

THE EFFECT OF POPULATION, HDI, AND GRDP ON THE LEVEL OF POVERTY IN THE KEDU RESIDENCY

Asyifa Lunawati^{1*}, Hadi Sasana²

^{1,2} Universitas Tidar

E-mail: ¹⁾ lunaasyifa03@gmail.com

Abstract

Poverty is a problem of non-accomplishment of individual welfare and is one of Indonesia's complex issues. Poverty is influenced by economic variables that are interrelated. This study was undertaken from 2012 to 2017 to examine the association between population, Human Development Index (HDI), and Gross Domestic Product (GDP) and poverty in the Kedu residence region. This study employs a regression method on panel data. Results indicated that population, HDI, and economic growth had a significant impact on the level of poverty in Kedu Residency. Meanwhile, the results of the F test indicate that the Population (JP), Human Development Index (HDI), and Economic Growth (GDP) variables have a significant impact on the Poverty Level simultaneously.

Keywords: HDI, GRDP, Number of Population, Poverty Level, Kedu Residency

1. INTRODUCTION

One of the challenges Indonesia still faces is poverty. As measured by expenditures, poverty is defined as the inability to meet essential food and non-food needs. The contemporary approach identifies several causes of poverty, including (1) the theory's emphasis on values. Where they are poor due to their stupidity, laziness, lack of tenacity, lack of achievement, and lack of potential. (2) A theory focusing on the economic organization of society. This theory assumes that people are impoverished due to a lack of opportunities and chances to improve their lives. (3) A theory that emphasizes the distribution of power within the social order and structure. This social structure and social order result in a small group of powerful and wealthy individuals comprising the majority of the poor.

In developing countries, poverty is a complicated problem to solve even though there are several developing countries that have succeeded in developing national production and income (Sartika et al. 2016). The level of welfare of the population in a country or region can be seen or measured from the poverty conditions that exist in that country or region. Indonesia is a developing country and has quite complicated problems, one of which is poverty.

The issue of poverty in Indonesia, the fourth most populous nation in the world, is not only a component of economic development, but also a demographic challenge. This of course cannot be separated from the fact that there are still 25.95 million Indonesians who are classified as poor (BPS, 2018). This figure is equivalent to the total population of the Australian continent and even five times larger than the population of Singapore

(World Bank, 2018). On the other hand, the poverty alleviation programs launched by the government such as price stabilization, the provision of community cash transfers and the distribution of village funds are seen as not effective in reducing poverty in Indonesia.

According to Setiono (2014) Indonesia is a developing country that is 57 years old and is still hit by poverty with a percentage of 24% if the poverty rate is below US\$ 1 out of 240 million people. If the poverty rate in Indonesia is measured by a standard of living below \$2, the poverty rate increases to 35%. Indonesia's current economic development is still not effective in dealing with the existing poverty problem.

This can be seen in the BPS report in September 2016 that the percentage of the urban poor fell from 7,79% to 7,73% while in rural areas it fell from 14.11% to 13.96%. However, despite this, the number of urban poor people increased by 0.15 million people. There are several provinces whose poverty percentage is above the national poverty percentage. This means that the poverty rate in the provinces in Indonesia is still high.

So far, the government has implemented programs to overcome poverty but are still not effective in suppressing this problem, these programs include the Inpres Disadvantaged Villages (hereinafter referred to as IDT), Program for People's Welfare Savings, Business Credit for Human Well-Being (also called Takesra-Kukesra), the Management of Critical Economic Impacts (hereinafter referred to as PDM-DKE), and the Social Safety Net program in the Health Sector (hereinafter referred to as JPS-BK), This was followed by the revolving fund program of the direct cash subsidy program/Direct Cash Assistance (henceforth referred to as SLT/BLT), School Operational Assistance (henceforth referred to as BOS), and The P2KP program is an urban poverty alleviation program. The community has not been able to completely eradicate poverty despite the existence of a number of poverty alleviation programs.

Based on the percentage of poor people in the former Kedu Residency in Central Java in 2017, it was ranked first at 88,44%. This is because several districts that are included in the second region contribute to high poverty rates.

Table 1. Total Poverty Population of Kedu Residency in 2012-2017

County/City	Year					
	2012	2013	2014	2015	2016	2017
Magelang City	12,10	11,80	11,00	10,90	10,60	10,60
Magelang Regency	166,20	171,00	160,50	162,40	158,90	157,20
Temanggung Regency	87,80	91,10	85,50	87,50	87,10	86,80
Kebumen District	258,50	251,10	242,30	241,90	235,90	233,40
Purworejo Regency	112,80	109,00	102,10	101,20	99,10	98,60
Wonosobo Regency	169,30	170,10	165,80	166,40	160,10	159,20

Source: Central Bureau of Statistics, Kedu Residency

According to the table above, the Kebumen Regency had the poorest population in the former Kedu Residency in 2012-2017, with an average of 243.85. Population is believed to be one of the factors affecting poverty. According to Malthus' theory,

population growth must be sustainable in order to meet rising demand (Ristika et al., 2021). However, the higher population growth can have a negative impact on the problem of poverty. For that one way to overcome poverty is in its development.

Development is a change process in a better and continuous direction that aims to realize an Indonesian society that is just, competitive, advanced, and prosperous in the Republic of Indonesia as a unitary state. Therefore, one of the most important indicators of national development success is the rate of poverty reduction.

The purpose of Indonesia's national development is to realize a just, prosperous, and prosperous society in accordance with Pancasila, sheltered in an independent, sovereign, and united unitary state of the Republic of Indonesia, in an atmosphere of peaceful, peaceful, orderly, and dynamic national life, as well as in a social environment. live in a world that is autonomous, friendly, orderly, and peaceful. The objective of national development is also consistent with the preamble of the 1945 Constitution, which states that public welfare has always been the ideal for all nations. In the meantime, the essence of Indonesia's national development is the development of the entire Indonesian population.

Development has a vital role in a country in the world. the purpose of development is to improve the welfare of its people (Feldman, 2014 in (Rohmi et al., 2021)). One of the ways to achieve success in development is the presence of quality human resources, which is an important requirement for sustainable economic development. Low-quality human resources are one of the factors that contribute to poverty (Kuncoro, 2006 in (Jonnadi et al., 2012)). Therefore, human resources must be improved to achieve prosperity by increasing quality human capital.

Measuring well-being with the Human Development Index (HDI), which consists of three components including life expectancy index, education index, and decent living standard index, can provide an overview of human development. And economic expansion or Gross Domestic Product is an indicator of the success of development implementation (GDP).

HDI is a comparative measure of life expectancy, educational literacy, and standard of living across all nations (Sumeitri & Destiningsih, 2022). The HDI is used to identify whether a country is developed, developing, or underdeveloped, as well as to assess the effects of economic legislation on quality of life. According to the BPS, residents are those who have been domiciled in the territory of the Unitary State of the Republic of Indonesia for at least a year, as well as those who have been domiciled for less than a year but wish to settle down. Gross Regional Domestic Product (GRDP) is the total value of all goods and services produced by the economic units of a region (BPS, 2016). GRDP is one of the most important indicators for determining the economic conditions of a region over a specific period of time, both at current and constant prices.

The nation and the state have not been entirely able to prosper as a result of the expansion of activities and development planning. The community's needs have not been accommodated and met by the development of various sectors. We can see that the issue of poverty has not been dealt with effectively up to this point. In actuality, this country's poverty is being exacerbated by the country's accelerating rate of development.

Poverty is one of the most significant obstacles to Indonesia's national development. This poverty seems to be a difficult thing to overcome, when in fact the government has provided many programs that involve national and international poverty experts. In the end, it is sustainability in carrying out these programs that must be handled properly in a government regime.

According to Suryono (2000) in (Bawuno et al., 2015) Changes in a region's GRDP are indicative of regional economic growth. Although economic growth is used as a measure of development, it is still of a general nature and does not yet reflect the capabilities of a specific community. Regional development is anticipated to stimulate economic expansion. The influence of GRDP on the level of poverty is significant, as the purpose of this study is to determine how much influence the GRDP variable has on the level of poverty in the former Kedu Residency.

For this reason, additional research on the factors that can affect the level of poverty in the former Kedu Residency is required to determine which factors must be activated to eradicate poverty. This study will also examine the impact of population, HDI, and GRDP on the poverty rate in the former Kedu Residency between 2012 and 2017. Consequently, the purpose of this study is to determine the impact of population, Human Development Index, and Gross Regional Product on the Poverty Rate in the former Kedu Residency from 2012 to 2017. This research will be processed with the assistance of the E-Views 10 application using the panel data regression method.

2. LITERATURE REVIEW

2.1. Population

The Malthusian theory in Dwiputra (2020) states that population growth follows a geometric progression while the growth in food availability follows an arithmetic progression, in this case where there is a problem with the population explosion in the city which is not matched by reduced food availability, this is an unfavorable balance if we return to Malthus' theory.

Malthus's theory emphasizes the significance of balancing population growth based on a geometric series with food supplies based on arithmetic. The Malthusian theory has actually cast doubt on the carrying capacity of the environment and the environment's carrying capacity. As a component of the natural environment, soil cannot provide enough agricultural products to satisfy the needs of a growing population. As the human burden increases, the carrying capacity of the soil as an environmental component decrease. The population must be in equilibrium with the environmental threshold so that it does not become a burden on the environment or interfere with the carrying capacity and capacity of the environment by causing natural disasters such as floods, droughts, crop failures, hunger, disease outbreaks, and death.

BPS residents include those who have lived in the territory of the Unitary State of the Republic of Indonesia for at least one year, as well as those who have lived there for less than one year but intend to settle down. Population is believed to be a factor that

influences poverty. In Malthus' theory, population growth must be sustainable in order to support additional demand. However, rapid population growth can have negative consequences, including poverty.

2.2. Human Development Index (HDI)

According to the Central Statistics Agency (henceforth referred to as BPS), the human development index (HDI) is an indispensable metric for measuring the performance of initiatives to improve the quality of human life (community/population). The Human Development Index quantifies a population's access to development outcomes, such as income, health, and education.

Human Development Index (HDI) is commonly used to classify nations as developed, developing, or undeveloped. The influence of economic policies on quality of life. According to Amartya Sen, inequality is the cause of hunger, not a shortage of food. Establishment of fair food distribution This is the case due to the existence of an unfair social system. The primary causes of hunger are economic and societal problems, such as decreased worker salaries, unemployment, rising food prices, and poor distribution methods.

Human development is defined by the United Nations Development Program (UNDP) as "the process of extending people's choice," which refers to the extension of human possibilities. Living a long and healthy life, obtaining an education, and having access to the necessary finances to have a respectable life are the most crucial options.

Based on the United Nations Development Program (UNDP), the following aspects support the concept of human development:

- 1) Population should be the focal point of development efforts.
- 2) Development is intended to increase people's options, not just their incomes. Therefore, the human development concept must be oriented not only on the economic side of the people, but on the population as a whole.
- 3) Human growth must take into account not just attempts to expand human capabilities/capabilities, but also efforts to optimize their utility.
- 4) Human growth is supported by four fundamental pillars: productivity, equity, sustainability, and empowerment. Human development serves as the basis for setting development goals and examining options for accomplishing the objectives of the general allocation fund for development.

HDI is crucial information for Indonesia because, in addition to being a measure of government performance, it is employed as one of the variables in setting the General Allocation Fund (hereinafter referred to as DAU). One of the reasons of poverty is the quality of human existence, which is quantified by the Human Development Index (HDI). HDI is comprised of three dimensions: health, education, and a standard of living adequate for one's needs (Central Bureau of Statistics, 2021). HDI is one of the development indicators in a region that correlates negatively with poverty.

2.3. Gross Regional Domestic Product (GRDP)

Gross Regional Domestic Product (GRDP) is defined by the Central Statistics Agency as the total gross added value created by firms within a domestic region. Or is the entire value of all final goods and services produced by economic activity in a region. GRDP is one of the most significant indicators of economic growth in a specific territory and over a specific time period (one year) created by all economic activity in a country or region.

The Gross Regional Domestic Product (GRDP) represents the entire value of all goods and services produced by a region's economic units (BPS, 2016). GRDP is one of the most important indicators for assessing the existing and ongoing price economic conditions of a region over a certain time period.

As demonstrated by the high GRDP value, the region is experiencing economic growth. Nevertheless, a fall in GRDP suggests that a region is having problems that can be one of the causes of poverty.

GRDP data is one of the macroeconomic indicators used annually to evaluate a region's economic health. Among the benefits derived from these data are the following:

- 1) The GRDP at current prices (nominal) demonstrates the ability of a region's economic resources. A high GRDP value signifies the availability of substantial economic resources, and vice versa.
- 2) The GRDP at constant (real) prices can be used to demonstrate the annual growth rate of the entire economy or of a specific industry.
- 3) The distribution of GRDP at current prices by industry reveals the economic structure or function of each industry in a region. The economic foundation of a region is indicated by the importance of certain business fields.
- 4) GRDP per capita at current prices indicates the value of GRDP per person or head in the population.
- 5) The GRDP per capita at constant prices is helpful in determining the real economic growth per capita of a region's population.

2.4. Poverty

Based on the Central Statistics Agency (2016), poverty is the inability from an material, economic, and physical standpoint to meet the basic needs for food and non-food, as measured by expenditure. (Idris, 2022).

Poverty is always related to inequality and vulnerability because people who are not considered poor can at any time become poor if they experience problems, for example the financial crisis and falling prices for agricultural businesses.

Robert Chambers (2010) in (Nurcahyono, 2014) states that poverty is an integrated concept that has five dimensions, namely:

- 1) Poverty;
- 2) helplessness;
- 3) Vulnerability to face emergency situations;

- 4) Dependency; and
- 5) Alienation both geographically and sociologically.

To quantify poverty, the Central Statistics Agency employs the basic needs method, which consists of:

- 1) The Poverty Line (GK) equals the combination of the Food Poverty Line (GKM) and the Non-Food Poverty Line (GKNM). Those whose average monthly per capita spending is less than the Poverty Line are considered to be poor.
- 2) The Food Poverty Line (GKM) is the amount required to meet a person's minimal daily food needs, which are 2,100 calories per day.
- 3) The Non-Food Poverty Line (GKNM) is the minimum necessary for housing, clothing, education, and medical care.

According to Kuncoro (2000) in (Dama, 2016) poverty is caused by:

- 1) Differences in access and capital.
- 2) The poor quality of human resources will have an effect on productivity and earnings.

According to Suryati (2005) in (Dama, 2016), the characteristics of the poor population are:

- 1) On average, they lack production elements like land, capital, work equipment, and expertise.
- 2) Have a low level of education.
- 3) Most are employed or self-employed as small business owners (informal sector), underemployed, or jobless (not working).
- 4) Most are in rural areas or certain urban places (slum areas).
- 5) Inability to purchase (in adequate amounts) essential requirements, clothing, shelter, and other social health services.

3. RESEARCH METHODS

3.1. Types of Research

This descriptive study makes use of quantitative research methods. Quantitative research employs numerical data and statistical calculations for analysis. This method pertains to the positivist philosophy, which is used to analyze specific populations or samples in order to test recently developed hypotheses (Sugiono et al., 2020).

3.2. Research Location and Object

The location of this research is in the former Kedu Residency with a total of 6 cities/regencies, namely Magelang City, Magelang Regency, Temanggung Regency, Kebumen Regency, Purworejo Regency, and Wonosobo Regency.

3.3. Data Types and Sources

This study uses the type of secondary data taken from the Central Statistics Agency of Indonesia. The data used are:

- 1) Total Population in 2012-2017
- 2) 2012-2017 Human Development Index
- 3) Gross Regional Domestic Product 2012-2017
- 4) Number of Poor People in 2012-2017

3.4. Analysis Method

3.4.1. Panel Data Regression

Regression is a measurement technique that can also be used to determine the presence or absence of correlation between variables. Using regression analysis, one can identify the functional connection between two or more variables.

This study applies the panel data regression strategy, which combines the cross-sectional and time series methods. The poverty line is the dependent variable, while the independent variables are the Total Population (hereinafter referred to as TP), Human Development Index (HDI), and Gross Regional Domestic Product (GRDP).

3.4.2. Common Effect

Common effect regression is one of the simplest ways for estimating panel data by merging cross section and time series data without evaluating the differences between time and people; thus, the model is evaluated using the ordinary least squares methodology (Pratowo, 2012).

3.4.3. Fixed Effect

In fixed effect regression, the assumption used is that the intercept is the difference between individuals. To estimate this model, the dummy variable technique can be used to explain the difference in the concept. This model is known as the least square dummy variable technique (Munandar, 2017).

3.4.4. Random Effect

In this model, individual and temporal differences are accounted for by the error variable. This method will consider the possibility of an error correlation between the time series and cross section (Purnomo, 2018).

3.4.5. Fixed Effect Model Significance Test (Chow Test)

This test aims to determine which model, fixed effect or common effect, is superior. Using the F test statistic, the Chow test determines the difference between two regression models (Nandita et al., 2019).

3.4.6. Random Effect Model Significance Test (Lagrange Multiplier Test)

This test aims to determine which of random effects and common effects is superior. Beusch-Statistical Pagan's Lagrange Multiplier test was utilized to conduct the examination. This statistical test follows the chi-square distribution with as many degrees of freedom as independent variables. In testing the significance of the random effect model, the Beusch-Pagan test is applied to the residual value of the common effect model (Gujarati, 2013 in (AyuBhakti et al., 2014)).

3.4.7. Fixed Effect or Random Effect Significance Test (Hausmant Test)

Hausmant test is carried out if after testing the fixed effect and random effects models the results are both better than the common effects model. This test aims to determine which of the fixed effect and random effect models is superior. Hausman (1978) in (AyuBhakti et al., 2014) has developed a test based on the chi-square distribution with degrees of freedom proportional to the number of independent variables. If the null hypothesis is rejected, then it can be concluded that the fixed effect model is superior to the random effect model. The random effect regression model, if implemented, is, however, more precise than the fixed effect regression model.

3.5. Classic Assumption Test

3.5.1. Normality Test

This test is performed to determine whether or not the distribution of variable data is normally distributed. The hypothesis in the normality test with a significance level of $\alpha = 5\%$.

3.5.2. Multicollinearity Test

Multicollinearity refers to the existence of a perfect or definite linear relationship between multiple independent variables in a regression model. This test is identified using the Klein method and the Gujarati agreement on the value of the correlation that occurs between variables, specifically by comparing the adjustments derived from the regression results between independent variables. The hypothesis in the multicollinearity test with a significance level of 0.08.

3.5.3. Heteroscedasticity Test

Heteroscedasticity is a condition in which the homoscedasticity assumption is not met. If the value of the chi-square statistic is greater than the chi-square table, the White Test can be performed to determine the presence of heteroscedasticity. Therefore, it is possible to conclude that heteroscedasticity has been broken. This test is carried out by comparing the Obs*R-squared value of the White Test with a predetermined significance level. The hypothesis in the heteroscedasticity test with a significance level of $\alpha = 5\%$.

3.5.4. Autocorrelation Test

The autocorrelation test is intended to test the relationship between members in observations in a set of several intervals/time series (serial correlation) or between members of observations of various entities or spaces (spatial correlation).

Autocorrelation can be caused by aspects of economic data lag, functional form rule bias, timeframe or lag, data engineering, data changes, and non-stationarity in the model. The approach method used to check the autocorrelation is carried out by means of the LM Test.

3.6. Statistic Test

3.6.1. Coefficient of Determination

According to Kuncoro (2013: 246), the coefficient of determination test evaluates a model's capacity to account for variations in the dependent variable. The value of the coefficient of determination ranges between zero (0) and one (1). If the coefficient of determination is close to zero, the model cannot adequately explain the dependent variable. If a variable's coefficient of determination is close to one, this indicates that the independent variable's capacity to explain the presence of the dependent variable is increasing.

3.6.2. T test and F test

Through testing, the likelihood of any independent variable having an effect on the dependent variable is determined. The t-test takes into consideration the variance of the dependent variable. The t-test is used to determine the significance of a single independent variable's effect on a group of dependent variables. The most common method for conducting a T-test involves comparing the t-statistical value to the t-table value.

The F test is utilized to assess the concurrent effect of independent and dependent variables. The F test is carried out by comparing the f-statistic value to the f-table value.

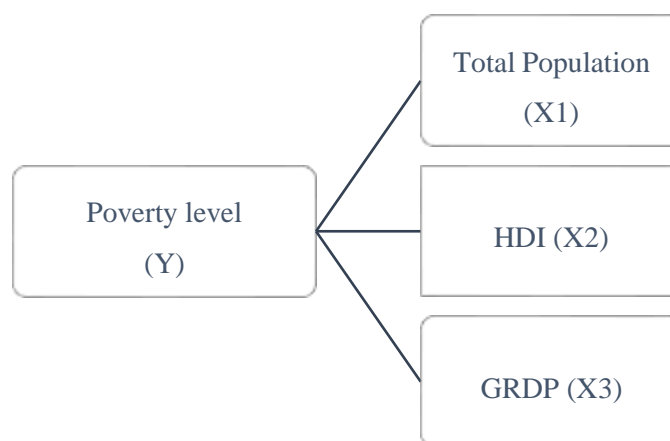
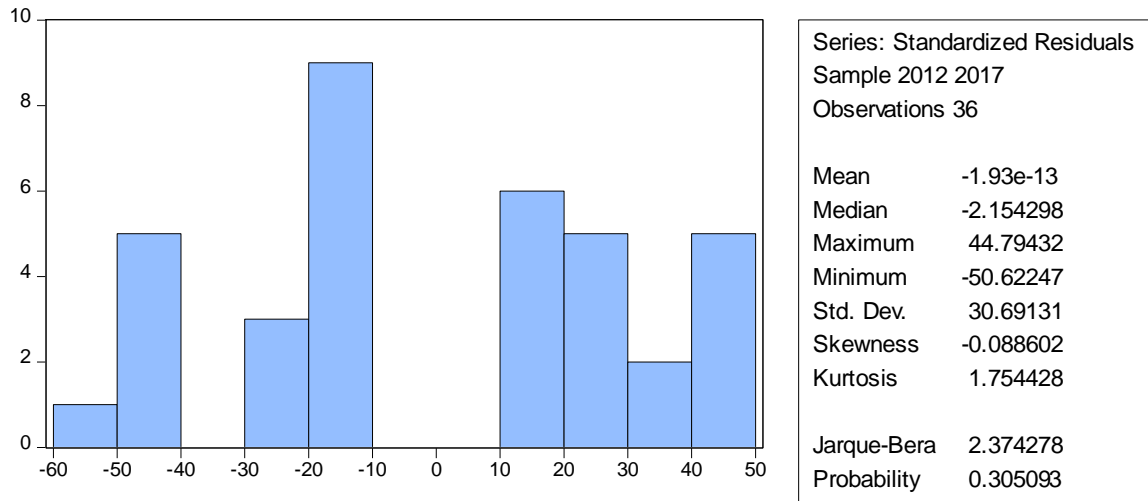


Figure 1. Framework of Research

4. RESULTS AND DISCUSSION

4.1. Classic Assumption Test

4.1.1. Normality Test



Source: Data Processing using Eviews 10

Figure 1. Normality Test Results

The results of the normality test above produce a Jarque-Bera value of 2.374278 with a probability of 0.305093 which means more than 0.05, the dependent and independent variables are normally distributed.

4.1.2. Multicollinearity Test

From the results of statistical data processing, the multicollinearity test table is obtained as follows:

Table 2. Multicollinearity Test Result

	JP	HDI	GDP
JP	1.0000000	-0.797446	0.953200
HDI	-0.797446	1.0000000	-0.661720
GDP	0.953200	-0.661720	1.0000000

Source: Data Processing using Eviews 10

The correlation between the independent variable GRDP and TP is greater than 0,8, as shown in the table above. So that the independent variable exhibits multicollinearity and the remaining independent variables have a correlation value less than 0,80 so that this independent variable does not exhibit multicollinearity.

4.1.3. Heteroscedasticity Test

To determine the existence of heteroscedasticity in this study, the following tests were carried out with the Breusch-Pagan-Godfrey test:

Table 3. Heteroscedasticity Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	63.80742	73.42591	0.869004	0.3913
TP	2.17E-05	2.79E-05	0.777022	0.4429
HDI	-0.726678	1.004777	-0.723224	0.4748
GDP	-3.26E-07	1.17E-06	-0.278744	0.7822

Source: Data Processing using Eviews 10

The table above explained the results of heteroscedasticity testing, where the probability value is greater than 0.05, therefore heteroscedasticity occurs because the results listed are more than 0.05.

4.1.4. Autocorrelation Test

The condition of autocorrelation exists when the error of one period of disturbance (t) is correlated with the error of the previous period (t-1). To determine the existence of autocorrelation in this study, the LM test was used to determine whether or not the independent variables were autocorrelated with the dependent variable.

Table 4. Autocorrelation Test

Weighted Statistics			
R-squared	0.811657	Mean dependent var	4.296288
Adjusted R-squared	0.793999	SD dependent var	5.553614
SE of regression	2.520636	Sum squared resid	203.3153
F-statistics	45.96744	Durbin-Watson stat	1.772366
Prob(F-statistic)	0.000000		

Source: Data Processing using Eviews 10

According to the illustration, the Durbin-Watson (DW) value is 1.772366. Based on the Durbin-Watson (DW) table, which employs a significance level of 5% with a sample size (N) of 36 and the number of independent variables (k) of 3, the upper limit value or Durbin Upper (DU) is 1.6539 and the lower limit or Durbin Lower (DL) is 1.2953.

Table 5. Autocorrelation Results

n	k=1		k=2		k=3	
	dL	dU	dL	dU	dL	dU
6	0.6102	1.4002				
7	0.6996	1.3564	0.4672	1.8964		
8	0.7629	1.3324	0.5591	1.7771	0.3674	2.2866
9	0.8243	1.3199	0.6291	1.6993	0.4548	2.1282
10	0.8791	1.3197	0.6972	1.6413	0.5253	2.0163
11	0.9273	1.3241	0.7580	1.6044	0.5948	1.9280
12	0.9708	1.3314	0.8122	1.5794	0.6577	1.8640
13	1.0097	1.3404	0.8612	1.5621	0.7147	1.8159
14	1.0450	1.3503	0.9054	1.5507	0.7667	1.7788
15	1.0770	1.3605	0.9455	1.5432	0.8140	1.7501
16	1.1062	1.3709	0.9820	1.5386	0.8572	1.7277
17	1.1330	1.3812	1.0154	1.5361	0.8968	1.7101
18	1.1576	1.3913	1.0461	1.5353	0.9331	1.6961
19	1.1804	1.4012	1.0743	1.5355	0.9666	1.6851
20	1.2015	1.4107	1.1004	1.5367	0.9976	1.6763
21	1.2212	1.4200	1.1246	1.5385	1.0262	1.6694
22	1.2395	1.4289	1.1471	1.5408	1.0529	1.6640
23	1.2567	1.4375	1.1682	1.5435	1.0778	1.6597
24	1.2728	1.4458	1.1878	1.5464	1.1010	1.6565
25	1.2879	1.4537	1.2063	1.5495	1.1228	1.6540
26	1.3022	1.4614	1.2236	1.5528	1.1432	1.6523
27	1.3157	1.4688	1.2399	1.5562	1.1624	1.6510
28	1.3284	1.4759	1.2553	1.5596	1.1805	1.6503
29	1.3405	1.4828	1.2699	1.5631	1.1976	1.6499
30	1.3520	1.4894	1.2837	1.5666	1.2138	1.6498
31	1.3630	1.4957	1.2969	1.5701	1.2292	1.6500
32	1.3734	1.5019	1.3093	1.5736	1.2437	1.6505
33	1.3834	1.5078	1.3212	1.5770	1.2576	1.6511
34	1.3929	1.5136	1.3325	1.5805	1.2707	1.6519
35	1.4019	1.5191	1.3433	1.5838	1.2833	1.6528
36	1.4107	1.5245	1.3537	1.5872	1.2953	1.6539
37	1.4190	1.5297	1.3635	1.5904	1.3068	1.6550
38	1.4270	1.5348	1.3730	1.5937	1.3177	1.6563
39	1.4347	1.5396	1.3821	1.5969	1.3283	1.6575

Dw = 1.772366
 DL = 1.2953
 DU = 1.6539
 4-DU = 4- 1.6539= 2.3461
 4-DL = 4- 1.2953= 2.7047

Table 5. Autocorrelation Results (continued)

DL	DU	4-DU	4-DL	
Autocorrelation Positive	Doubtful	No Autocorrelation DW 1.772366	Doubtful	Autocorrelation Negative
←————→	←————→	←————→	←————→	←————→
0	1.5600	1.7153	2.2847	2.44
		4		

Source: Data Processing using Eviews 10

Because the DW value lies between 1.7153 and 4-DU, it can be concluded that there is no autocorrelation.

4.2. Statistical Test

The following are the results of the regression calculations with the help of the E-Views program, which can be seen in the table below, the regression model obtained is as follows:

Table 6. Statistical Test Results

Dependent Variable: JPM
 Method: Panel EGLS (Cross-section random effects)
 Date: 12/03/21 Time: 00:06
 Sample: 2012 2017
 Periods included: 6
 Cross-sections included: 6
 Total panel (balanced) observations: 36
 Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-234.3281	84.49940	-2.773134	0.0092
TP	0.000325	4.13E-05	7.873210	0.0000
HDI	3.186855	1.116686	2.853850	0.0075
GDP	-9.30E-06	1.32E-06	-7.049011	0.0000
Effects Specification				
			SD	Rho
Cross-section random			29.27761	0.9934
Idiosyncratic random			2.388842	0.0066
Weighted Statistics				

R-squared	0.811657	Mean dependent var	4.296288
Adjusted R-squared	0.793999	SD dependent var	5.553614
SE of regression	2.520636	Sum squared resid	203.3153
F-statistics	45.96744	Durbin-Watson stat	1.772366
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.828335	Mean dependent var	129.0500
Sum squared resid	32968.47	Durbin-Watson stat	0.010930

Source: Data Processing using Eviews 10

4.2.1. Coefficient of Determination

Coefficient Test of perseverance This study was conducted to determine the extent to which Total Population (TP), Human Development Index (HDI), and Economic Growth constituted independent variables (GRDP). The test results indicate that if adjusted = 0.811, then all independent variables or independent variables consisting of Population (TP), Human Development Index (HDI), and Economic Growth (GRDP) can explain the 81.1% poverty rate, while the remainder can be explained by other factors – factors not included in the test.

4.2.2. T-Test

The purpose of this test is to determine whether each independent variable has an effect on the dependent variable.

1) Hypothesis 1

h_0 = Population Number has no effect on Poverty Level

h_1 = The Number of Population affects the Poverty Level

Based on the observation data, it is known that t-statistic (7.873) > t-table (1.6938) thus h_0 is rejected and h_1 is accepted. Which means the population has an effect on the level of poverty.

2) Hypothesis 2

h_0 = HDI has no effect on the Poverty Level

h_1 = HDI affects the Poverty Level

Based on the results of data observations, it is known that t-statistic (2.853) > t-table (1.6938) thus h_0 is rejected and h_1 is accepted. Which means HDI affects the Poverty Level.

3) Hypothesis 3

h_0 = Economic Growth has no effect on the Poverty Level

h_1 = Economic Growth Affects Poverty Level

Based on the observation data, it is known that t-statistic (-7.049) < t-table (1.6938) thus h_0 failed to be rejected and accepted h_1 . Which means that Economic Growth affects the Poverty Level.

4.2.3. F Test

The F test is used to determine whether or not all independent variables have a significant association with the dependent variable when considered jointly or simultaneously.

Hypothesis:

h_0 = all independent variables have no significant effect on the dependent variable.

h_1 = all independent variables simultaneously affect the dependent variable.

From the results of the F test, it can be seen that the F-statistics is 45.96744 with a probability value of $0.00000 < 0.05$, then h_0 is rejected and h_1 is accepted. So this gives the conclusion that simultaneously or simultaneously the variables of Population (TP), Human Development Index (HDI), and Economic Growth (GRDP) have a significant influence on the Poverty Level.

4.3. Discussion

4.3.1. The Influence of Population on Poverty Levels in Kedu Residency

According to the observation data, the Poverty Level has a population number of positive and significant effect. Since t-statistic (7.873) > t-table (1.6938), h_0 is rejected and h_1 is accepted. Therefore, the population has an effect on the poverty rate. This study result is same with previous research (Elda Wahyu Azizah, 2018) that the population variable affects the poverty level in East Java. This can happen because the growth in food supplies cannot keep pace with the very fast and high population growth, so the per capita income will tend to fall to a very low level, which causes the population to be unstable.

4.3.2. The Effect of HDI on the Poverty Level in the Kedu Residency

The Human Development Index has a negative and statistically significant effect on the poverty rate in Kedu Residency, as shown by the T-test. Since t-statistic is more than t-table, h_0 is rejected and h_1 is approved. Consequently, the HDI affects the Poverty Level. According to the findings of Ari et al. (2018), the HDI variable influences the level of poverty in Indonesia, where a decreasing poverty rate is a result of an increasing HDI, indicating that the HDI can increase human work productivity, which in turn increases income to meet the needs of a decent life. This is further corroborated by the findings of Sofilda et al. (2013), who discovered that the HDI had a negative and statistically significant impact on poverty levels in the districts and cities of Papua Province. The HDI encompasses three crucial characteristics of development: health and longevity, education

(knowledge), and a good standard of life. The three pillars of development have a substantial effect on poverty.

4.3.3. The Effect of GRDP on the Poverty Level in the Kedu Residency

The observation data indicate that GRDP has a negative and substantial influence on the degree of poverty in Kedu Karisidenan; it is known that t-statistic (-7.049) is bigger than t-table (1.6938), hence h_0 was not rejected and h_1 was accepted. Consequently, Economic Growth impacts the Poverty Rate. According to the findings carried by Putri et al. (2019), GRDP affects the level of poverty in the former Kedu Residency based on the RPJMP, such that when GRDP increases, poverty will decrease. However, poverty remains a problem in the former Kedu Residency due to the slow increase in GRDP. This is due to the fact that many people work in the informal sector (agriculture) under the assumption that "what matters is meeting their daily food needs and surviving." This study's findings are also supported by the theory employed, namely GRDP, an indicator of economic growth. Economic growth will lead to inequality in the distribution of additional income if it is not accompanied by an increase in employment opportunities, resulting in an increase in poverty (Alghofari & Pujiyono, 2011).

5. CONCLUSION

Based on the analysis, it is revealed that t-statistic (7.873) is more than t-table (1.6938), hence h_0 is rejected and h_1 is approved based on the findings of the data observations. Therefore, the population has an effect on the poverty rate. On the basis of the observation data, it is known that t-statistic (2,853) is more than t-table (1,6938), hence hypothesis h_0 is rejected and hypothesis h_1 is accepted. Thus, the HDI has an influence on the poverty level. According to the observation data, t-statistic (-7,049) exceeds t-table (1,6938), hence h_0 was not rejected and h_1 was allowed. Therefore, Economic Growth influences the Poverty Rate. Moreover, the findings of the F test indicate that the variables of Population, Human Development Index (HDI), and Economic Growth (GRDP) have a significant influence on the Poverty Level, either simultaneously.

REFERENCES

- Alghofari, F., & Pujiyono, A. (2011). *Analisis tingkat pengangguran di Indonesia tahun 1980-2007*. Universitas Diponegoro.
- AyuBhakti, N. A., Istiqomah, I., & Suprpto, S. (2014). Analisis Faktor-Faktor Yang Mempengaruhi Indeks Pembangunan Manusia Di Indonesia Periode 2008-2012. *EKUITAS (Jurnal Ekonomi Dan Keuangan)*, 18(4), 469–542.
- Bawuno, E. E., Kalangi, J. B., & Sumual, J. (2015). Pengaruh Investasi Pemerintah Dan Tenaga Kerja Terhadap Pertumbuhan Ekonomi Di Kota Manado (Studi Pada Kota Manado Tahun 2003-2012). *Jurnal Berkala Ilmiah Efisiensi*, 15(4).
- Dama, H. Y. (2016). Pengaruh Produk Domestik Regional Bruto (PDRB) Terhadap

- Tingkat Kemiskinan di Kota Manado (Tahun 2005-2014). *Jurnal Berkala Ilmiah Efisiensi*, 16(3).
- Dwiputra, A. (2020). *Analisis Faktor-Faktor Yang Mempengaruhi Tingkat Pengangguran Terbuka di Provinsi Jawa Barat Tahun 2006-2017*. Universitas Siliwangi.
- Idris, N. A. (2022). *Analisis Tingkat Kemiskinan di Kabupaten Bone*. Universitas Hasanuddin.
- Jonnadi, A., Amar, S., & Aimon, H. (2012). Analisis pertumbuhan ekonomi dan kemiskinan di Indonesia. *Jurnal Kajian Ekonomi*, 1(1).
- Munandar, A. (2017). Analisis regresi data panel pada pertumbuhan ekonomi di negara-negara Asia. *Jurnal Ilmiah Ekonomi Global Masa Kini*, 8(1), 59–67.
- Nandita, D. A., Alamsyah, L. B., Jati, E. P., & Widodo, E. (2019). Regresi data panel untuk mengetahui faktor-faktor yang mempengaruhi PDRB di Provinsi DIY tahun 2011-2015. *Indonesian Journal of Applied Statistics*, 2(1), 42–52.
- Nurchayono, O. H. (2014). *Perangkap Kemiskinan Pada Warga Relokasi (Studi Korelasional Unsur-Unsur Perangkap Kemiskinan pada Warga Relokasi Pucang Mojo, Kedungtungkul, Mojosoongo, Jebres, Surakarta)*. UNS (Sebelas Maret University).
- Pratowo, N. I. (2012). Analisis faktor-faktor yang berpengaruh terhadap Indeks Pembangunan Manusia. *Jurnal Studi Ekonomi Indonesia*, 1(1), 15–31.
- Purnomo, E. (2018). *Analisis Faktor-Faktor yang Mempengaruhi Indeks Pembangunan Manusia di Provinsi Riau Tahun 2010-2016*.
- Putri, I. C., Juliprijanto, W., & Septiani, Y. (2019). Analisis Pengaruh Tingkat Pendidikan, Pengangguran, dan PDRB terhadap Kemiskinan di Karesidenan Kedu Tahun 2014-2017. *DINAMIC: Directory Journal of Economic*, 1(3), 325–337.
- Ristika, E. D., Primandhana, W. P., & Wahed, M. (2021). Analisis Pengaruh Jumlah Penduduk, Tingkat Pengangguran Terbuka Dan Indeks Pembangunan Manusia Terhadap Tingkat Kemiskinan Di Provinsi Jawa Timur. *Eksis: Jurnal Ilmiah Ekonomi Dan Bisnis*, 12(2), 129–136.
- Rohmi, M. L., Jaya, T. J., & Fahlevi, M. R. (2021). Pengaruh Pembiayaan Syariah dan Indeks Pembangunan Manusia (IPM) Terhadap Tingkat Kemiskinan Di Provinsi Aceh: Analisis Data Panel. *Jurnal Ilmiah Ekonomi Islam*, 7(3), 1409–1415.
- Setiono, B. A. (2014). *Kebijakan Pemerintah Dalam Menangani Kemiskinan*.
- Sugiono, S., Noerdjanah, N., & Wahyu, A. (2020). Uji Validitas dan Reliabilitas Alat Ukur SG Posture Evaluation. *Jurnal Keterampilan Fisik*, 5(1), 55–61.
- Sumeitri, A., & Destiningsih, R. (2022). Analysis Of Factors Affecting Poverty in Central Java 2016-2019. *MARGINAL: Journal of Management, Accounting, General Finance and International Economic Issues*, 1(4), 23–40. <https://doi.org/https://doi.org/10.55047/marginal.v1i4.257>