

# IRSA

*by* Ermatry H

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**Analysis Factors Affecting Inequality of Income  
in 4 Districts / 1 City of DI Yogyakarta 2010 -2015**

Ermatry Hariani

9 [Ermatry85@gmail.com](mailto:Ermatry85@gmail.com)

University of Wijaya Kusuma Surabaya

Jl. Dukuh Kupang XXV / 54 Surabaya, SBY, East Java

**ABSTRACT**

Development aims to improve people's welfare. To improve the welfare of the community, high and stable growth and equitable income distribution are required. Rapid economic growth is not balanced with equity, will cause inequality. Inequality of income is caused by several factors, not only because of differences in development between regions, the quality of human resources, the potential of natural resources, geographical location, ethnicity can also determine inequality in terms of income distribution. Some of these factors can be a source of inequality. Related to this, it is necessary to note the factors that affect the income inequality, so that the implementation of development can be planned and oriented .

The purpose this study is determine magnitude of factors affecting income in e quality in Yogyakarta. This study uses panel data method, and data used is time series and cross section data in 4 districts and 1 city of Yogyakarta in 201 0 - 2015. This research use variable: Human Development Index (HDI), GRDP Per capita, Open Unemployment Rate. The analysis method use is panel data with fixed effect model regression . The contribution of this research is expected to be one of the considerations in formulating the planning, strategy and policy related to income inequality . Research is expected to be contribute ideas and information for all the parties will conduct further research.

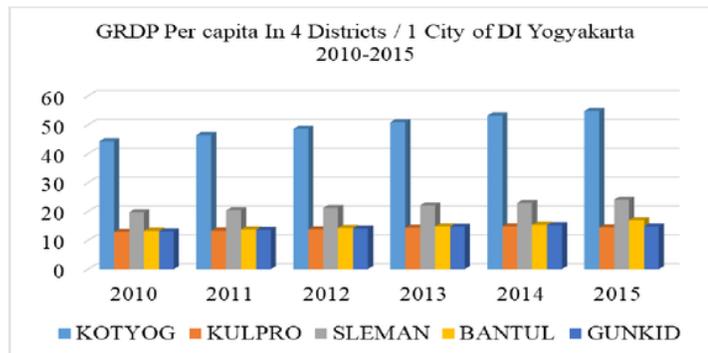
The results show that the variable of HDI has a negative and insignificant affect to income inequality, GRDP Per capita has a positive relationship and significant to income inequality, and open unemployment rate has positive and insignificant affect to income inequality.

**Keywords: Human Development Index (HDI), GRDP Per capita, Open Unemployment Rate, Income Inequality, Panel data method**

## Introduction

Development aims to improve people's welfare. To improve the welfare of the community requires a fairly high and stable growth and income distribution evenly. Rapid economic growth that is not balanced with equity, will cause inequality. Inequality of income is caused by several factors, not only because of differences in development between regions, the quality of human resources, the potential of natural resources, geographical location, ethnicity can also determine inequality in terms of income distribution. Some of these factors can be an advantage but can also potentially be a source of inequality. Gini index or income distribution inequality measure recorded income inequality in Indonesia especially Java island in 2011, 2012 and 2014 which has the highest value of inequality is DI Yogyakarta : 0.418, 0.451, 0.444. During the observation period from 2010 - 2015 which has the highest gini value in 3I Yogyakarta is Sleman District: 0.37, 0.41, 0.44, 0.38, 0.37, 0.44. Economic development in general can be defined as a process that causes an increase in real incomes per capita population of a State in the long term accompanied by improvements to the institutional system (Arsyad, 2010 : 11)

With increased per capita income, expected to solve the problem of unemployment, inequality of income distribution through *trickle down effect (drip down effect)* . In the component of economic growth, Todaro (2006: 118) one of the important components of economic growth that is technological advances or new ways of customizing work. Improvements in the field of health, education can be seen from the value of human development index (HDI). The achievement of HDI in DI Yogyakarta continues to increase from year to year. The welfare of society is expected to be realized if the ever-increasing economic growth will create employment so that it can absorb more labor at reasonable wage levels. Not only economic growth is still not evenly distributed, the value of GRDP also looks very unbalanced between islands. Java Island as the center of economy and government has the value of GRDP that far exceeds the value of other island GRDP. Java GDP contribution to the national GDP of 2013 is the largest of 61.52%. The large contribution of the Gross Regional Domestic Product (GRDP) of Java to the national GDP still leaves the economic problem in its own region, namely the unequal distribution of income shown by GRDP Per capita. The magnitude of the per capita income gap across the province is followed by a high Gini Index in some provinces . Two provinces in the island of Jawa, Jakarta and Yogyakarta, which is the province with the GRDP Per capita both highs and lows, is the province recorded the Gini index exceeds the national average. Here is the graph of GRDP Per capita in 4 Districts / 1 City in DI Yogyakarta



Source: BPS, data is processed

Rapid economic growth will increase the inequality of income distribution, this is because it does not pay attention to whether growth is greater / smaller than the rate of population growth and changes in economic structure. The more the number of unemployed people, the more people who do not receive income / wages, so the gap between the rich and the poor will worsen. More and more working people are expected to reduce income inequality. Condition of open unemployment rate in districts / city in DI Yogyakarta the highest is the city of Yogyakarta (with the lowest population), followed by Sleman district (with the highest population). Overall from 2010 -2015 tends to fluctuate up and down the open unemployment rate in this DI Yogyakarta Districts / city. With the reduced unemployment rate is expected to reduce the income inequality that occurred in DI Yogyakarta . The Gini index is quite high in two provinces in Java and some uneven achievements indicate that the problem contributes to the inequality of income distribution in Java . Based on the above description , researchers interested to examine how the influence of HDI, GRDP per capita, and open unemployment rate to income inequality in 4 districts / 1 City in DI Yogyakarta Year 2010 -2015

### Research Methodology

This research uses panel data. The period of time from 2010-2015. The unit of analysis of this study are 4 districts / 1 cities in Yogyakarta: Yogyakarta, Kulon Progo, Sleman, Bantul, Gunung Kidul. Collection of references from several articles, journals, books and internet. Definition operational variables:

1. Human Development Index (HDI) : The data is proxied with Human Development Index (HDI) according to 4 districts / 1 city in DI Yogyakarta. Data obtained from the Central Bureau of Statistics (on a scale of 0-100)
2. GRDP Per capita (PDRBPK) : Per capita income is derived from dividing regional income (GDP or GRDP) by population. Data obtained from BPS (in thousand rupiah)

3. Open Unemployment Rate (TPT) : The Open Unemployment Rate is derived from the number of unemployed divided by the labor force multiplied by 100 percent. Data obtained from BPS (in percentage units)
4. Inequality Income (IG) : The data is proxied by Gini Index (IG) according to 4 districts / 1 city of DI Yogyakarta. Data obtained from the Central Bureau of Statistics (in percentage units)

### Analysis Tools

This research uses Fixed Effect Method. Equation model of regression analysis is as follows:

$$IG_{it} = \beta_0 + \beta_1 IPM_{it} + \beta_2 PDRBPK_{it} + \beta_3 TPT_{it} + U_{it}$$

Information :

IG	= Gini index
IPM	= Human development index
PDRBPK	= GRDP Per capita
TPT	= Open unemployment rate
$\beta_0$	= Constanta
$\beta_1, \beta_2, \beta_3$	= Coefficient
$U$	= Disturbance error
$i$	= Cross Section
$t$	= Time Series

### Research Results

#### Regression Result Analysis

The results of Regression Method *Fixed Effect Model (FEM)* is as follows:

#### 1 Table 4.1 Regression Results Fixed Effect Model

Dependent Variable: GINI?  
 Method: Pooled Least Squares  
 Date: 06/21/18 Time: 21:56  
 Sample: 2010 2015  
 Included observations: 6  
 Cross-sections included: 5  
 Total pool (balanced) observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.194588	0.850857	0.228696	0.8212
HDI?	-0.004185	0.012047	-0.347346	0.7316
TPT?	0.006618	0.009664	0.684839	0.5006
PDRBPK?	0.018539	0.005200	3.564854	0.0017
<b>Fixed Effects</b>				
<b>(Cross)</b>				
KULPRO - C	0.172092			
BANTUL - C	0.080181			
GUNKID - C	0.097142			
SLEMAN - C	0.106984			
KOTYOG - C	-0.456400			
<b>2</b> Effects Specification				
<b>Cross-section fixed (dummy variables)</b>				
R-squared	0.751774	Mean dependent var	<b>7</b> 0.330667	
Adjusted R-squared	0.672792	SD dependent var	0.070805	
SE of regression	0.040502	Akaike info criterion	-3.351759	
Sum squared resid	0.036089	Schwarz criterion	-2.978107	
Log likelihood	58.27639	Hannan-Quinn criter.	-3.232225	
F-statistic	9.518392	Durbin-Watson stat	2.035904	
Prob (F-statistic)	0.000020			

**6** Based on the results of data processing value of  $R^2$  of 0.751774, this indicates that the independent variables together can explain the diversity of the dependent variable by 75 percent. The remaining 25% is explained by variables outside the model

Based on the analysis results, it is known that F stat of 9.518392 with probability F of 0.000020. when compared with 5% significance level then the probability of F is smaller than the level of significance. This explains that overall independent variables together provide a significant influence on the dependent variable

To determine whether the independent **10** variables in the regression equation are partially / individually significant in predicting the value of the dependent variable by doing the t test. Testing is done by comparing the probability value to the 0.05 level of significance. From the output in Table 4.1, it can be seen that the probability value of HDI is 0.7316 and the probability of open unemployment rate (TPT) of 0,5006 is greater than the 0.05 significance level. This shows that the variable of HDI and TPT

individually not significant or no effect on income inequality variables. As for the variable GRDP Per capita (PDRBPK) probability value of 0.0017 is smaller than the level of significance of 0.05, this indicates that the variable PDRBPK individually significant or affect the income inequality variables.

## Discussion

From the result of panel data regression with *Fixed Effect Model* we get the regression equation as follows:

$$IG_{it} = 0.194588 - 0.004185IPM_{it} + 0.018539PDRBPK_{it} + 0.006618 TPT_{it} + U_{it}$$

Further discussion of the factors affecting income inequality is described below:

### 1. Effect of HDI on Inequality of Income

The results show that when the index of human development (HDI) increased by 1 percent it will not decrease the revenue of 0.004185 percent. This is according to research conducted by Holifah (2017) that IPM no significant effect on income inequality between districts / cities in West Java Year 2012-2015. However, the results of this study differ from the research that has been done by Putri, Amar, Aimon (2012) which states that the HDI has a significant effect on income inequality that occurs between provinces in Indonesia. Uneven HDI between different regions will lead to a relatively more developed region due to its better human quality and relatively unfavorable areas due to its low human quality

### 2. Influence of GRDP Per capita on the Inequality of Income

The results show that the silmutan and partial per capita GRDP affect the income inequality between regions. The coefficient of GRDP per capita is 0.018539 with a probability of 0.0017 explaining that 1% increase of GRDP per capita will be followed by increase of income inequality equal to 0.018539 percent. This is in accordance with research conducted by Nurlaili (2016) that Per capita GRDP has a positive and significant influence on income inequality in Java Island in 2007-2013. Kuznet (in Lincolin, 2010: 292) in his analysis found a relation between income disparity and inverted per capita income levels, that is, at the beginning of the growth stage, the distribution of income or welfare tends to worsen. However, in later stages, the distribution of income will improve with increasing per capita income.

### 3. Variable of Open Unemployment Rate (TPT) to income inequality

The results show that the value of TPT has no significant effect on the income inequality. TPT variable coefficient of 0.006618 with a probability of 0.5006 explains that each 1% increase in the open unemployment rate it will not increase income inequality of 0.006618 percent. Open unemployment rates that have positive and insignificant signs are due to

the relatively low unemployment rate in DI Yogyakarta that does not affect income inequality. This is different from the results of research conducted by Nurlaili (2016), where TPT has a positive and significant impact on income inequality in Java Island Year 2007-2013 .

### **Conclusion**

Based on the analysis of factors affecting income inequality in 4 Districts / 1 City of DI Yogyakarta during the year 2010 - 2015 obtained the following conclusions:

1. The result of regression analysis shows that HDI has negative and insignificant effect on income income in districts / cities of DI Yogyakarta. This is because the probability value obtained more than the significance value of 0.05 is 0.7316 with coefficient -0.004185
2. GRDP Per capita has positive and significant effect to income inequality in districts / cities of DI Yogyakarta shown with probability value 0.0017 which means less than value of significance 0.05 with coefficient value of 0.018539. This means that the high low GDP per capita affect the high low inequality
3. The open unemployment rate has a positive and insignificant effect on income inequality in the districts / cities in DI Yogyakarta which is shown by probability value 0.5006 with coefficient 0.006618. In other words the high low open unemployment rate does not affect the increase in income inequality

### **Policy Implications**

1. Human development index and open unemployment rate which have insignificant influence to income inequality, in this case should increase of HDI which keep increasing from year to year and TPT in districts / city of DI Yogyakarta need to pay attention to other supporting factors like job opportunity, infrastructure and economic growth
2. GRDP Per capita as a factor that has a significant effect on inequality in the district / cities of DI Yogyakarta. Differences of GRDP Per capita between regions leads to income inequality. Where is known that the city of Yogyakarta has the highest GRDP Per capita and for the last 3 years 2013-2015 has a value gini above sleman district . While the GRDP Per capita Sleman is highest second after the city of Yogyakarta. Conditions like this where different GRDP Per capita must be one of the considerations in development planning that needs to be followed by the equity of the economic sector in all regions

### **Suggestion**

1. Inequality distribution income in DI Yogyakarta including medium category need to be followed up with the implementation of economic policies and non-economic support each other so that income distribution inequality can be improved so that the income distribution can be more evenly
2. Provincial Government besides paying attention to 3 elements of HDI (level of health, education level and standard of living) also need to pay attention to other supporting factors such as infrastructure, economic growth of employment opportunities so that open unemployment rate will decrease and can significantly influence inequality income
3. Conditions which different GRDP Per capita between regions should be one of the considerations in development planning. Enhancement welfare economy as measured through enhancement GRDP Per capita need followed with equitable distribution of economic sectors in all regions. Enhancement participation power work in all area too need to be considered for equity population for prevent the height current urbanization

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