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The Effects of ZIS, Poverty, and Unemployment Rates on the Human Development Index in West Java (Before and During the COVID-19 Pandemic, 2018–2022)

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Abstract: This study aims to analyze the effect of Zakat, Infak, and Sedekah (ZIS), poverty, and unemployment rates on the Human Development Index (HDI) before and during the COVID-19 pandemic from 2018 to 2022 using panel data from 27 districts in West Java. The research method used in this study is quantitative with a Fixed Effect Model (FEM) panel data regression analysis method using secondary data obtained from the Central Statistics Agency (BPS) and the National Zakat Agency (BAZNAS). The results of this study indicate that ZIS has a positive and significant effect on the Human Development Index in West Java. In addition, poverty and unemployment rates have a negative and significant effect on the HDI. Furthermore, the COVID-19 dummy variable shows a difference in HDI achievement between the pre-pandemic and pandemic periods. The results of this study are expected to serve as a reference for local governments and policy makers in formulating strategies to improve human development through the optimization of ZIS and the control of poverty and unemployment, so that the HDI in West Java can increase sustainably.

Keywords: ZIS; Human Development Index; Poverty; unemployment

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INTRODUCTION

Improving public welfare is one of the primary development goals pursued by various countries, including Indonesia. According to the Central Statistics Agency, the Human Development Index (HDI) is an indicator used to measure the quality of human life. The three main dimensions that make up the HDI are health, education, and a decent standard of living. These three fundamental dimensions aim to improve welfare and human development. In 2022, West Java ranked 10th out of 34 provinces in Indonesia with an HDI of 73.12, while the top rank was held by DKI Jakarta with a score of 81.65. Although there is a difference of 8.53 points, West Java's HDI score is still considered quite high (BPS). The HDI statistics for West Java from 2018 to 2022, released by the Central Statistics Agency (BPS), are as follows:

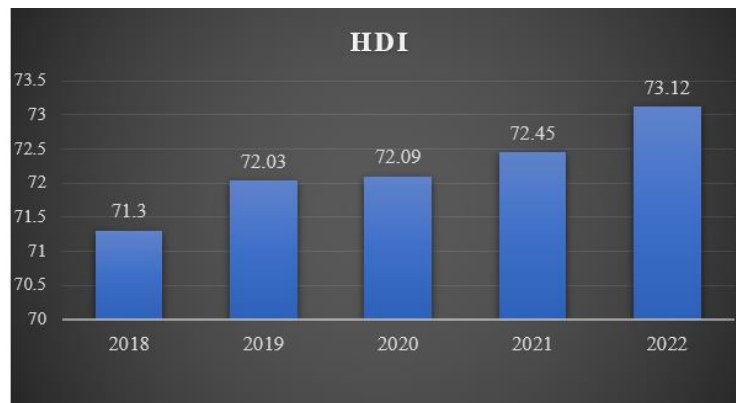


Figure 1. Human Development Index in West Java

Source: West Java Bps (2022)

From the data depicted in the graph, it can be concluded that between 2018 and 2022, the Human Development Index (HDI) in West Java increased every year. This reflects the alignment of the government's efforts to improve public welfare with the established development goals (Bahriyah et al., 2020). Nevertheless, upon closer examination, disparities in the Human Development Index (HDI) still exist among regions within West Java Province, indicating that human development has not been evenly distributed. However, the government continues to strive to sustain this positive progress in order to provide sustainable impact on the community's well-being. These efforts include improving access to health and education services, economic empowerment, and enhancing social infrastructure to support HDI growth across all regions of West Java. West Java Province has the largest Muslim population in Indonesia. According to the Central Statistics Agency, 97.22% of the population in West Java is Muslim, which means West Java has great potential for the distribution of *zakat*, *infaq*, and *sadaqah*. The increase in the distribution of *zakat*, *infaq*, and *sadaqah* funds from 2018 through the end of 2022 is as follows:

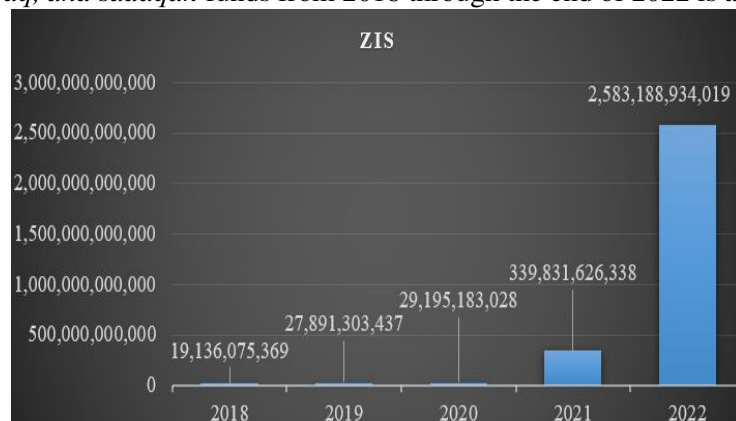


Figure 2. Zakat, Infaq, and Sedekah in West Java, 2018–2022

Source: Baznaz West Java (2022)

Based on the data presented, it can be concluded that *zakat*, *infak*, and *sedekah* have continued to increase annually, reaching 2,583,188,934,019 rupiah in 2022. These funds were channeled into various Baznas programs namely, Economy, Education, Health, Humanitarian Aid, and Da'wah and Advocacy aimed at improving community welfare (BAZNAS, 2022). In addition to health and education factors that influence the Human Development Index (HDI), poverty is also believed to affect the HDI. Poverty can hinder a person's educational attainment and affect their health, which in turn leads to a decline in the quality of human resources (Saputro, 2022). HDI growth is measured by levels of health and education. Based on statistical data released by the West Java Central Statistics Agency (BPS), the following are poverty figures for West Java:

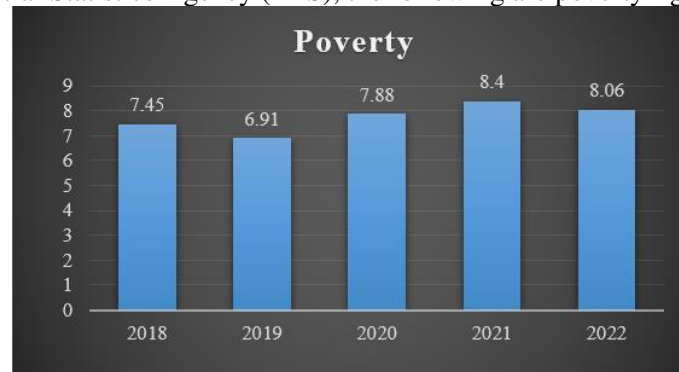


Figure 3. Poverty in West Java, 2018–2022

Source: West Java BPS (2022)

It can be seen that in 2018, the percentage of the poor population in West Java reached 7.45%. This figure decreased in 2019 to 6.91%, but rose again in 2020 to 7.88%. The peak increase occurred in 2021, with the percentage reaching 8.4%, before finally declining slightly to 8.06% in 2022. Therefore, poverty in a region is a fundamental aspect of promoting human development. This aspect involves not only economic dimensions but must also be viewed from a social perspective. One of the top priorities in human development is improving efficiency in enhancing the quality of life for the community. If poverty in a region continues to rise each year, this will impact the growth of the Human Development Index (HDI). The Human Development Index is also believed to be influenced by unemployment. Based on West Java unemployment data released by the Central Statistics Agency:

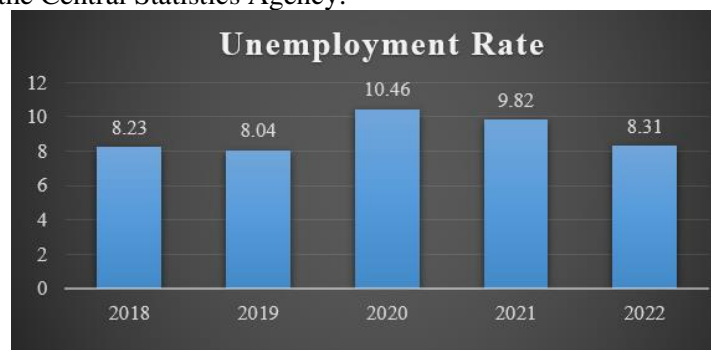


Figure 4. Unemployment Rates in West Java, 2018–2022

Source: West Java BPS (2022)

It can be concluded from the figure that the unemployment rate rose to 8.31% in 2022 from 8.23% in 2018. This increase was caused by the pandemic, which impacted people's incomes, leading to a decline in purchasing power and difficulties in meeting basic needs such as education and health care—factors that play a crucial role in improving the quality of human life. Therefore, a high unemployment rate will hinder the achievement of public prosperity and well-being, which are the primary goals of economic development (Si'lang et al., 2019). Among previous studies relevant to the factors influencing the HDI is the research by Mokodenseho et al. (2024), which

examined the impact of the effectiveness of zakat management and the transparency of zakat fund usage on improving community welfare and empowerment in Central Java. Lestari (2023) analyzed the influence of the distribution of zakat, infak, and sedekah funds, the provincial minimum wage, and poverty on the HDI in Indonesia. Masruron (2022) examined the impact of poverty and unemployment on the HDI in West Nusa Tenggara Province from 2011 to 2020. Meanwhile, Bahriyah and Primandhana (2022) analyzed the impact of unemployment rates, poverty, and economic growth on the HDI in Gresik Regency. Finally, Syaputro (2022) analyzed the factors influencing the HDI in Central Java from 2017 to 2020. The author chose West Java Province as the focus of this study because West Java is the province with the largest population in Indonesia, reaching more than 49 million people in 2022 (BPS, 2022). Furthermore, the period from 2018 to 2022 encompasses the phase before and during the COVID-19 pandemic, which allows the author to analyze how factors such as ZIS, poverty, and unemployment influence the Human Development Index (HDI) in the context of a global crisis. Moreover, selecting this period allows for the use of the most recent available data, so that the research results can provide the most up-to-date picture of the state of human development in West Java. Based on a review of the literature and various previous studies, no research has yet used ZIS, poverty, and unemployment simultaneously as independent variables. Therefore, the author felt it necessary to investigate the influence of these three variables on the Human Development Index in West Java Province. This study covers regencies and cities in West Java over the period 2018–2022.

LITERATURE REVIEW

Human Development Theory

Human Development Theory is a development approach that emphasizes that the primary goal of development is to improve the quality of human life. This concept was introduced by the United Nations Development Program (UNDP) through the 1990 Human Development Report as a response to the previous development paradigm, which placed greater emphasis on economic growth alone (UNDP, 1990). In this concept, development is viewed as a process to expand the life choices available to people. These choices are fundamentally very broad and can evolve over time; however, there are several primary goals of human development, namely:

1. Improving opportunities for a long and healthy life: Development aims to ensure that people enjoy good health and a high life expectancy.
2. Improving access to education and knowledge Every individual is expected to have the opportunity to receive a proper education to improve the quality of human resources.
3. Improving a decent standard of living: Society has the ability to meet its basic needs through access to economic resources.

Furthermore, human development is not limited to meeting basic needs but also encompasses broader aspects such as social, economic, and political freedoms, as well as opportunities for individuals to develop productively and creatively. This demonstrates that human beings cannot be viewed merely as economic beings, but rather as individuals with various dimensions of life that need to be developed (UNDP, 1990).

Thus, human development places people at the center of the development process. Income or economic growth, in this context, is viewed as a means, not an end in itself. Therefore, the success of development is not measured solely by high economic growth, but by the extent to which such development is able to expand life choices and improve the overall quality of human life (UNDP, 1990). To measure the level of human development, the Human Development Index (HDI) is used, which reflects the quality of life of a society through three main dimensions: health, education, and a decent standard of living.

Maqashid al-Sharia

Maqashid al-Sharia is a concept in Islamic economics that explains the primary purpose of Islamic law, namely to achieve human *maslahah* (well-being). This concept was developed by Abu Ishaq al-Shatibi, who stated that every law in Islam aims to safeguard and protect fundamental aspects of human life (Al-Shatibi, 2003).

In the theory of Maqashid al-Sharia, human welfare is achieved through the protection of five main aspects of life known as al-kulliyat al-khamsah (Al-Shatibi, 2003), namely:

a) Preserving religion (hifz ad-din)

Aims to guarantee individual freedom in practicing one's faith and to uphold moral values in society (Al-Shatibi, 2003).

b) Preserving life (hifz an-nafs)

Relates to the protection of human life, including the fulfillment of basic needs such as health and safety

c) Preserving reason (hifz al-'aql).

Aims to improve the quality of human resources through education and intellectual development

d) Preserving the lineage (hifz an-nasl).

Relates to generational continuity and social stability

e) Preserving property (hifz al-mal).

Aims to protect property rights and ensure a fair distribution of wealth.

Furthermore, the maqashid of Sharia also encompass a hierarchy of needs comprising dharuriyat, hajiyat, and tahsiniyat, which reflect levels of human well-being (Al-Shatibi, 2003).

In the context of human development, the maqashid of Sharia are linked to the Human Development Index (HDI), where the dimensions of health, education, and standard of living reflect the objectives of safeguarding life, intellect, and property. This demonstrates that the maqashid of Sharia align with the concept of modern human development.

Thus, the maqashid al-sharia place human well-being as the primary goal of development, where the success of development is measured not only by economic growth but also by the ability to improve the overall quality of life for society.

Human Development Index

Human development encompasses various approaches that emphasize the importance of improving the quality of life for individuals and society, not merely economic growth alone. Todaro & Smith (2012) explain that the development paradigm prior to 1970 focused solely on economic aspects such as income, capital, and economic growth. However, even though some countries experienced high economic growth, they still faced social problems such as unemployment and poverty. This demonstrates that high economic growth does not always guarantee social welfare for society. Therefore, other areas must be balanced to ensure the social well-being of society. This aligns with the UNDP's statement that other areas are necessary to achieve social well-being. Additionally, the UNDP explains the concept of human development.

The concept of human development was introduced by the UNDP through its report published in 1990. The original concept which focused solely on economic aspects—has expanded to include social aspects. From a human development perspective, the goal of development is to create a comfortable environment for society—one that supports people in enjoying long, healthy, and productive lives (UNDP, 1990). According to the UNDP, the Human Development Index (HDI) measures human development achievements based on several fundamental components of quality of life. The HDI is constructed using a three-dimensional approach: a long and healthy life, knowledge, and a decent standard of living. Each of these dimensions encompasses a wide range of factors. To measure the dimension of a long and healthy life, the life expectancy at birth indicator is used. The knowledge dimension is measured through a combination of the expected years of schooling and the average years of schooling indicators. Meanwhile, the decent standard of living dimension is measured through the purchasing power indicator, represented by the average real per capita expenditure, as an income-based approach that reflects development achievements in terms of a decent standard of living.

Zakat, Infak, and Sedekah

Zakat, Infak, and Sedekah (ZIS): Zakat is one of the pillars of Islam that plays a vital role in improving the welfare of society. According to Hafidhuddin (2002), zakat is wealth that every

Muslim whose assets exceed a certain threshold (nisab) is obligated to distribute to mustahik (zakat recipients) under specific conditions. Meanwhile, infak and sedekah are voluntary donations encouraged in Islam. Meanwhile, according to Law No. 23 of 2011 on Zakat Management, infak refers to assets contributed by an individual or business entity outside of zakat for the benefit of the Muslim community. According to BAZNAS Regulation No. 2 of 2016, sedekah is any asset or non-asset contribution made by an individual or business entity outside of zakat for the public good. Furthermore, the potential of ZIS is enormous, and when managed properly, ZIS can make a significant contribution to human development. (Rehman & Pickup, 2018) from the UNDP state that Islamic social finance, which includes Zakat, Infak, and Sedekah, has great potential to support the achievement of the Sustainable Development Goals (SDGs). ZIS funds can help bridge the funding gap—estimated at USD 2.5 trillion—needed to achieve global development goals, including human development goals.

With regard to the Human Development Index (HDI), ZIS plays a crucial role in enhancing the three main dimensions of human development: health, education, and standard of living. Funds raised through ZIS are often allocated to health programs—such as providing health services to vulnerable groups—as well as educational programs aimed at improving the quality of human resources. Empowering beneficiaries through skills training also contributes to increased productivity and income, which ultimately has a positive impact on raising living standards. Thus, ZIS is closely linked to improvements in the HDI.

For example, research by BA-ZNAS (2019) shows that zakat funds channeled to education programs have successfully increased school enrollment rates among mustahik communities, while zakat health programs have contributed to improved access to health services for low-income families. This has a direct impact on improvements in the education and health dimensions of the Human Development Index (HDI).

Thus, sound management of ZIS funds not only serves to alleviate poverty but also improves quality of life, as reflected in the rise of the Human Development Index in Indonesia. Conceptually, therefore, the impact of Zakat, Infak, and Sedekah (ZIS) on the Human Development Index (HDI) occurs through improvements in the quality of life—including education, health, and living standards. However, in empirical research, this relationship is often analyzed directly without including mediating variables. Therefore, this study focuses on the direct effect of ZIS on the HDI as a form of model simplification.

Poverty

According to BPS (2023), poverty is a condition in which individuals or groups are unable to meet their basic needs to lead and develop a decent life. The poor are those whose average per capita monthly expenditure falls below the poverty line. Nurkse (1952), as cited in (Amalia et al., 2022), proposed the theory of the “vicious circle of poverty,” explaining that many development failures occurring in various countries are caused by the society or the country itself being trapped in this vicious circle of poverty. The following figure illustrates the vicious circle of poverty:

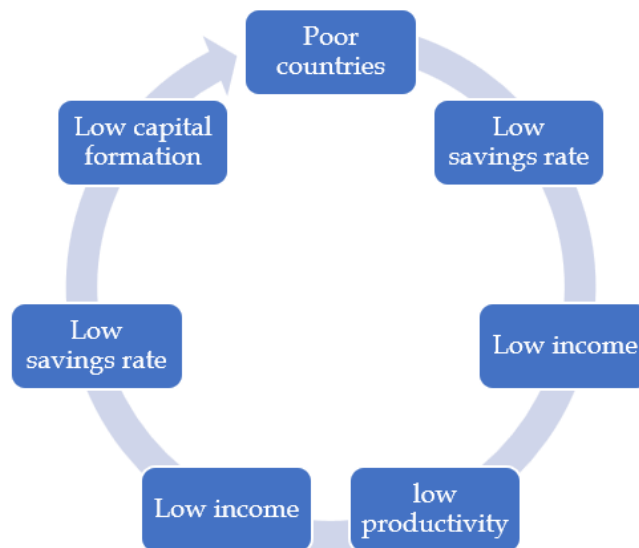


Figure 5. The Theory of the Vicious Circle of Poverty

Source: Nurkse (1952) in Amalia et al. (2022)

This cycle of poverty continues, beginning with poor countries or the populations of poor countries who are still struggling to meet their basic needs or spend their income on consumption, resulting in very low savings rates. The accumulation of low savings rates among the population leads to low overall income as well. From a business perspective, a lack of sufficient capital leads to low productivity. Low productivity or low production levels result in low income. Income spent on consumption is insufficient for savings, leading to a low savings rate. One source of capital formation is the savings rate. If savings are low, capital formation will also be low. Therefore, one of the main causes of poverty is limited access to education and healthcare. A lack of education leaves individuals without the skills needed to compete in the labor market, while poor health can reduce a person's productivity and ability to work (Akhmad, 2021).

Unemployment Rate

According to the Central Statistics Agency (BPS), unemployment is defined as that portion of the labor force that is not working but is actively seeking employment or preparing to start a new business. Unemployment encompasses several categories, including open unemployment, which refers to individuals who are actively seeking work but have not yet found a job. In addition, there is also underemployment, which refers to individuals who work fewer than full-time hours (typically 35 hours per week) and are still looking for additional work or wish to increase their working hours.

According to Sukirno (2000) as cited in (Zakaria, 2018), unemployment can be classified into several types based on its causes. First, structural unemployment occurs due to structural changes in the economy, such as a shift from the agricultural sector to the industrial sector. Second, frictional or normal unemployment, caused by conditions of full employment, where individuals are temporarily unemployed while transitioning from one job to another. Third, technological unemployment is caused by rapid technological advancements that render certain jobs obsolete and lead to workers being replaced by machines. Fourth, cyclical unemployment results from changes in government policies that affect the economic cycle, such as fiscal or monetary policies that lead to a decline in aggregate demand and an increase in the unemployment rate.

According to Todaro (2000) as cited in Mahroji & Nurkhasanah (2019), high unemployment rates have a significant impact on human development. High unemployment leads to a decline in household income, which ultimately limits access to education and health services. This

situation hinders improvements in the quality of human capital and reduces individual productivity. The decline in the quality of education, health, and living standards has a direct impact on the Human Development Index (HDI), given that these three aspects are the main dimensions in measuring the HDI.

Zakat, Infak, and Sedekah and the Human Development Index

The results of Makbul's (2019) study indicate that Zakat, Infak, and Sedekah (ZIS) have a positive and significant effect on the improvement of the Human Development Index in 19 Indonesian provinces, a finding also supported by the research of Larasati, D. (2018), which states that Zakat, infak, and sedekah (ZIS) have a significant positive effect on the HDI variable. In contrast to previous findings, Wibowo & Gunaepi (2021) found that Zakat, Infak, and Sedekah (ZIS) do not have a significant effect on the increase in the HDI. Based on previous research, it can be concluded that ZIS has a direct effect on the HDI. Therefore, the researchers propose the hypothesis that zakat, infak, and sedekah have a significant effect on increasing the Human Development Index (HDI). Thus, the hypothesis proposed by the researchers is:

H1: Zakat, infaq, and sadaqah have a significant positive effect on the Human Development Index (HDI).

Poverty and the Human Development Index

Research conducted by Zakaria (2023) shows that poverty has a significant negative effect on the Human Development Index (HDI). Similar findings were also reported by Lestari (2023), who found that poverty significantly affects the HDI. This indicates that an increase in poverty will result in a decrease in the HDI, while a decrease in poverty will lead to an increase in the HDI. Based on these findings, the researcher proposes the following hypothesis: H2: Poverty has a significant negative effect on the Human Development Index (HDI).

Unemployment Rate and the Human Development Index

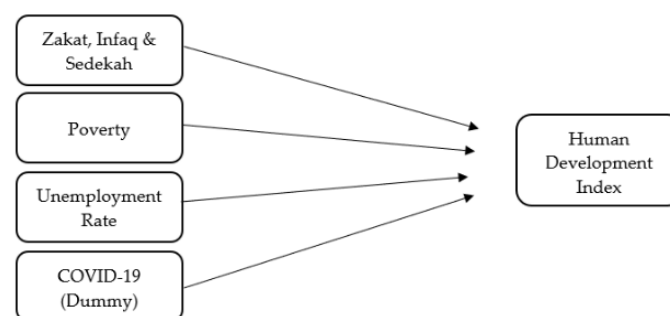
Based on research conducted by Ningrum et al. (2020), it was shown that the unemployment rate variable has a significant effect on the Human Development Index (HDI). In line with this, research by Masruron, M. (2022) states that unemployment has a significant negative effect on the Human Development Index in West Nusa Tenggara Province from 2011 to 2020. This means that the higher the unemployment rate, the lower the HDI will be, and conversely, if the unemployment rate is low, the HDI will increase. Based on these findings, the researcher proposes the following hypotheses:

H3: Unemployment has a significant negative effect on the Human Development Index (HDI).

Research Framework

Based on the above description, the Human Development Index (dependent variable) is influenced by zakat, infaq, and sadaqah (ZIS), poverty, and unemployment (independent variables). Thus, the following research framework was developed:

Gam Figure 6. Research Framework



Source: Author (2024)

RESEARCH METHOD

Research Population

The population used in this study consists of the distribution of zakat, infaq, and sadaqah (ZIS) by BAZNAS in West Java Province, as well as poverty and unemployment rates across 27 regions in West Java over a five-year period (2018 to 2022). All data used are annual data; therefore, the study population comprises 135 observations

Types and Sources of Data

The data used in this study is secondary data. The data sources used come from various published reports by government agencies, such as Human Development Index (HDI) data, poverty data, and unemployment data obtained from the Central Statistics Agency (BPS). Data on the distribution of Zakat, Infak, and Sedekah (ZIS) funds were obtained from the financial reports of the National Zakat Agency (BAZNAS) of West Java Province. The data collection techniques used in this study involved documentation and literature review.

Analysis Method

To determine whether there is an effect of the independent variables on the dependent variable, the following panel data regression model was used:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 D_COVID + e_{it}$$

Notes:

Y = West Java Human Development Index

$\beta_{1,2,3}$ = Regression Coefficient

X1 = ZIS distribution

X2 = Poverty Rate

X3 = Open Unemployment Rate D_COVID = COVID-19 pandemic dummy variable

i = West Java province

In panel data regression models, three modeling approaches can be used: the Random Effects Model (REM), the Fixed Effects Model (FEM), and the Common Effects Model (CEM) (Priyatno, 2023).

a) Common Effect Model (CEM)

The Common Effect Model combines cross-sectional and time-series data, then applies the Ordinary Least Squares (OLS) method to the panel data. This approach allows us to observe differences between individuals and differences over time because the intercept and slope are the same. This model does not account for differences characteristics (Priyatno, 2023).

b) Fixed Effects Model (FEM)

This model has an intercept that may vary across individuals and over time, while each cross-sectional unit remains constant across time series. This model has limitations, such as a loss of degrees of freedom due to a limited sample size and the presence of multicollinearity caused by the large number of dummy variables being estimated (Priyatno, 2023).

c) Random Effects Model (REM)

The Random Effects Model (REM) is similar to the previous Fixed Effects Model (FEM) in that it incorporates both individual and time dimensions into its analysis. However, the main difference lies in the estimation of the error term, where this model assumes that the error term is associated with both the individual and time dimensions (Priyatno, 2023).

Estimation Test

a. Chow Test

The Chow test aims to determine whether the model should use Ordinary Least Squares (OLS) or the Fixed Effects Model (FEM), with the following hypotheses:

H0: OLS model

H1: FEM model

If the p-value is < 0.05 , then H_0 is rejected and H_1 is accepted, so the selected model is the FEM

b. Hausman Test

The Hausman test is the next step in selecting a regression model for panel data. This procedure is applied when the results of the Chow test indicate an advantage for the Fixed Effects model. In the Hausman test, the study will determine which model is more appropriate: Fixed Effects or Random Effects based on the following hypotheses:

H_0 : Random Effects Model

H_1 : Fixed Effects Model

If the p-value is < 0.05 , then H_0 is rejected and H_1 is accepted, so the selected model is the Random Effects Model (FEM).

c. Lagrange Multiplier Test

The Lagrange Multiplier Test is conducted after the Chow Test indicates a common effect or the Hausman test indicates a random effect. This test aims to determine the most appropriate estimation model, namely whether to use the Common Effects Model (CEM) or the Random Effects Model (REM). In the Lagrange Multiplier Test, attention is focused on the probability value of the cross-sectional random effect. The hypotheses being tested are as follows:

H_0 : Choose the Common Effect Model (CEM) H_1 : Choose the Random Effect Model (REM)

If the probability value is < 0.05 , then H_0 is rejected and H_1 is accepted, so the selected model is the REM.

Classical Assumption Test

a. Multicollinearity Test

Multicollinearity is a condition in regression analysis where there is a strong linear relationship among the independent variables. This makes it difficult to identify the effect of each independent variable on the dependent variable. To detect multicollinearity, the Variance Inflation Factor (VIF) is used. If the VIF value is less than 10, it is considered that there are no serious multicollinearity issues in the model.

b. Heteroscedasticity Test

Heteroscedasticity is a condition of unequal residual variances in a regression model. To test for heteroscedasticity, one method is the Glejser Test, which regresses the absolute values of the residuals against the independent variables. If the Prob chi-square(2) value in the R-Squared Obs column is greater than 0.05, the null hypothesis is accepted, meaning there is no heteroscedasticity issue in the regression model.

Hypothesis testing

In this study also involved hypothesis testing to assess the extent to which the model fits the data, and a test of the coefficient of determination (R^2) to measure the extent to which the model can explain the variation in the dependent variable while considering the independent variables simultaneously (Priyatno, 2023). Finally, a t-test was conducted to measure the partial effect of the independent variables on the dependent variable in the context of this study.

ANALYSIS RESULTS

Chow Test

To determine the appropriate analytical model, the researcher conducted two tests. The first was the Chow Test to choose between the Common Effects Model and the Fixed Effects Model. The following are the results of the Chow Test conducted by the researcher: Model. The following are the results of the Hausman Test conducted by the researcher:

Table 1. Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	445.66	(26,104)	0.0000

Source: Processed Data, 2024

Based on the results of the Chow Test in the table, the probability value of the Chow Test is 0.0000, which is smaller than the significance level of 0.05; therefore, H1 is accepted and H0 is rejected. Consequently, the Fixed Effects Model is selected as the provisional model. To confirm this result, a second test—the Hausman Test—was conducted to select between the Fixed Effects Model and the Random Effects Model. The following are the results of the Hausman test conducted by the researcher:

Table 2. Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	56.50	3	0.0000

Source: Processed Data, 2024 Based

On the results of the Hausman test in the table, the probability value of the Hausman test is 0.0000. Since this value is smaller than the significance level of 0.05, H1 is accepted and H0 is rejected; therefore, the selected model is the Fixed Effects Model. Based on the results of the Chow Test and the Hausman Test, the selected model is the Fixed Effects Model; therefore, this study does not perform the Lagrange Multiplier Test (Gujarati & Porter, 2009).

Classical Assumption Tests

The selected model is the Fixed Effects Model (FEM). Therefore, tests of classical assumptions must be conducted. According to Basuki (2015), in panel data analysis, an autocorrelation test is not required because panel data are cross-sectional in nature, whereas autocorrelation typically occurs only in time series. Additionally, a normality test is not required because it is not considered a necessary condition. The classical assumption tests used were the Multicollinearity Test and the Heteroscedasticity Test:

1) Multicollinearity Test

The results of the multicollinearity test for the model are as follows:

Table 3. Multicollinearity Test

Variable	VIF	1/VIF
Unemployment	6.39	0.156
Poverty	5.75	0.173
Covid	3.29	0.304
ZIS	1.40	0.714
Mean VIF	4.20	

Source: Processed Data, 2024

Based on the results of the multicollinearity test, it can be concluded that there is no multicollinearity among the independent variables. This is indicated by VIF values that are all below 10, suggesting that there are no significant multicollinearity issues in the model.

2) Heteroskedasticity Test

The calculation for the heteroskedasticity test can be seen in the following table:

Table 4. Heteroscedasticity

Chi2 (27)	155.47
Prob>Chi2	0.00

Source: Processed Data, 2024

Based on the results of the multicollinearity test, it can be concluded that there is no multicollinearity among the independent variables. This is indicated by VIF values that are all below 10, suggesting that there are no significant multicollinearity issues in the model.

Hypothesis Test Results

After re-estimation using robust standard errors, the following results were obtained:

Table 5. Results of the Fixed-Effects

ipm	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]
zis	4.47	1.57	2.85	0.008	1.25	7.69
Poverty	-.315	.069	-4.51	0.000	-0.459	-0.172
Unemployment	-.076	.031	-2.40	0.024	-0.142	-0.011
Covid	1.046	.125	8.35	0.000	0.789	1.304
Constant	74.294	.683	108.73	0.000	72.889	75.699
R-squared		0.7126	Number of obs			135
F-statistic		66.19	Prob > F			0.000

Source: Processed Data, 2024

F-Test Results

Based on the F-test results in the table above, the F-statistic is 66.19 with a Prob > F value of $0.000 < 0.05$. This indicates that the independent variables (ZIS, poverty, unemployment, and COVID) have a significant simultaneous effect on the dependent variable, namely the Human Development Index (HDI) in West Java for the 2018–2022 period.

T-Test Results

Based on the t-test results in the table, the partial effects of the independent variables on the dependent variable are as follows:

a) The Effect of ZIS on the Human Development Index (HDI)

The results of the t-test for the ZIS variable show a t-statistic of $2.85 > 1.978$ (table t) and a probability value of $0.008 < 0.05$. This indicates that, partially, the ZIS variable has a significant effect on the Human Development Index (HDI) in West Java for the 2018–2022 period. This indicates that the distribution of ZIS funds plays a crucial role in improving the quality of human development.

b) The Effect of Poverty on the Human Development Index (HDI)

The results of the t-test on the poverty variable show a t-statistic of $-4.51 < -1.978$ (table t-value) and a p-value of $0.000 < 0.05$. This indicates that, partially, the poverty variable has a significant effect on the Human Development Index (HDI) in West Java for the 2018–2022 period. This suggests that lower poverty levels will contribute positively to an increase in the HDI.

c) The Effect of the Unemployment Rate on the Human Development Index (HDI)

The results of the t-test for the unemployment variable show a t-statistic of $-2.40 < -1.978$ (table t) and a p-value of $0.024 < 0.05$. This indicates that, in part, the unemployment has a significant effect on the Human Development Index (HDI)

d) The Effect of the Unemployment Rate on the Human Development Index (HDI)

The results of the t-test on the unemployment variable show a t-statistic of $-2.40 < -1.978$ (t-table) and a probability value of $0.024 < 0.05$. This indicates that, in part, the unemployment variable has a significant effect on the Human Development Index (HDI) in West Java for the 2018–2022 period. This suggests that a decrease in the unemployment rate can improve the quality of human development.

e) **The Impact of COVID-19 on the Human Development Index (HDI)**

The results of the t-test for the COVID variable show a t-statistic of $8.35 > 1.978$ (table t-value) and a probability value of $0.000 < 0.05$. This indicates that, partially, the COVID variable has a significant effect on the Human Development Index (HDI) in West Java for the 2018–2022 period. This indicates that the pandemic

Results of the Coefficient of Determination (R^2) Test

Based on the results of the Coefficient of Determination Test in the table above, the R-squared value of 0.7126 indicates that the independent variables account for 71% of the variation in the dependent variable, while the remaining 29% is explained by other variables not included in the research model.

DISCUSSION

Research results show that the variables *Zakat, Infak, and Sedekah* (ZIS), poverty, the unemployment rate, and the COVID-19 dummy variable have an effect on the Human Development Index (HDI) in West Java from 2018 to 2022. Based on the results, the coefficient of determination, the adjusted R-squared value of 0.71 indicates that the ZIS variables, poverty, unemployment rate, and the COVID-19 dummy variable collectively account for 71% of the variation in the HDI in West Java, while the remaining 29% is explained by other variables outside the scope of this study. This indicates that changes in the HDI in West Java are influenced by a combination of social and economic factors simultaneously. According to the UNDP (2023), human development is influenced by the dimensions of health, education, and a decent standard of living. In this study, ZIS plays a role in improving the quality of life of the community through assistance in education, health, and economic empowerment. Meanwhile, poverty and unemployment affect the community's ability to meet basic needs and improve their standard of living. Additionally, the COVID-19 pandemic has also impacted the social and economic conditions of the community, which in turn affects the development of the HDI in West Java.

The Effect of ZIS on the Human Development Index

Based on the results of the t-test, a value of $2.85 > 1.978$ (t-table) was obtained, along with a probability value of $0.008 < 0.05$. This proves that, partially, the ZIS variable has a significant effect on the Human Development Index (HDI) in West Java. Furthermore, the results of the F-test indicate that, simultaneously, ZIS also influences the HDI in West Java. Based on the regression analysis, ZIS has a positive effect on the HDI, indicating that the higher the distribution of ZIS funds, the higher the HDI value in West Java.

The research findings indicate that ZIS has a significant and positive impact on the HDI. Therefore, the distribution of ZIS funds will have a positive impact on improving the HDI in West Java. This is because ZIS funds collected by zakat management institutions such as BAZNAS are distributed to the community through various education, health, and economic empowerment programs. This is supported by the distribution of ZIS funds by BAZNAS West Java to various programs such as education, health, the economy, humanitarian aid, as well as da'wah and advocacy, with total distributions reaching Rp39.22 billion in 2022 (BAZNAS West Java, 2022). Programs related to the HDI dimensions are implemented through the "Jabar Cerdas," "Jabar Sehat," and economic empowerment programs for mustahik. In the economic sector, BAZNAS West Java also distributed funds amounting to Rp1.179 billion through the "Mustahik to Pengusaha" (MtoP) and "Mustahik to Muzaki" (MtoM) programs, assistance for pesantren cooperatives, and economic training as efforts to improve community welfare (BAZNAS West Java, 2022). The distribution of these funds helps the community gain access to education, health services, and increased

income, thereby improving their quality of life and contributing to advancements in the dimensions of education, health, and a decent standard of living, which are key indicators of the Human Development Index (HDI).

In the field of education, ZIS funds are channeled through the “Jabar Cerdas” program, which provides assistance with school fees, scholarships, educational supplies, training, and mentoring to underprivileged communities. This program helps improve community access to education, thereby giving people the opportunity to receive a more adequate education. Additionally, the training and mentoring provided also help improve the quality of human resources among the beneficiary communities. This improvement in educational quality is reflected in the increase in average years of schooling and expected years of schooling, which are indicators in the HDI (BAZNAS West Java, 2022).

Furthermore, in the health sector, ZIS funds are also channeled through the “Jabar Sehat” program, which aims to provide health assistance to the poor so they can live healthier and more prosperous lives. This program is implemented through shelter services, free ambulances, basic health services, and education on healthy lifestyles for the beneficiary communities. This assistance helps the community gain better access to healthcare, thereby improving their health status and life expectancy. Improved public health will lead to an improvement in the health dimension of the Human Development Index (BAZNAS West Java, 2022).

Furthermore, ZIS funds are also channeled through economic empowerment programs such as the “Mustahik to Entrepreneur” (MtoP) and “Mustahik to Muzaki” (MtoM) initiatives. These programs aim to help beneficiaries generate new income through business assistance and economic empowerment, enabling them to escape poverty. Additionally, these programs help boost community productivity and income, thereby increasing purchasing power. As income and purchasing power rise, living standards also improve. This improvement in living standards is a key component in raising the Human Development Index (HDI) value (BAZNAS West Java, 2022).

This is further supported by data from BAZNAS West Java, which shows that the distribution of ZIS funds is divided into five major programs: economy, education, health, humanitarian aid, and da’wah and advocacy. These programs are linked to the three main dimensions used in measuring the HDI: health and longevity, knowledge, and a decent standard of living (UNDP, 2023). The “Jabar Sehat” program relates to the health and longevity dimension, the “Jabar Cerdas” program relates to the knowledge dimension, while economic empowerment programs such as MtoP and MtoM relate to the dimension of a decent standard of living for the community.

This aligns with the research by Muk-adar et al. (2023), which found that the distribution of zakat significantly improves the HDI of zakat recipients, based on a case study in Bengkulu City. This research is also consistent with the findings of Murniati & Beik (2014), which showed that zakat plays a positive role in enhancing the human development of zakat recipients, based on a case study in Bogor City. This demonstrates that the collaboration between UNDP and BAZNAS in implementing sustainable development programs since 2018, as noted by Rehman & Pickup (2018), has had a positive impact on improving the HDI in Indonesia.

The role of ZIS in supporting health, education, and the economy, as the three main dimensions of the HDI, demonstrates that the targeted distribution of ZIS funds can reduce socioeconomic inequality and improve the quality of life for communities. This becomes increasingly important, especially during crises such as the COVID-19 pandemic, when many people experience a decline in income and struggle to meet their basic needs.

The Impact of Poverty on the Human Development Index

Based on the results of the t-test, a value of $-4.51 < -1.978$ (t-table) and a probability value of $0.000 < 0.05$. This proves that, partially, the poverty variable has an effect on the Human Development Index (HDI) in West Java. Simultaneously, poverty has an effect on the Human Development Index (HDI) in West Java, as indicated by the results of the F-test. Based on the regression analysis, poverty has a negative and significant effect on the Human Development Index (HDI). This indicates that lower poverty levels will positively contribute to an increase in the Human Development Index (HDI) in West Java.

This aligns with the “vicious circle of poverty” theory described by Nurkse (1952), in which poverty creates conditions that make it difficult for communities to improve their quality of life. Communities living in poverty generally face limitations in accessing education, health services, and meeting other basic needs. These limitations result in low-quality human resources, which ultimately affect the main dimensions of the Human Development Index: education, health, and a decent standard of living.

The results of this study align with research conducted by Dewi et al. (2021), which found that poverty has a significant negative effect on the Human Development Index (HDI) in Bojonegoro Regency. These findings are also supported by Zakaria’s (2018) study, which states that poverty levels have a negative and significant effect on the HDI in regencies and cities across Central Java Province. Furthermore, the results of Lestari’s (2023) study indicate that poverty has a negative and significant effect on the Human Development Index nationwide in Indonesia. Thus, it can be concluded that poverty levels reflect the public’s limited purchasing power in meeting basic living needs, which ultimately relates to the “decent standard of living” dimension in the measurement of the Human Development Index (HDI).

The Effect of the Unemployment Rate on the Human Development Index

Based on the results of the t-test, a value of $-2.40 < -1.978$ (t-table) was obtained, along with a probability value of $0.024 < 0.05$. This proves that, partially, the unemployment rate variable has an effect on the Human Development Index (HDI) in West Java. Simultaneously, the unemployment rate has an effect on the Human Development Index (HDI) in West Java, as indicated by the results of the F-test. Based on the regression analysis, the unemployment rate has a negative effect on the Human Development Index (HDI). This indicates that a lower unemployment rate will contribute positively to an increase in the Human Development Index (HDI) in West Java.

These findings align with the new growth theory proposed by Todaro (2000), which states that high unemployment rates reduce household income, thereby limiting access to education and health services. This situation results in lower-quality human capital, which ultimately affects the key dimensions of the Human Development Index: education, health, and a decent standard of living.

These findings are consistent with research conducted by Zakaria (2018), which states that the unemployment rate has a significant negative impact on the Human Development Index. Research by Ningrum et al. (2020) also indicates that high unemployment rates can hinder improvements in the quality of human development due to the public’s diminished ability to meet basic needs. Therefore, reducing unemployment rates is a key factor in efforts to sustainably improve the Human Development Index in West Java.

The Impact Before and During the COVID 19 Pandemic on the Human Development Index

Based on the results of the t-test, the t-statistic value was $8.35 > 1.978$ (t-table) and the probability value was $0.000 < 0.05$. This indicates that, partially, the COVID-19 dummy variable has a significant effect on the Human Development Index (HDI) in West Java. Furthermore, based on the results of the F-test, the COVID-19 variable, together with the other independent variables, simultaneously has a significant effect on the HDI in West Java. Based on the results of the regression analysis, the COVID-19 dummy variable has a positive and significant coefficient, indicating a difference in Human Development Index achievements between the periods before and during the COVID-19 pandemic.

These findings suggest that the COVID-19 pandemic has influenced the increase in the Human Development Index in West Java. Based on data from the Central Statistics Agency (BPS), the Human Development Index in West Java—both before and during the COVID-19 pandemic (2018–2022)—has increased annually. During the pre-pandemic period (2018–2019), West Java’s HDI increased at a relatively higher rate compared to the pandemic period. Meanwhile, during the pandemic period (2020–2022), West Java’s HDI continued to rise, but the rate of increase differed from that before the pandemic; specifically, prior to the pandemic, West

Java's HDI rose by more than 1%, whereas during the pandemic, it increased by less than 1%. Based on data from the Central Statistics Agency (BPS), this indicates that the COVID-19 pandemic may have impacted the growth of the HDI in West Java.

These findings align with those of Suparmono (2021), who stated that the COVID-19 pandemic slowed and potentially even reduced a region's Human Development Index. Additionally, the Central Statistics Agency (BPS) reported that Indonesia's HDI and those of several provinces continued to rise during the pandemic, though the growth rate slowed compared to the pre-pandemic period. This indicates a difference in HDI growth before and during the COVID-19. Furthermore, the COVID-19 pandemic did not lower the Human Development Index but merely slowed the increase in West Java's Human Development Index.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study aims to analyze the effects of *Zakat, Infak, and Sedekah* (ZIS), poverty, the unemployment rate, and a COVID-19 dummy variable on the Human Development Index (HDI) in West Java for the period 2018–2022. The results of the analysis show that ZIS has a positive and significant effect on the HDI. This indicates that the distribution of ZIS funds through education, health, and economic empowerment programs can help improve the quality of life for the community. These findings align with the UNDP's concept of human development, which emphasizes that human development focuses not only on economic growth but also on improving the quality of life through the dimensions of education, health, and a decent standard of living. Furthermore, the results of this study are also consistent with the concept of *maqashid al-sharia*, particularly in safeguarding life (*hifz an-nafs*), safeguarding reason (*hifz al-'aql*), and safeguarding wealth (*hifz al-mal*), which aim to achieve community welfare through the improvement of human quality of life.

Meanwhile, poverty and unemployment rates have a negative and significant impact on the Human Development Index (HDI). This indicates that the higher the levels of poverty and unemployment, the more the quality of life of the community will decline due to limited access to education, health care, and income. These conditions run counter to the concept of human development as defined by the UNDP and the *maqashid al-sharia*, which prioritize human well-being and quality of life as the primary goals of development.

The COVID-19 dummy variable also has a significant effect on the HDI, indicating a difference in HDI achievements between the pre-pandemic and pandemic periods. The COVID-19 pandemic caused a slowdown improvements in the quality of life, particularly in the economic, health, and educational aspects. Simultaneously, all independent variables in this study have a significant effect on the HDI in West Java. The results of this study indicate that improvements in the quality of human development are not solely influenced by economic growth

Recommendations

Based on the research findings, local governments are expected to enhance policies focused on reducing poverty and unemployment rates, given that these two variables have a negative impact on the Human Development Index (HDI). Efforts that can be undertaken include improving the quality of education, providing skills training, and creating more equitable job opportunities.

BAZNAS, as the institution responsible for managing zakat, is expected to optimize the management and distribution of ZIS funds in a more effective, targeted, and sustainable manner. The distribution of ZIS funds should be focused on productive programs such as economic empowerment, education, and health, so that they can have a long-term impact on improving the quality of life for the community.

For future researchers, it is recommended to include other variables that may influence the HDI, such as economic growth and government spending, and to use a longer research period to ensure that the results obtained are more comprehensive and in-depth.

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