push creation field Work quality and improvement skills power Work young .
2. For Zakat Management Institutions (BAZNAS and LAZ)
   a. Increase productive zakat portion compared to consumptive zakat
   b. Increase coordination with government regions so that the ZIS program is in line with development targets areas , especially in the sector health and education
   c. Expand coverage recipients of zakat agar agar the impact more felt at the regional level , not only in groups small mustahik .
3. For the Community and *Stakeholders*
   a. Increase participation in payment of zakat through institution officially so that the collected ZIS funds more big , reliable , and can distributed in a way structured For development man .
   b. Push culture Islamic *philanthropy that is* oriented towards empowerment , not solely help a moment .
4. For Further Research
   a. Use variables addition like shopping education , shopping health , numbers blind letters , or index multidimensional poverty that may more sensitive to changes in the HDI.
   b. Add productive and consumptive zakat variables in a way separate , because type distribution This own different impacts to development man .

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