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# THE EFFECT OF HUMAN DEVELOPMENT INDEX (HDI), INEQUALITY AND CONSUMPTION ON POVERTY LEVELS IN ALL PROVINCES IN INDONESIA

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#### ABSTRACT

This study aims to analyze the effect of human development index (HDI), income inequality, and consumption on Indonesia's poverty rate for 2018-2022. The approach used is quantitative with statistical panel data analysis method using 3 model approaches namely CEM, FEM, and REM. The selected model is the Fixed Effect Model as a result of the Chow and Hausman tests. The results showed that HDI and inequality variables had no significant effect on the poverty rate. Meanwhile, the consumption variable has a negative and significant effect on poverty. Simultaneously, all independent variables have a significant effect on the dependent variable. This research is expected to provide input for the government in formulating poverty alleviation policies in Indonesia by focusing more on reducing public consumption. Research limitations on secondary data in aggregate so that the results are less representative for each province.

Keywords: Poverty, Human Development Index, Inequality, Consumption

#### ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh indeks pembangunan manusia (IPM), ketimpangan pendapatan dan konsumsi terhadap tingkat kemiskinan di Indonesia periode 2018-2022.Pendekatan yang digunakan adalah kuantitatif dengan metode analisis data panel statistik menggunakan 3 model pendekatan yaitu CEM, FEM, dan REM. Model yang terpilih adalah Fixed Effect Model hasil dari uji Chow dan Hausman. Hasil penelitian menunjukkan bahwa variabel IPM dan ketimpangan tidak berpengaruh signifikan terhadap tingkat kemiskinan. Sedangkan variabel konsumsi berpengaruh negatif dan signifikan terhadap kemiskinan. Secara simultan semua variabel independen berpengaruh signifikan terhadap variabel dependen. Penelitian ini diharapkan dapat memberikan masukan bagi pemerintah dalam merumuskan kebijakan pengentasan kemiskinan di Indonesia dengan lebih memfokuskan pada pengurangan konsumsi masyarakat. Keterbatasan penelitian pada data sekunder secara agregat sehingga hasilnya kurang representatif untuk setiap provinsi.

*Kata Kunci:* Kemiskinan, Indeks Pembangunan Manusia, Ketimpangan, Konsumsi JEL: I32; D63; E21

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# Introduction

Poverty is widely recognized as a significant factor impacting a country's economy and is certainly a major development issue that can occur anywhere. Despite various initiatives aimed at alleviating poverty, such as capital assistance programs and cash or other forms of social support (Prasetyoningrum & Sukmawati, 2018), the problem persists.

Many quotations from the Qur'an emphasize that poverty is a fundamental issue that can threaten a person's spiritual integrity and faith, potentially leading them towards disbelief. Those living in poverty often struggle to fulfill their religious and social duties optimally, including in terms of access to adequate education and health services.

Whether we realize it or not, as Muslims, this poverty arises from a range of complex social issues that often go unnoticed in both urban and rural area, the increasing number of pedicab drivers on the side of the road, scattered. The increasing number of prostitutes the street children who are subjected to raids by security officers, from that it can be ascertained that almost 90% of the main factors are low economic conditions, not to mention the increasing number of school dropouts caused by their inability to meet school needs, and this trend continues to grow every year. This is reflected in the Human Development Index (HDI), as more underage children find themselves living as beggars or engaging in prostitution. It becomes increasingly evident that poverty is a significant challenge in every country, including Indonesia (Syaifullah & Malik, 2017).

Education has a very positive influence on poverty in Indonesia. For example, when a person's education is higher in every country, that person will have a high level of knowledge and ability to work better. In the end, a good education will lead to a good job as well and will undoubtedly increase the income received by that person. A country's high per capita income will increase public consumption and reduce the poverty rate that occurs (Fatmawati & Aisyah, 2023).



Figure 1: Poverty in Indonesia

Source: BPS Indonesia 2013-2022

Numerous researchers emphasize the significance of a country's economic growth. Another crucial factor is income inequality (Smythe et al., 2023), noting that income inequality and absolute poverty remain widespread in many nations, with up to 60% of the population living below the poverty line. Considering the growing governmental focus on inequality and the uneven income growth occurring in various countries, it is essential to acknowledge that income inequality and absolute poverty continue to be prevalent issues globally (Min & Rao, 2023). While economic growth is often considered a major factor in reducing absolute poverty, the persistence of poverty in developing countries, such as in Asia, has raised questions about the effectiveness of economic growth in addressing absolute poverty (Perera & Lee, 2013). New evidence suggests that economic growth in Asia has not only led to rising income inequality but also increased relative poverty. Inequities in income distribution can hamper efforts to reduce poverty, as well as cause social instability and anxiety among people.

According to the graphical representation, the poverty rate in Indonesia shows a fluctuating trend. Nonetheless, there was a significant decline between 2015 and 2019, as reflected by the percentage of impoverished individuals. In 2020, the poverty rate rose again, likely due to the impact of the Covid-19 pandemic.

In addition to poverty, inequality, and resilience, consumption is another factor that can affect economic growth. According to Ichvani & Sasana (2019), higher levels of consumption can drive economic growth by increasing the Gross Domestic Product (GDP). Additionally, money plays a vital role in economic resilience at the household level by facilitating income and stimulating the economy through business activities, which can also enhance a country's GDP (Eftimoski & Josheski, 2020). Given this context, the present study aims to investigate the effects of the Human Development Index, inequality, and consumption on poverty in Indonesia from 2013 to 2022. This research seeks to provide insights that can be used to evaluate and improve poverty alleviation strategies in Indonesia.

## **Literature Review**

The theory of absolute poverty assesses economic conditions based on the minimum income needed to cover essential life necessities. Globally, absolute poverty is typically defined as earning less than \$1.25 daily. This metric assesses the percentage of a population that subsists on an income deemed insufficient for basic survival needs, encompassing access to food, clean water, clothing, shelter, and essential health services. It plays a vital role in identifying and comprehending extreme poverty and in formulating policies and interventions to alleviate such conditions. Conversely, relative poverty compares an individual's or household's income to the national median income, implying that a person is considered relatively poor if they lack the resources that the average member of society possesses (Kim, 2017). For example, in Country X, the relative poverty line can be determined by ranking citizens' total income from highest to lowest and identifying the median income. Todaro & Smith (2011) argue that a society cannot achieve true prosperity and well-being if a large segment of its population remains in poverty and hardship.

#### Human Development Index

The Human Development Index (HDI) is pivotal in improving the quality of life within a country. From the perspective of Islamic economic development, human resources are regarded as a divine trust for managing natural resources and the environment (Prasetyoningrum & Sukmawati, 2018). The HDI consists of three main indicators: health, education, and living standards, which are evaluated through measures of purchasing power or income. An increase in an individual's education level is generally associated with higher income or wages from employment. If wages are reflective of productivity, then higher educational attainment results in increased productivity, thereby contributing to national economic growth. Furthermore, health is a significant factor in enhancing income.

Research by Sofilda (2013) suggests that the Human Development Index (HDI) has a significant negative impact on the poverty rate in Papua Province. Similarly, Maskur et al. (2023) found that the HDI significantly reduces poverty in Indonesia. However, Shinta (2017) reported contrasting results, indicating that the HDI simultaneously affects poverty in Hulu Sungai Selatan Regency.

H1: HDI has a negative effect on the Poverty rate in Indonesia.

# **Income Inequality**

Income distribution indicates the extent to which income is distributed evenly or unevenly and is a crucial determinant of poverty. Poverty is significantly influenced by the average per capita expenditure of individuals living below the poverty line. Therefore, an increase in income inequality, driven by a reduction in workers' income levels, can result in individuals whose expenditures were initially above the poverty line falling below it. This finding aligns with the research by Maskur et al. (2023), which confirms that income disparity significantly affects the poverty rate across provinces in Indonesia. This suggests that income inequality between provinces affects the proportion of impoverished individuals in each region of Indonesia. Other research has found that income disparity typically has a positive elasticity, indicating that reducing this disparity could potentially lower the poverty rate (Suparman, 2022). Additionally, a primary cause of poverty is the low income earned by many families and the high number of family members in poor households. This situation exacerbates the economic conditions of those already near the poverty line, which aligns with the findings of Nisa et al. (2020).

H<sub>2</sub>: Income inequality has a significant effect on Poverty in Indonesia.



# Consumption



Government expenditure, as a facet of fiscal policy, seeks to boost investment, enhance income distribution, and maintain economic stability. Growth theory concerning government spending posits that the share of government investment relative to Gross National Product (GNP) typically declines over time. Nonetheless, by increasing investment in sectors like health and education, a nation can potentially alleviate poverty in the long run, as initial expenditures can result in sustained benefits. Research by Amalia (2015) The study revealed that district government spending has a direct, positive, and significant impact on poverty, though it does not have a significant indirect effect. In contrast, at the provincial level, government spending significantly affects poverty both directly and indirectly. This finding aligns with Megasari (2015), who reported that government consumption has a significant

negative impact on poverty in Indonesia. Conversely, Rahman & Alamsyah (2019) found that the variable of consumption level had no significant effect and was negatively related to the consumption patterns of migrant communities.

H<sub>3</sub>: Consumption has no significant effect on the poverty rate in Indonesia.

## Methodology

This study aims to examine the impact of the Human Development Index (HDI), income inequality, and consumption on the poverty rate in Indonesia. The research employs a quantitative approach utilizing secondary data in the form of panel data. This data includes time series and cross-sectional data collected from 33 provinces in Indonesia (excluding D.I. Jakarta) for the period 2018-2022. Data analysis is performed using the EViews 12 software.

## **Operational Definition of Variables**

Poverty is defined as individuals whose income falls below the average poverty threshold. The percentage of poor individuals represents the proportion of people who, according to absolute poverty measures, live below this poverty line. In this study, the poverty rate serves as the dependent variable (Todaro & Smith, 2011).

The Human Development Index (HDI) serves as an independent variable for evaluating the quality of human life (Prasetyoningrum & Sukmawati, 2018). It is based on three principal dimensions: health and longevity, education, and a standard of living. Each dimension is assessed separately, and the overall HDI is calculated as a percentage using a specific formula. This composite index reflects the aggregate performance across these dimensions, providing a comprehensive measure of human development.

$$HDI = \sqrt[3]{IHealth + IEducation + IExpenses} \times 100\%$$
(1)

According to data from the Central Statistics Agency (BPS), the Human Development Index (HDI) is categorized into several levels. Specifically, an HDI below 60 is classified as low, an HDI between 60 and 70 is classified as medium, an HDI between 70 and 80 is considered high, and an HDI above 80 is categorized as very high.

#### Data Analysis Method

#### **Descriptive Statistics**

Descriptive statistics are the first step in analyzing a study. Researchers conduct descriptive analysis to understand the characteristics of each variable. This begins with an examination of the poverty data in Indonesia, which is the sample for the study's dependent variable. Following this, each variable is assessed using mean and median values. Furthermore, the data distribution is analyzed for its shape using skewness and kurtosis models, or it may be presented in tabular form.

## Model Generalized Least Square (GLS)

This study applies the static panel data approach with the generalized least squares (GLS) model. The estimation process incorporates three methods: the Common Effect Model (CEM), the Fixed Effect Model (FEM), and the Random Effect Model (REM).

1. Approach Common Effect Model (CEM)

The Common Effect Model integrates time series data with cross-sectional data, resulting in pooled data. This combination typically yields more robust results compared to

simple regression or multiple regression tests (Aprilia & Triani, 2022). Here is the Common Effect Model:

$$Y_{t} = \beta_{0} + \beta_{1}X1_{it} + \beta_{2}X2_{it} + \beta_{3}X3_{it} + \dots + \beta_{n}Xn_{it} + \varepsilon_{it}$$
(2)

## 2. Approach Fixed Effect Model (FEM)

Additionally, the Fixed Effect Model is a method used to estimate panel data by incorporating dummy variables to account for variations in intercepts. This model assumes that the regression slope coefficient is constant across different units and over time (Widarjono, 2018). The Fixed Effect Model can be represented as follows:

$$Y_{t} = \beta_{0} + \beta_{1}X1_{it} + \beta_{2}X2_{it} + \beta_{3}X3_{it} + \beta D13_{i} + \beta_{5}D23_{i} + \beta_{6}D33_{i} + \beta_{n}Dn_{mi} + \varepsilon_{it}$$
(3)

## 3. Approach Random Effect Model (REM)

This approach incorporates error terms that may arise from variations over time and between individuals. Consequently, the Random Effect Model presumes that intercepts differ for each individual, resulting in two residual components (Susilowati et al., 2019). The Random Effect Model can be expressed as follows (Widarjono, 2018):

$$Y_{t} = \beta_{0} + \beta_{1}X1_{it} + \beta_{2}X2_{it} + \beta_{3}X3_{it} + \dots + \beta_{n}Xn_{it} + \varepsilon_{it}$$

$$\tag{4}$$

With,

Y	: Poverty Level
X1	: Human Development Index
X2	: Inequality
va	Communitien

X3 : Consumption  $\mathcal{E}_{i_{t}}$  :error

The choice among the Common Effect, Fixed Effect, and Random Effect models is determined through the Hausman Test and the Chow Test. The Hausman Test is used to ascertain whether the Fixed Effect Model (FEM) or the Random Effect Model (REM) is the more appropriate model to use. If the Hausman statistic exceeds the critical value, the FEM is preferred; if it is below the critical value, the REM is considered more suitable. Conversely, the Chow Test is employed to compare the Common Effect (CE) model with the Fixed Effect model. If the null hypothesis (Ho) is rejected, the Fixed Effect model is regarded as more suitable than the CE model.

## F-Statistic Test

The F test, also known as the overall regression coefficient, is a testing method applied to all independent variables to assess how much influence they have on the dependent variable. The hypothesis in the F test is as follows:

$$H0 = \beta 1 \beta 2 \beta K \tag{5}$$

$$H\mathbf{1} = \beta \mathbf{1} \neq \beta \mathbf{2} \neq \beta K \tag{6}$$

The F test assesses the simultaneous impact of independent variables on the dependent variable. By examining the probability value of the F-statistic, we can determine whether the independent variables collectively affect the dependent variable. If the calculated F-value is lower than the F-table value, the null hypothesis (H0) can be rejected. Rejecting the null

hypothesis indicates that the independent variables have a statistically significant joint effect on the dependent variable. In other words, if the F-test statistic is less than the critical F-value, it suggests that the independent variables together influence the dependent variable's variation, rather than the effect occurring by chance. This method evaluates whether multiple independent variables simultaneously determine the outcome of the model's dependent variable.

## T-Statistic Test

The statistical t-test, also known as the regression coefficient test (partial), is used to assess the effect of a specific independent variable on the dependent variable within a regression model. In this test, it is assumed that the other independent variables remain constant or unchanged. The t-test helps determine whether the independent variable has a statistically significant individual effect on the dependent variable. In this study, a significance level of 0.05 ( $\alpha$ =5%) was applied to evaluate the results.

## **Result and Discussion**

## **Descriptive Statistics**

Descriptive statistics of the relationship between the Human Development Index, Inequality, Consumption, and Poverty in 33 Provinces in Indonesia during the period 2018-2022 are shown in the following table:

	Y	X1	X2	Х3
Mean	10.56439	7072.427	30.55061	1379.610
Median	8.765000	7073.000	29.50000	1378.000
Maximum	27.43000	8372.000	43.60000	1421.000
Minimum	3.610000	5313.000	21.50000	1327.000
Std. Dev.	5.350256	683.4769	4.515298	17.22871
Skewness	1.188647	-0.166225	0.882022	0.065294
Kurtosis	4.137517	2.382025	3.641114	2.998054
Jarque-Bera	47.46076	3.364843	24.07298	0.116556
Probability	0.000000	0.185923	0.000006	0.943388
Sum	1732.560	1159878	5010.300	226256.0
Sum Sq. Dev.	4665.914	76143932	3323.230	48383.02
Observations	164	164	164	164

## **Table 1: Descriptive Statistics**

Based on the descriptive statistics table provided, the characteristics and distribution of data for each variable can be interpreted. Variable Y has an average of 10.56439, with a median value of 8.765000. The maximum value of variable Y is 27.43000, while the minimum value is 3.610000. The standard deviation of variable Y of 5.350256 shows the variation or spread of data to the average. The positive skewness of 1.188647 indicates a right-skewed data distribution, while the kurtosis of 4.137517 indicates a data distribution that is more pointed (leptokurtic) than the normal distribution.

The X1 variable has an average of 7072.427, with a center value of 7073.000. The maximum value of variable X1 is 8372.000, while the minimum value is 5313.000. The standard deviation of the X1 variable of 683.4769 shows the variation or spread of the data to the average. The negative skewness of -0.166225 indicates a data distribution that is slightly more skewed to the left, while the kurtosis of 2.382025 indicates a data distribution that is slightly flatter (platykurtic) than the normal distribution.

The X2 variable has an average of 30.55061, with a center value of 29.50000. The maximum value of the X2 variable is 43.60000, while the minimum value is 21.50000. The standard deviation of the X2 variable of 4.515298 indicates the variation or spread of the data to the average. The positive skewness of 0.882022 indicates a right-skewed data distribution, while the kurtosis of 3.641114 indicates a data distribution that is slightly more pointed (leptokurtic) than the normal distribution.

The X3 variable has an average of 1379.610, with a center value of 1378.000. The maximum value of variable X3 is 1421.000, while the minimum value is 1327.000. The standard deviation of the X3 variable of 17.22871 shows the variation or spread of the data to the average. Skewness of 0.065294 indicates an almost symmetrical data distribution, while kurtosis of 2.998054 indicates a data distribution that is close to a normal distribution (mesokurtic).

# Measurement Model Testing

The model in measurement can be confirmed through several stages of testing to determine the best results. Therefore, it is necessary to specify the selected model to determine which one is the best by estimating static panel data regression. Below are the statistical results as shown in the following table:

Variable	Common	Fixed	Random
С	0.0020	0.0024	0.0072
HDI	0.0951	0.6032	0.5073
Inequality	0.0000	0.6122	0.0553
Consumption	0.0001	0.0111	0.0104
R-Squared	0.449421	0.969544	0.072785
Prob (F-statistic)	0.000000	0.000000	0.006955
Number of Observation	164	164	164
Number of Instrument	33	33	33
Chow Test	0.0000		
Hausman Test	0.0001		
Uji LM	256.7458		
	(0.0000)		

Efforts to combat poverty in Indonesia are influenced by factors such as the Human Development Index, income inequality, and consumption patterns. In the context of panel

data regression analysis, the models considered are the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). According to the results of the Chow Test and Hausman Test, the Fixed Effect Model (FEM) is identified as the most appropriate model for this analysis, given its probability value of 0.0000, which is below the 0.05 significance threshold. Additionally, the FEM's coefficient of determination is 0.969544, which is significantly higher compared to other models, indicating a strong explanatory power. The F-Statistic probability value also confirms the significant combined effect of the independent variables on the dependent variable.

## Hypothesis test

The subsequent phase involves hypothesis testing, which in this study is concentrated exclusively on evaluating the direct impact of the independent variable on the dependent variable.

Hypothesis	Coefficient	conclusion
H1 HDI on Poverty	0.6032	Not Supported
H2 Inequality to Poverty	0.6122	Not Supported
H3 Consumption on Poverty	0.0111	Supported

## **Table 3: Hypothesis Results of Direct Effect**

Notes: Significance at P<0.05

#### F -test

The F hypothesis test is a combined or simultaneous test used to assess the overall impact of the Human Development Index (X1), income inequality (X2), and consumption (X3) on the dependent variable, which is the poverty rate (Y). Based on the results from the F test in Table II with the Fixed Effect Model (FEM) estimation, the independent variables have a significant effect on the dependent variable collectively, as evidenced by an F-statistical probability of 0.000000, which is lower than the 0.05 significance threshold. Therefore, it can be concluded that the Human Development Index, income inequality, and consumption variables, taken together, have a significant positive effect on the poverty rate in Indonesia.

#### T-test

Partial hypothesis testing is a statistical method used to assess the impact of each independent variable on the dependent variable. In this study, the t-test is employed to evaluate the effects of the Human Development Index (X1), Income Inequality (X2), and Consumption (X3) on the dependent variable, Poverty Level (Y). According to the Fixed Effect Model (FEM) estimation with a significance level of 5%, it was found that among all the independent variables examined, only the consumption variable significantly affects the poverty rate in Indonesia. In contrast, the HDI and Income Inequality variables do not show a significant effect. The following discussion provides a detailed explanation of the t-test results.

## Discussion

1. H1 Human Development Index Has No Effect on Poverty Level in Indonesia

The results of this study indicate that the Human Development Index (HDI) does not show a significant relationship with the Poverty Level. The coefficient of 0.000368 and a probability value of 0.6032 suggest that HDI does not significantly affect the poverty rate in Indonesia, despite the various indicators such as health, education, and living standards. This finding contrasts with the study by Maskur et al. (2023), which reported a significant negative impact of HDI on poverty in Indonesia. Conversely, the study by Saragih et al. (2022) aligns with the current results, showing that the HDI had no effect on poverty in Indonesia from 2007 to 2021. These results highlight the necessity for government intervention and policies to improve HDI measurement beyond the existing three indicators, to ensure that HDI effectively enhances community welfare and development.

# 2. H2 Inequality Does Not Affect the Poverty Rate in Indonesia

The analysis of the impact of inequality on the poverty rate in Indonesia shows a coefficient of -0.049752 and a probability value of 0.6122, indicating that inequality does not have a significant effect on the poverty rate, with the coefficient being negative. This result is consistent with the research by Saputri & Udjianto (2023), which suggests that income inequality (GR) does not significantly influence the depth of poverty. There is a need for government intervention to channel social assistance effectively to address poverty, even in the context of high inequality. High inequality may arise from the presence of extremely wealthy groups rather than an increase in the number of poor individuals. Consequently, poverty levels do not necessarily rise in tandem with increasing inequality in Indonesia. Contrary to the findings of Osinubi & Olomola (2021), which indicate that inequality significantly affects the poverty rate in Indonesia, it is important to consider how this inequality leads to negative outcomes. The unequal distribution of resources hinders the poor's access to education, healthcare, and decent employment. When wealthy individuals control most resources, it restricts opportunities for social mobility, making it challenging for those in poverty to improve their living standards.

Additionally, inequality impedes inclusive economic growth. As purchasing power declines, overall demand reduces, which, in turn, affects job creation. Moreover, disparities in income distribution can lead to social instability, exacerbating economic conditions, particularly for vulnerable populations. In Indonesia, where regional disparities remain substantial, this inequality is a key factor contributing to persistently high poverty rates.

# 3. H3 Consumption Has a Significant Effect on the Poverty Level

The final test results concerning the relationship between consumption and the poverty level reveal a significant negative impact of consumption, with a coefficient of -0.034078 and a probability value of 0.0111. This indicates that higher consumption contributes to a reduction in the poverty rate in Indonesia. This finding aligns with earlier research by Megasari et al. (2015), which also observed a significant negative effect of consumption on poverty rates. Increased consumption or government expenditure is associated with a decrease in poverty levels. Furthermore, research from the China region reveals that poverty among the elderly is influenced by demographic factors such as the distinction between rural and urban settings, low levels of education, and advanced age. Although there has been notable progress in reducing poverty over the past decade, these factors remain significant indicators of poverty. From 2011 to 2020, a 72.9% increase in consumption led to a 59.2% decrease in poverty rates, demonstrating considerable progress (Gong et al., 2022). Different from the research results Rahman & Alamsyah (2019) which states that the consumption variable has no significant effect on the poverty rate. Education, income, and consumption all play an important role in increasing poverty. The government should look for policies to overcome poverty by paying attention to these three variables.

## **Conclusion and Recommendation**

Based on the analysis and discussion, several key conclusions emerge. This study examines the influence of the Human Development Index (HDI), income inequality, and consumption on the poverty rate in Indonesia from 2018 to 2022, using panel data from 33 provinces. The results of the Chow and Hausman tests suggest that the Fixed Effect Model is the most appropriate for this analysis. The findings indicate that, when considered individually, consumption has a notable negative effect on poverty, while HDI and income inequality do not show significant impacts. This suggests that increased consumption can be associated with a higher poverty rate in Indonesia. However, when evaluated together, all independent variables—HDI, income inequality, and consumption—significantly influence poverty. Thus, improvements in HDI, reductions in inequality, and increased consumption can collectively contribute to reducing the poverty rate in Indonesia. This research aims to guide government policy, recommending a stronger focus on consumption as a strategy for poverty reduction. Given the study's limitations, the following recommendations are proposed for future research on this topic:

- 1. This study still has limitations on the observation period, so future researchers are advised to extend the observation period on variables that might affect the poverty rate in Indonesia.
- 2. Due to the limited sample in this study, it is recommended that future researchers include unemployment variables in their studies to improve the quality and results of the research.
- 3. In relation to the limitations of the variables in this study, it is recommended that future research include other external factors included in macroeconomic aspects, such as inflation, unemployment, and Gross Domestic Product (GDP).

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