ANALYSIS OF THE EFFECT OF HDI, GRDP, AND MINIMUM WAGES ON POVERTY IN CENTRAL JAVA FOR THE PERIOD OF 2011-2020

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Abstract
This study aims to analyze the effect of the Gross Regional Domestic Product, Minimum Wage and Human Development Index partially or simultaneously on the poverty level in the Regency/City of Central Java Province (2011-2020). This study uses secondary data covering 35 districts or cities in Central Java Province based on cross section data and from 2011 to 2020 on time series data. The analytical method used is panel data regression analysis with Random Effect Model (REM) or Generalized Least Square (GLS). The results showed that simultaneously GRDP, UMK, HDI and Population had an effect on the level of poverty in Central Java Province. While partially (1) GRDP has a significant negative effect on the level of poverty in Central Java Province; (2) MSE has no effect on the poverty level in Central Java Province; (3) HDI has a significant negative effect on the poverty level in Central Java Province.

Keywords: District/City Minimum Wage, Human Development Index, gross regional domestic product, poverty

INTRODUCTION

Structural poverty occurs because of structures that make certain sections of society dominate economic, social, political and cultural means (Lubis, 1986). While cultural poverty is caused by the behavior of the people themselves, such as wasteful living behavior, lack of work skills, and having no savings, and having an attitude of resignation to the poverty environment.

In Indonesia itself, the poverty rate is not small which is caused by the behavior of the people's life, so this causes the level of the poor to increase every year. Central Java Province is one of the areas with a high poverty rate. Economic development centered on the island of Java, cannot be separated from the problem of poverty. From data from the Central Statistics Agency, the problem of poverty in Indonesia lies on the island of Java, especially in the provinces of DI Yogyakarta, East Java and Central Java. This shows that so far economic growth in Java is only felt by certain groups of people and
is not evenly distributed to all communities. So far, economic development in Indonesia has tended to be centered on the island of Java, but the fact is that the problem of poverty is centered on the island of Java, especially in the province of Central Java. East Java and West Java. Based on data from the Central Statistics Agency (2015) Central Java was ranked second with the highest percentage of poverty rates, where previously East Java was ranked first and followed by West Java was ranked third with the highest percentage of poverty rates on the island of Java.

LITERATURE REVIEW

Poverty
The World Bank (2010) defines poverty as a lack of welfare which consists of many dimensions including low levels of health and education, poor people's access to clean water and sanitation, inadequate physical security, lack of voice and adequate capacity and opportunities for a better life. Meanwhile, according to BPS (2012) poverty is the inability from an economic perspective to meet basic food and non-food needs as measured from the expenditure side. Meanwhile, the poor are people who have an average monthly per capita expenditure below the poverty line.

According to Kuncoro (2010) the poverty line is all measures of poverty that are considered based on certain norms. The choice of norms is very important, especially in terms of measuring poverty based on consumption. The poverty line is based on consumption. Poverty line based on consumption. The poverty line based on consumption consists of two elements, namely:

1. Expenditures needed to meet minimum nutritional standards and other basic needs
2. The number of other needs varies greatly, reflecting the costs of participation in people's daily lives.

Economic growth
GRDP per capita can be used as an indicator to see the success of economic development in a region. GRDP is the net value of final goods and services produced by various economic activities in an area in a period (Hadi Sasana, 2006). GRDP can describe the ability of an area to manage its natural resources. Therefore, the amount of GRDP produced by each region is very dependent on the potential of natural resources and production factors of the area. The existence of limitations in the provision of these factors causes the amount of GRDP to vary between regions. Meanwhile, per capita GRDP can be calculated from constant price GRDP divided by the total population in an area.

According to the Central Statistics Agency (BPS) economic growth where the indicator used to see the economic growth of an area is the Gross Regional Domestic Product (GRDP). According to the Central Statistics Agency (BPS) the measurement for Gross Regional Domestic Product is as follows:
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\[ \frac{PDRB_t - PDRB_{t-1}}{PDRB_{t-1}} \times 100\% \]

Where:

- GRDP = Specific Year
- GRDP-1 = Previous Year

**Human Development Index**

According to the Central Statistics Agency (2007), the Human Development Index (HDI) is a measure of human development achievement based on a number of basic components of quality of life. HDI describes several components, namely the achievement of long and healthy life that represents the health sector; literacy rates, school participation and average length of schooling measure the performance of development in the field of education and the purchasing power of the community towards a number of basic needs as seen from the average amount of expenditure per capita.

**Minimum Wage**

The minimum wage is one of the receipts in the form of compensation from the employer to the employee for the work that has been done and given in the form of money stipulated by the approval of the law as well as an agreement between the employer and the employee including allowances, for employees and their families. entrepreneur to someone for the work that has been done (Sumarsono 2003). Based on the regulation made by the Minister of Manpower Number: Per01/Men/1999 concerning the minimum wage, it is a monthly wage consisting of basic wages including fixed allowances. Fixed allowance is a monthly reward that is not related to attendance or achievement.

**Previous Research**

Dwi Puspa Hambarsari, Kunto Inggit, 2016, Multiple Linear Regression, Economic growth has the most dominant influence on poverty levels in East Java. This is evident because economic growth is the only independent variable that has a significant effect on poverty levels in East Java.

Ady Soejoto, Amelia Karisma, 2013, Multiple Linear Regression, Economic growth and unemployment simultaneously and partially have an effect on the poverty variable. In the variation of the dependent variable poverty can be explained well by the two independent variables, namely economic growth and unemployment.

Sri Kuncoro, 2014, Panel Data Method, The results show that: Economic growth, unemployment and education simultaneously have a significant effect on poverty levels in East Java province in 2009-2011.

Reggi Irfan Pambudi, 2016, Regression and Classical Assumption Test, Economic growth has a negative and significant effect on poverty levels, regional minimum wages have a negative and significant effect on poverty levels, and unemployment has...
a positive and significant effect on poverty so unemployment is the most variable
dominant in poverty.

**Conceptual Framework**
The framework of thought in this study can be described as follows:

![Figure 1: Conceptual Framework](image)

**Hypothesis**
Based on the above framework, the following hypothesis can be formulated:
H1: HDI has a negative and significant effect on poverty
H2: GRDP has a negative and significant effect on poverty
H3: MSE has a negative and significant effect on poverty

**RESEARCH METHODS**
This study discusses economic growth, human development index, and minimum wage
on poverty in Central Java province in 2011-2020 where poverty is the dependent
variable, while economic growth, human development index and minimum wage are
independent variables. The variable measurement scale used in this study is the ratio
scale. This study uses secondary data with a quantitative approach method. The type of
data used is time-series data from 2011 – 2020 and cross sections from 35 districts in
Central Java province. This data was obtained from the publications of the Central
Statistics Agency (BPS) in the 2011 – 2020 range.

**Data Analysis Technique**
This research is a quantitative research with data analysis method used is Panel Data
Regression Method. Panel data regression analysis is defined as combining cross-
section and time-series data. The model used in this study is as follows:

\[
POVERTY = C + a \text{ ECONOMIC GROWTH} + b \text{ HUMAN DEVELOPMENT INDEX} + c \text{ REGIONAL MINIMUM WAGE} + e
\]
Where:
Poverty = Percentage of the number of poor people
C = Constant;
Economic growth = Percentage of economic growth rate
Human Development Index = Percentage of economic development index
Regional minimum wage = Rupiah
a and b = Coefficient of independent variables (Exchange and Inflation)
e = Error/Residual

Estimation Selection
According to Aldino (2018) This study uses secondary data used in this study, which is a combination of data between cross sections from 35 districts or cities in Central Java Province and time series from 2011 to 2020 or usually called panel data.

a. Common effect models (CEM)
   This approach method does not pay attention to time or individuals. It is assumed that the behavior of the company’s data is the same in various periods of time (Aldino, 2018). The panel data model approach is the simplest because it only combines time series and cross section data without regard to time or individuals, so it is the same as the Ordinary Least Square (OLS) approach or least squares technique to estimate the panel data model.

b. Fixed effect models (FEM)
   In this method, Dummy variable or fixed effect is used and also known as Covariance model. The fixed effect estimation method can be done without weighting (no weighted) or Least Square Dummy Variable (LSDV) and with weighting (cross section weight) or General Least Square (GLS). The purpose of weighting is to reduce heterogeneity between cross section units. The use of this model is appropriate to see changes in data behavior from each variable so that the data is more dynamic in interpreting the data. (Aldino, 2018)

c. Random Effect Model
   In the fixed effect model, inserting a dummy has the consequence of reducing the degree of freedom so that in the end it reduces the efficiency of the parameter. To overcome this problem, a disturbance variable (error term) known as the random effect can be used. This model estimates panel data where the disturbance variables may be interrelated over time and between individuals (Aldino, 2018).

Model selection
Chow Test (Chow Test)
The chow test is a test to determine the most appropriate Fixed Effect or Random Effect model used in estimating panel data. The hypotheses in the chow test are:
H0: Choose Common Effect Model or pooled OLS if the probability value of F statistic is not significant at 5%.

H1: Choose the Fixed Effect Model, if the probability value of F is statistically significant at 5%.

The basis for rejecting the hypothesis above is to compare the calculation of the F-statistic with the F-table. The comparison is used if the calculated F result is greater (>1) than the table, then H0 is rejected, which means that the most appropriate model to use is the fixed effect model. Vice versa, if the calculated F is smaller (<) than the F table, then H0 is accepted, and the model used is the Common Effect Model (Aldini, 2018).

**Hausman test**
The Hasuman test can be done as a statistical test to choose whether the Fixed Effect or Random Effect model is the most appropriate to use. Hausman test testing is carried out with the following hypothesis:

H0: Choose the Random Effect model, if the Chi-square value is not significant at 5%.

H1: Choose the Fixed Effect model, if the Chi-square value is significant at 5%.

The Hausman test statistic follows the Chi square statistical distribution with n degrees of freedom, where n is the number of independent variables. If the value of the Hausman statistic is greater than the critical value, then H0 is rejected and the correct model is the Fixed Effect model, while on the contrary if the value of the Hausman statistic is less than the critical value, the correct model is the Random Effect. (Aldino, 2018)

**Statistic test**
The statistical tests used in this study were the Coefficient of Determination Test (R² Test), the Joint Regression Coefficient Test (F Test), and the Partial Regression Coefficient Test (t Test). (aldino, 2018)

**Coefficient of Regression Together (Test F)**
The F test was conducted to determine whether the independent variables simultaneously had a significant effect on the dependent (dependent) variable. If the calculated F value is greater than the F value according to the table, then the alternative hypothesis, which states that all independent variables simultaneously have a significant effect on the dependent variable. (Aldino, 2018)

**Coefficient of Determination Test (R² Test)**
Imam Ghozali (2002) states that the coefficient of determination (R²) essentially measures how far the ability of a model to explain the variation of the dependent variable. The value (R²) is between zero and one. A small value (R²) (close to zero) means that the ability of one variable to explain the dependent variable is very limited.
A value close to one means that the independent variables provide almost all the information needed to estimate the dependent variable. (aldino, 2018)

**Partial Regression Coefficient (t-test)**
The t-statistic test basically shows how far the influence of each independent variable on the dependent variable. By assuming the other independent variables constant. According to Kuncoro (2011) the hypothesis of t-statistical testing is:

H0: Partially no significant effect on the dependent variable.

H1: Partially significant effect on the dependent variable.

If the probability tcount > 0.05 then accept or reject H1, otherwise if the probability tcount < 0.05 then H0 rejects or accepts H1. The significance level used is 5% (Aldino, 2018)

**RESULT AND DISCUSSION**

From the data analysis performed with panel data regression, the following results were obtained:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>62.55910</td>
<td>4.170333</td>
<td>15.00098</td>
<td>0.0000</td>
</tr>
<tr>
<td>HDI</td>
<td>-0.692256</td>
<td>0.064123</td>
<td>-10.79573</td>
<td>0.0000</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.041817</td>
<td>0.019106</td>
<td>-2.188696</td>
<td>0.0293</td>
</tr>
<tr>
<td>MSE</td>
<td>-7.65E-07</td>
<td>2.89E-07</td>
<td>-2.645263</td>
<td>0.0085</td>
</tr>
</tbody>
</table>

Effects Specification

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>Rho</th>
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<tbody>
<tr>
<td>Cross-section random</td>
<td>2.937801</td>
<td>0.9337</td>
</tr>
<tr>
<td>Idiosyncratic random</td>
<td>0.782862</td>
<td>0.0663</td>
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Weighted Statistics

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<tr>
<th></th>
<th>Mean dependent var</th>
<th>1.070544</th>
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</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.784928</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.783063</td>
<td>1.687575</td>
</tr>
<tr>
<td>SE of regression</td>
<td>0.786013</td>
<td>213.7643</td>
</tr>
<tr>
<td>F-statistics</td>
<td>420.9214</td>
<td>0.737397</td>
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<tr>
<td>Prob(F-statistic)</td>
<td>0.000000</td>
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</table>

Unweighted Statistics

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<th></th>
<th>Mean dependent var</th>
<th>12.74906</th>
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</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.501306</td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>Coefficient</td>
<td>Std. Error</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------</td>
<td>------------</td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>3346.198</td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the results of the analysis of this study using Eviews 9 and the panel data regression method, the results of the T statistical test on the HDI variable showed a coefficient value of -0.692256 with a significance value of 0.0000 <0.05. Based on the results of research analysis, H1 is accepted so that it can be concluded that in this study partially HDI has a negative and significant effect on poverty levels. The statistical test on the GRDP or GRDP variable shows a coefficient value of -0.041817 with a significance value of 0.0293 <0.05, then H2 is accepted, which means that in this study partially GRDP has a negative and significant effect on the poverty level. Statistical test on the minimum wage variable shows a coefficient value of -7.65E-07 with a significance value of 0.0085 < 0,

**Effect of HDI on Poverty**

The results of the partial hypothesis test show that there is a significant negative effect between HDI on poverty. The higher the quality so that it is able to reduce the poverty rate in an area, HDI can be measured through human development as seen from the level of education and literacy, guaranteed health and a long life, as well as income that is able to meet the needs of life. 3. Based on the results of the study, it is known that the minimum wage

**The Effect of GRDP on Poverty**

The results of partial hypothesis testing indicate that there is a significant negative effect between GRDP on poverty. Based on the results of the study, an increase in GRDP will reduce the poor in East Java Province. For this reason, so that the increase in GRDP can be felt more by the poor, the policy that should be carried out is to increase the growth of economic sectors which is expected to reduce the unemployment rate and increase people's income so that poverty can be reduced. The most dominant sectors to be developed are agriculture, industry and trade. Because these three sectors

**Minimum Wage Effect**

The results of the partial hypothesis test show that there is a significant negative effect between the minimum wage on poverty. This shows that the effect of the district/city minimum wage is significant, which means that every time the district/city minimum wage decreases, it will increase the number of poor people in East Java Province.

**CONCLUSIONS AND SUGGESTIONS**

This study was conducted to examine the variables of the human development index, gross domestic product, district minimum wages on poverty in Central Java. In this study, the objects in this study were 35 districts in the province of Central Java with the period 2011 - 2020 and produced 350 observations. The best model used in estimating
the data is Random Effect Models (REM). Based on the results of research and discussion, it can be concluded that simultaneously on the F test inflation and exchange rates have a significant effect on exports. In the T statistic test, inflation has a significant negative effect on exports, this follows the export theory where inflation has a negative and significant effect on exports. In the T-test, the exchange rate has a negative and significant effect on exports, and this follows the Mundell Fleming Model theory where the exchange rate has a significant negative effect on exports.

Suggestion
Based on the results of the research that has been analyzed and the results of the conclusions, it is necessary to follow up with several suggestions as follows:

1. The local government in reducing the number of poor people in Central Java Province should apply the district/city minimum wage more. The implementation of the district/city minimum wage will influence and encourage people to look for work. People who work will earn income and be able to meet the needs of daily life, so that in the end will reduce the number of poor people in East Java Province.

2. The government should make improvements to the human development index through health, education and people's purchasing power factors, the government can also provide services in the education sector free of charge and free of charge, especially for the poor. So that the quality of human resources is increased which is expected to reduce unemployment and poverty. The government's attention to health also still needs to be increased by providing free health services, increasing the number of puskesmas, especially for poor and disadvantaged rural communities.

3. Local governments must pay special attention to underprivileged communities in terms of finding or working opportunities in their respective regions in order to reduce the number of poverty, for example by facilitating business establishment permits so that job opportunities are greater, so that more workers are absorbed.

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