



AN ANALYSIS OF REGIONAL INEQUALITY AND THE AFFECTING FACTORS IN SULAWESI ISLAND

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Article history:	Abstract:
<p>Received: 26th October 2021 Accepted: 24th November 2021 Published: 5th January 2021</p>	<p>The study aims to determine to what extent the level of Regional Inequality that occurs among Provinces in Sulawesi Island as well as to analyse the effect of Poverty, Human Development Index, and Economics Growth on Regional Inequality among Provinces in Sulawesi Island. Data used in this study are collected from Statistics Indonesia of six Provinces in Sulawesi Island. In addition, this study employs multiple regression analysis techniques with Random Effect Model approach</p> <p>The result of the analysis discloses that the level of regional inequality that occurs among Provinces in Sulawesi Island is 0,45 or is included in moderate regional inequality. In detail, Poverty has a negative and insignificant effect on regional inequality. In addition, the human development index has a positive and significant effect on regional inequality. Meanwhile, the economic growth has a positive and significant effect on regional inequality. It can be concluded that an increase in poverty by one percent will reduce the level of regional inequality by 0,022775 on the Williamson Index scale. In the meantime, an increase in the human development index by one percent will increase the level of regional inequality by 0,029644 on the Williamson Index scale, while an increase in economic growth by one percent will increase the level of regional inequality by 0,011065 on the Williamson Index scale.</p>

Keywords: Poverty, Human Development Index, Economic Growth, Regional Inequality

INTRODUCTION

National development is a series of efforts for sustainable development covering the entire life of the community, nation and state to realize national development. In the implementation of this development, all aspects of the nation's life are involved, namely the political, economic, socio-cultural, and defense and security aspects in a planned, comprehensive, integrated, directed, enduring and sustainable manner.

Regional development is a continuous improvement process that utilizes the existing resources. The function and development of the region when viewed from the point of view of national integration is to foster and make effective connections and dependencies between regions that are functionally specialized and market-oriented nationally (Aprianoor & Mukhtiali, 2015)

Based on data that has been obtained from the Central Statistics Agency (BPS) for the unstable Gross Regional Domestic Product (GRDP) and the increasing population every year in every province on the island of Sulawesi, this is the background for conducting research on the problem of regional inequality in Sulawesi. The island of Sulawesi with several factors that cause regional economic inequality between regions, the first is poverty, the Human Development Index (HDI). Third Economic Growth. This is also due to uneven regional development and is only concentrated in urban areas in each province so that less developed districts add to the poor population.

Poverty is a factor that affects regional inequality, poverty is the inability to meet basic needs and improve the situation. The gap or inequality of a region can affect the income of a region in a certain period of time. Living in poverty is not living in a lack of money and low income levels, but also many other things, such as low income levels, but also many other things, such as low health and education levels, unfair treatment in law, vulnerability to criminal threats, powerlessness in determining their own way of life (Suryawati, 2014).

According to Tri (2017:27). Economic development can be said to be successful if an area/region can increase economic growth and improve the standard of living of the community evenly or better known as the Human Development Index (HDI). The low or high HDI will have an impact on the productivity level of the population, the lower the HDI, the lower the productivity level of the population, then low productivity will affect the low income, and vice versa, the higher the HDI, the higher the productivity level of the population which then pushes the income level to be higher. tall. This causes HDI to be one of the factors that influence regional inequality.

The benchmark for development success can be seen from economic growth and the smaller income inequality between residents or regions and between sectors. However, in reality, growth is not always followed by adequate equity. Regional inequality is often a serious problem. Some areas achieved rapid growth, while other areas experienced slow growth. These areas did not experience the same progress due to several things, for example due to the lack of available resources, the tendency for investment to choose urban areas or areas that already have facilities such as transportation infrastructure, electricity networks, telecommunications networks, as well as skilled workers (Sjafrizal). , 2009).

This study aims to determine how much regional inequality exists on the island of Sulawesi and how much influence poverty, human development index, and economic growth have on regional inequality.

THEORETICAL STUDIES

According to Murty (Yuzea, 2006), regional disparity is defined as an imbalance in growth between the primary sector, secondary sector, and tertiary sector, or social sector in a district or where events occur in developed and developing countries. The difference in progress between regions means that there is not the same ability to grow which is analogous to inequality, so that what arises is the inequality of a region.

Poverty is defined as a low standard of living, namely the level of material shortages compared to the standard of living generally applicable in the society concerned. The inability to meet the minimum standard of living in accordance with the level of living is considered poverty (Todaro, M. p. and Smith, S. C., 2006).

The effect of poverty level on inequality has a negative effect. Where will happen when the poverty rate increases it will also increase economic inequality. This inequality is a serious problem that occurs especially in developing countries, because development inequality is the forerunner to the formation of poverty and various other social problems which take a long time to handle. Therefore, equitable development should be realized immediately so as to reduce disparities between regions (in Puti and Pipit's research, 2017).

According to the Central Statistics Agency (BPS), the Human Development Index (HDI) is a measure of development achievement based on a number of basic components of the quality of human life. Human development is calculated based on data that describes four components, including life expectancy in the health sector, literacy rate and average length of schooling in education, and the purchasing power of the community towards a number of basic needs as seen from the average per capita expenditure as an approach. income in the field of development for a decent life.

Low or high Human Development Index (HDI) will have an impact on the productivity level of the population, the lower the HDI the productivity level of the population will also be low then low productivity will affect low income, and vice versa the higher the level of population productivity which then pushes the income level to be lower. the higher it is. The problem that occurs is that the HDI in each region is different, this makes the HDI can affect the inequality between regions/regions.

From an economic point of view, economic development has two important effects, namely the increasing prosperity or standard of living of the community and the creation of new job opportunities due to the increasing population.

The success of development can be seen from economic growth and the smaller inequality. However, in reality, growth is not always followed by adequate equity. Some areas achieved rapid growth, while other areas experienced slow growth. These areas did not experience the same growth progress due to several things such as the lack of available resources, the tendency for investment (investors) to prefer urban areas compared to rural areas, areas that already have transportation infrastructure facilities, electricity networks, telecommunications networks, as well as skilled labour. Sjafrizal, 2009 (in Puti and Pipit, 2017).

RESEARCH METHOD

1. TIME AND PLACE OF RESEARCH

The object in this study is the island of Sulawesi with the research locations being districts/cities in every province on the island of Sulawesi. On the island of Sulawesi, there are 6 provinces, namely: North Sulawesi Province, Central Sulawesi Province, South Sulawesi Province, Southeast Sulawesi Province, Gorontalo Province, and West Sulawesi Province. This research was taken in the last 5 years, namely 2011 to 2020.

2. APPROACH AND RESEARCH DESIGN

This study uses descriptive research with a quantitative approach, namely the fact-finding process by describing existing data. This research was conducted to emphasize the analysis of numerical data (numbers) and processed with certain statistical methods as well as to describe accurately and concisely a condition in the present. Quantitative research aims to test the theory of constructing facts showing the relationship between variables, providing statistical descriptions, estimating and predicting results.

3. DATA ANALYSIS METHOD

a) WILLIAMSON INDEX ANALYSIS

Based on the problem, this research is to measure the level of regional inequality, the Williamson Index is needed as a tool to measure it. This method is obtained from the calculation of per capita and population in a country or region. The Williamson Index is systematically calculated as follows:

$$IW = \frac{\sqrt{\sum(Y_i - Y)^2 f_i/n}}{Y}$$

Description

- WI = Williamson Index
- Y_i = GRDP per capita in Regency/City i
- Y = GRDP per capita Province average i
- f_i = Total population Regency/City i
- n = Total Population of Province i

The Williamson index obtained is between 0 (zero) to 1 (one). If Williamson's inequality is close to 0 then regional inequality between regencies/cities in Gorontalo Province is low. On the other hand, if Williamson's inequality is close to 1, the regional disparity between districts/cities in each province on Sulawesi Island is high.

b) PANEL DATA REGRESSION

This research uses panel data regression model. Panel data is data obtained by combining cross section and time series. Data from 6 provinces on Sulawesi Island are included in the cross section study, while the data from 2011 to 2020 in this study are time series data.

The regression model used for the second problem in this study is as follows:

$$WI_{it} = \beta_0 + \beta_1Poverty_{it} + \beta_2HDI_{it} + \beta_3EG_{it} + \mu_{it}$$

Description:

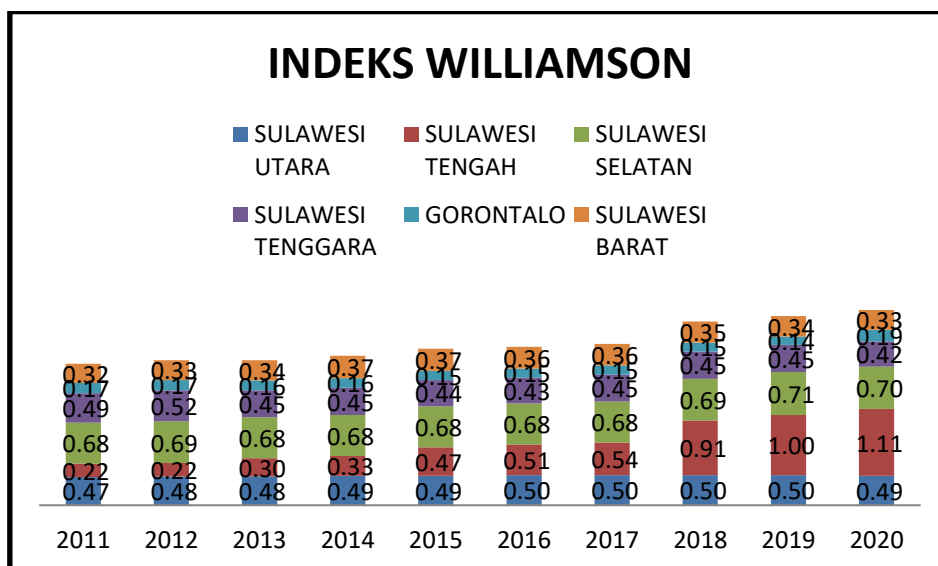
- WI = Williamson Index
- t = time (time series 2011-2020)
- i = cross section (6 provinces in Sulawesi Island)
- β = constant
- β₁, β₂ = regression coefficient of X
- X₁ = poverty
- X₂ = HDI
- X₃ = Economic Growth
- μ = Error Term

The basis of testing used in this study is a probability of 1% or 0.01, 5% or 0.05%, and 10% or 0.10. For decision making, based on the hypothesis H₀ = the regression coefficient is not significant, and H₁ = the regression coefficient is significant. So in conclusion, if p < α, then H₀ is accepted and if p > α, then H₁ is rejected.

RESULT OF RESEARCH

1. Williamson Index Analysis Result

Grafik 1.1
Williamson Index of Sulawesi Island 2011-2020



Source: Processed Data Excel (2021)

Based on the results of the calculation of regional inequality as shown in graph 4.1 above, it shows that the level of regional inequality in 6 provinces on Sulawesi Island during the 2011-2020 period tends to increase for each province. In 2018 to 2020 the level of inequality in Central Sulawesi Province reached a value of 1.1 which is the highest level of inequality among the 6 provinces on the island of Sulawesi and also experienced a high level of inequality because it had exceeded 1 (one). This is conditioned because in late 2018 several city districts in the province of Central Sulawesi experienced natural disasters that were quite severe so that there were many impacts caused by natural disasters such as many deaths and no economic conditions at all.

South Sulawesi Province is the second province for the moderate level of inequality because it exceeds the 0.50 average. This is indicated because the province of South Sulawesi is a province with a fairly high population level and the province of South Sulawesi is an advanced region of several provinces on the island of Sulawesi, causing many factors that affect the level of inequality. Slightly different from South Sulawesi Province, North Sulawesi is also a medium level of regional inequality, because the average level of inequality is 0.50. In addition, for the Provinces of West Sulawesi and Southeast Sulawesi, the level of inequality is below 0.50, which means that the two provinces experience a low level of inequality. Gorontalo Province is the province with the lowest level of inequality among the six provinces on Sulawesi Island with an average score below 0.20. This is because the GRDP per capita in the province of Gorontalo is below the GRDP per capita of other provinces on the island of Sulawesi.

However, when viewed from the overall level of regional inequality between provinces on the island of Sulawesi, it can be concluded that the level of inequality that occurs in each province is relatively low, because from the results of the calculation of the level of inequality between provinces on the island of Sulawesi which has been averaged 0.45 which means the level of regional inequality on the island of Sulawesi is moderate.

2. Regression Analysis Results
a) Regression Analysis

Table 1.1
Output Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.351510	0.930311	-1.452751	0.1519
KEM?	-0.022775	0.015521	-1.467382	0.1479***
IPM?	0.029644	0.011743	2.524443	0.0144**
PE?	0.011065	0.006155	1.797646	0.0776*
Random Effects				
(Cross)				
_SULUT--C	-0.114108			
_SULTENG--C	0.119148			
_SULSEL--C	0.111761			
_SULTRA--C	-0.019331			
_GORONTALO--C	-0.111828			
_SULBAR--C	0.014359			
Weighted Statistics				
R-squared	0.245095	Mean dependent var	0.162640	
Adjusted R-squared	0.204654	S.D. dependent var	0.143319	
S.E. of regression	0.127815	Sum squared resid	0.914848	
F-statistic	6.060516	Durbin-Watson stat	0.229053	
Prob(F-statistic)	0.001199			

*Keterangan: ***) 1%, **) 5%, *) 10%*

Source: Processed Data E-Views (2021)

Based on the results of the panel data regression analysis output in the E-Views application above, it can be explained as follows:

- 1) If the influence of all independent variables (Poverty, Human Development Index, and Economic Growth) is ignored, then the average level of Regional Inequality observed during 2011-2020 decreases by 1.351510.
- 2) Poverty has a negative effect on Regional Inequality with every 1 percent increase in the percentage of poor people eating will reduce Regional Inequality by 0.022775.
- 3) The Human Development Index has a positive effect on Regional Inequality with every 1 percent increase in the Human Development Index will increase Regional Inequality by 0.029644.
- 4) Economic Growth has a positive effect on Regional Inequality with every 1 percent increase in Economic Growth will increase Regional Inequality by 0.0111065.
- 5) Based on the estimated impact of the random model, the Provinces of North Sulawesi, Southeast Sulawesi, and Gorontalo, are the regions with negative growth on Regional Inequality. Meanwhile, the Provinces of Central Sulawesi, South Sulawesi and West Sulawesi have a positive effect on Regional Inequality.

b) Multicollinearity Test

Multicollinearity is a linear relationship between independent variables in multiple regression. Testing on multicollinearity research is done by testing the correlation coefficient (r) between independent variables. The existence of multicollinearity problems can be seen from the value of VIF (Variance Inflating Factor) as follows:

Table 1.2
Multicollinearity Test

VARIABEL	R-SQUARED	TOLERANCE	VIF
KEM?	0,624580	0,375420	2,663683
IPM?	0,619036	0,380964	2,624920
PE?	0,223449	0,776551	1,287745

Source: Processed Data (2021)

Based on table 1.2 above, the results of data analysis with Centered VIF values for Poverty, HDI, and Economic Growth are less than 10, meaning that there is no multicollinearity problem.

c) Heteroscedasticity Test

The results of the Heteroscedasticity Test using the Glejser method on the E-Views application obtained the following results:

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Table 1.3
Heteroscedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.546264	0.567447	-2.724948	0.0086
KEM?	0.008234	0.008291	0.993139	0.3249
IPM?	0.022623	0.007341	3.081530	0.0032
PE?	0.004707	0.004329	1.087497	0.2815

Source: Processed Data E-Views (2021)

Based on table 1.3 above, the results of data analysis state that Poverty and Economic Growth obtain a probability value greater than the alpha value of 0.05, so it can be concluded that there is no heteroscedasticity problem, but HDI has heteroscedasticity problems.

DISCUSSION OF RESEARCH

1. THE LEVEL OF REGIONAL INEQUALITY ON THE ISLAND OF SULAWESI

The results of research on the level of regional inequality between provinces on Sulawesi Island in 2011 to 2020 carried out using the Williamson Index formula obtained an average of 0.45 so it was concluded that the level of provincial inequality on Sulawesi Island was still relatively low.

A high Williamson index indicates a high data variation, or it can be interpreted as an uneven distribution of data. In line with several studies in several empirical studies that high GRDP in a region tends to encourage the Williamson Index to get bigger. This is a consequence of the widening variation in GRDP because the growth that occurs in the aggregate area is not evenly supported by the regions that have a share in the region. In this case, regional inequality that occurs at the provincial level due to high GRDP growth is not supported by high growth in several districts in each province equally.

This result is in line with the theory of regional inequality by Syafrizal (2018) that the content of natural resources and demographic conditions in each region causes the ability of a region in an effort to encourage the development process to be different so that from the difference in regional wealth it is ultimately the developed and underdeveloped regions, causing regional disparities.

2. THE EFFECT OF POVERTY ON REGIONAL INEQUALITY

According to the results of multiple regression analysis on the effect of poverty on regional inequality, this study shows a negative and significant effect. Every 1 percent increase in the percentage of poor people will reduce regional inequality on the island of Sulawesi during the 2011-2020 period. Basically, poverty can increase the disparity in the development of a region between provinces. However, in this study, poverty has a negative effect and an increase in the percentage of the population of poverty can only reduce regional inequality.

The low level of education, education is a basic need that must be met by each person so that if a person's level of education is good, he can meet his basic needs. Limited employment opportunities are also still related to poverty because limited employment opportunities will have consequences for poverty, with limited employment opportunities, people cannot meet their needs, because by working someone gets wages which will later be used to meet these needs. From each of these indicators, there are many in the underdeveloped areas of a province so that it can cause regional disparities.

Poverty and development inequality are like an element that is difficult to separate. Relative poverty is a poor condition due to the influence of development policies that have not been able to reach all levels of society, causing inequality. Poverty exists due to social inequality in a region.

This is the same as the research of Puti Andiny & Pipit Mandasari (2017) entitled "Analysis of Economic Growth and Poverty on Inequality in Aceh Province" in this study explains that the poverty variable has an insignificant negative effect, thereby reducing the regional inequality variable.

3. THE EFFECT OF HUMAN DEVELOPMENT INDEX ON REGIONAL INEQUALITY

The Human Development Index in this study shows a positive and significant influence on regional inequality. So that every 1 percent increase in the Human Development Index will increase Regional Inequality between provinces on Sulawesi Island during the 2011-2020 period. Simultaneously the Human Development Index in every province on Sulawesi Island along with other variables also have an equally influential effect on Regional Inequality on Sulawesi Island.

According to Becker, the Human Development Index has an effect on inequality, but Becker only examines the role of formal education on economic growth. Meanwhile, in the Human Development Index, there are three components, namely the health index, the education index and the expenditure index. So that the estimate made by taking all the components that make up the Human Development Index is different if it only takes one component.

A good level of health for people in each region, equitable education as well as a stable economy will increase the Human Development Index, if the Human Development Index is high it will reduce the level of regional inequality in an area.

This is not in line with research by Regita, et al (2018) that the Human Development Index has a negative and significant influence on regional inequality, this is indicated by the value of the Human Development Index which has increased and affects the decrease in regional inequality. However, it is in line with the research of Fitrah and Nugroho (2018) that the Human Development Index has a positive and significant effect on regional inequality.

4. THE EFFECT OF ECONOMIC GROWTH ON REGIONAL INEQUALITY

Economic growth has a positive and significant effect on regional inequality. So that every 1 percent increase in economic growth will reduce the level of regional inequality.

Economic growth is an indicator of community welfare in an area. If the economic growth of a region increases, what is expected to be enjoyed equally by the whole community. Economic growth will directly and indirectly affect the problem of inequality. Inequality in the distribution of income is inequality in economic development between various regions in a region which will also cause inequality in the level of income per capita between regions (Kuncoro, 2004).

Rapid economic growth does not necessarily result in success in development. In fact, rapid economic growth will have an impact on inequality. This is because economic growth is not always accompanied by equity.

This study is not in line with research conducted by Regita, et al (2018) that when there is an increase in economic growth it will reduce the level of regional inequality. However, this study is in line with research conducted by Puti and Pipit (2017) that economic growth has a positive effect on regional inequality.

KESIMPULAN

Based on the results of the analysis and discussion of the results of the study, so that this study produces several conclusions from the Analysis of Regional Inequality and the Factors that influence the Island of Sulawesi as follows:

1. The level of regional inequality that occurs in each province on Sulawesi Island is 0.45 on the Williamson Index scale, which means that the level of inequality between provinces on the island of Sulawesi is moderate.
2. Poverty has a negative and insignificant effect on Regional Inequality with every 1 percent increase in the percentage of poor people eating will reduce Regional Inequality by 0.022775 IW scale.
3. The Human Development Index has a positive and significant effect on Regional Inequality with every 1 percent increase in the Human Development Index will increase Regional Inequality by 0.029644 IW scale.
4. Economic Growth has a positive and significant effect on Regional Inequality with every 1 percent increase in Economic Growth will increase Regional Inequality by 0.011065 IW scale.

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