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Research Article

Factors Analysis on Affecting Regional Inequality in South Sulawesi Province, 2010-2016

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Abstract: The diverse characteristics of the Indonesian region can affect the creation of different patterns of economic development. This study aims to analyze the effect of regional income, labor force and human development index on regional inequality in South Sulawesi Province during 2010-2016. The province of South Sulawesi was chosen because based on data from the province's central statistical body it showed significant economic growth in 2016. The data used in this study used data from the statistical body of the province of South Sulawesi. Data analysis method used in this study uses the Williamson Index method. The results of this study indicate that local income variables have a negative but significant effect on regional inequality. Labor force variables show a positive and significant effect on regional inequality, while the human development index variable shows a positive but not significant effect on regional inequality.

Keywords: Regional Inequality, Williamson Index, Economic Growth.

INTRODUCTION

Indonesia's economic conditions in 2016 grew 5.02% higher than the previous year's achievements of only 4.88%. Indonesia's economic structure in 2016 was spatially still dominated by provincial groups in the islands of Java and Sumatra (BPS, 2017). This economic growth is an indicator that can be used to measure development in an area. Economic development can be defined as a process that causes an increase in real income per capita of a country's population in the long term and is accompanied by an improvement in the institutional system (Chen, 2007).

In the process of equitable economic development, Indonesia as an archipelagic country certainly has regional characteristics that have the potential to influence the creation of different economic development patterns, so as to enable the occurrence of non-uniformity in the formation of development patterns. This unevenness is able to give birth to uneven growth which in turn can cause some regions to grow quickly while other regions grow slowly (Hill, 2008).

The current phenomenon shows a polemic between growth, equity and balanced sustainable development in order to create justice in the community. Although it was initially thought that equality would be achieved if growth occurred. But reality doesn't say that. Economic growth that occurs in one region does not necessarily lead to the same growth in other regions (Freeman, 2002).

Inequality arises because of differences in the content of natural resources and differences in demographic conditions found in each region. So that the ability of an area in the development process also becomes different. Inequality also has implications for the level of community welfare between regions which will affect the formulation of regional development policies undertaken by the government (Sjafrizal, 1997). Departing from the above conditions, development must be directed not only at the area of growth but also includes aspects of equity and sustainability in the future. Areas that are underdeveloped or left behind have a strong dependence on outside regions (Martin, 2010). The lack of equity in the development process will result in gaps or disparities between regions. Inequality between regions can of course cause social jealousy, vulnerability to regional disintegration and increasingly sharp economic disparity (Adisasmita, 2014).

From the definition of development and regional disparity as well as the characteristics of Indonesia as an archipelago, how do we see the rate of economic growth occurring in South Sulawesi as a center point for economic growth in the eastern part of Indonesia? If we look at the data in 2016, the economy in South Sulawesi Province recorded a growth of 7.41% or higher compared to the previous year which was at the level of 7.17% (BPS, 2017). However, a fairly high increase in per capita GRDP did not occur evenly throughout the Province of South Sulawesi. The GRDP figure is only dominated by a few cities such as Makassar City, Bone Regency, and Pangkep Regency. Whereas other regencies / cities can only generate a small amount of income. This is what then has the potential to cause problems that will be faced by local governments. For this reason, research needs to be carried out to examine regional disparities in South Sulawesi Province.

The theory that explains the phenomenon of inequality is Kuznet's Theory (1955) with the reversed U hypothesis. This theory explains that income inequality between regions increases at the beginning of the economic development phase and then decreases with the economic development process. Growth in the early stages of development tends to focus on the modern sector of the economy which at that time was small in absorbing labor. Inequality then began to grow due to the increasing disparity between modern and traditional sectors. The increase occurred because the development of the modern sector is faster than the traditional sector. But in the long run, when economic conditions reach maturity assuming a free market mechanism and the mobility of all factors of production between countries without the slightest obstacle, the difference in the rate of output growth between countries will tend to decrease along with the level of per capita income. With a higher average growth rate in each country, this will eventually eliminate the gap. Many factors affect the imbalance of a region. Jhingan (1990) says that inequality that occurs in an area due to the magnitude of the backwash effect caused compared to the spread effect (spread effect). The reverse effect in the form of capital transfers or investments causes greater inequality between other regions.

Regional disparity according to the ILO is the difference in economic performance and welfare between regions. According to Sirojuzilam (2005) Inequality that occurs not only to the distribution of community income, but also occurs to development between regions within the territory of a country. Inequality must be assessed from several aspects such as social, location conditions, politics, administration, institutional, environment, public infrastructure, and others (Gajdos, 2001).

Traditional approaches that only assess inequality in economic terms are considered unfavorable in explaining such inequality. According to Kutscherauer (2010), regional inequality can be seen from two perspectives namely vertical and horizontal perspectives. The vertical perspective looks at inequality from an administrative angle, for example inequality at the European level, inequality at the national level and inequality at the local level. While the horizontal perspective sees inequality in terms of aspects that influence it such as social, economic and physical aspects. Another opinion expressed by Karin Vorauer in Aprianoor & Muktiali, (2015) suggests that regional inequality is an imbalance of spatial structures within regions or between regions. This study analyzes how much influence the region's original income, labor force and human development index on regional inequality in South Sulawesi Province during 2010-2016.

METHODOLOGY

The type of data used in this study is in the form of panel data, which is a combination of cross section with time series data. The data used include Williamson Index data which is a measure of regional inequality, regional own-source revenue (PAD), labor force (AK), and human development index (HDI). The data in the research object were obtained from the Central Statistics Agency (BPS), relevant agencies or agencies as well as literature that could support this research.

The operational definitions of the variables used in this study include: (1) Dependent Variable, the Williamson Index that occurred in South Sulawesi Province in the period 2010-2016. According to Sjafrizal (2012) the Williamson Index is a measure of income inequality to analyze how large the gap between regions is. These variables are expressed in units of percent (%). (2) Independent variables, namely the independent variables in this study are regional original income (PAD), labor force (AK) and human development index (HDI) in South Sulawesi Province during 2010-2016.

The related indicators in this study include (1) Regional Original Revenues are regional income derived from regional tax proceeds, regional retribution results, the results of the management of separated regional assets and other legitimate regional original income collected based on regional regulations in accordance with statutory regulations laws that apply. These variables are expressed in units of Rupiah. (2) Human Development Index, HDI according to BAPPENAS, which is a composite index calculated as a simple average of three indices consisting of life expectancy index measured by life expectancy at birth, education index measured by a combination of old school expectations and average average length of schooling, as well as an index of decent standard of

living measured by adjusted per capita expenditure or purchasing power parity (BPS, 2017). HDI variables are expressed in units of percent (%). (3) Work force is the number of residents with working age that includes residents who are already working or who are looking for work. While the definition of working age is the age level of someone who can work and earn their own income. The population that has entered the working age level is for those aged at least 15 years to 65 years based on the provisions of the Indonesian government.

$$VW = \frac{\sqrt{\sum(Yi-Y)2.fi/N}}{Y}$$ .... (1)

Description:
Yi = regional GDP per capita i
Y = average regional GDP per capita in all regions
fi = Number of area residents i
n = Total population of the whole area
    The Williamson Index ranges from 0 <VW <1,

The AK variable is expressed in soul units. (4) Regional Inequality.

In this study, the authors use the Williamson Index as a measurement tool because this method is used not only to measure inequality between countries but also inequality between regions in a country. The calculation of this value is based on the variation index (CV) and Williamson modifies this calculation by weighing it in proportion to the area's population.

RESULTS AND DISCUSSION

Table1. Testing Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	9.868482	(23,141)	0.0000
Cross-section Chi-square	161.154894	23	0.0000
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	90.345239	3	0.0000

Regional disparities between districts / cities in South Sulawesi Province are calculated using the Willliamson Index calculation method. Data needed includes data on provincial and district / city Original Revenue (PAD), provincial and district / city Work Force (AK) and provincial and district / city Human Development Index (HDI). Where according to

Sjafrizal (2012) if the Williamson index value approaches number 1, the inequality that occurs tends to be high and further away from the number 1 inequality that occurs tends to be low. Based on data processing between PAD, AK and HDI, the Williamson Index (IW) results are obtained as follows:

Tabel 2. Indeks Williamson

Year	Williamson Index (%)
2010	0,363
2011	0,365
2012	0,348
2013	0,361
2014	0,361
2015	0,360
2016	0,360

Based on the data in table 2. The Williamson Index above, it is known that the Williamson index (IW) of South Sulawesi Province during the period of 2010 to 2016 was valued at 0.36, only in 2013 was there a decline in the value of IW of 0.348. If you look at the average Williamson Index value from 2010-2016, it can be indicated that the value of the gap that occurred in South Sulawesi Province is still quite high

(IW figure is close to 1). This high level of regional inequality occurs because economic and development activities are only centered in several regions such as Makassar City, East Luwuk Regency, Maros Regency, Pangkep Regency, Wajo Regency and Pinrang Regency. In other regions, such as Jeneponto Regency, Gowa Regency and Tana Toraja Regency, they still have a small per capita GRDP.

In addition, over the past 16 years the contributions of Makassar City and East Luwu Regency to the South Sulawesi Province GRDP remained dominant. This cannot be denied anymore because the economic structure of Makassar City is generally driven by the tertiary sector namely industry, services and trade while the economic structure of East Luwu Regency is driven by the mining sector. While 22 other districts / cities are generally driven by the primary sector, namely the agricultural sector. The industrial, service and trade sectors are the sectors that create the most added value compared to the agricultural sector.

Moreover, the elasticity of employment in these three sectors is greater than the agricultural sector. This means that the value added of agricultural production is smaller than the value added of other sectors, so that regions that have an economic base in the non-agricultural sector have high economic value. This research is proven by Reniwati's research in her study entitled Analysis of Economic Sectors in South Sulawesi Province for the period of 2007-2011 stating that the agricultural sector is in an undeveloped sector so that its economic value is smaller compared to other sectors that have more economic value height of agriculture.

Table 3. Eviews Analysis Results

Variable	Coefficient	Standard Error	t-statistic	Probability
A constant	0.299081	0.081539	3.667.960	0.0003
PAD	-5.88E-14	2.64E-14	-2.225.371	0.0276
AK	3.66E-07	6.46E-08	5.667.853	0.0000
HDI	0.000202	0.001238	0.163041	0.8707
Prob(F-statistic) Adjusted R-squared	0.000000 0.959172			

Regional Original Income and Regional Inequality

Table 3 shows the Pad coefficient value of -5.88E-14 with a probability of 0.0276 which is greater than $\alpha = 0.05$, indicating that local revenue has a negative and significant effect in South Sulawesi, meaning that if there is an increase in regional original income of 1%, caused a decrease in regional inequality by 0.0276 or 2.76%. This shows that the increase in PAD had an impact on the decrease in regional inequality in South Sulawesi. This is in line with the research of Aprianoor., et al (2015) on the study of regional inequality in the province of West Java, stating that the difference in regional original income certainly affects the economic performance of a region. Regional income can finance developments in the region. According to Siddik., et al (2002) states that the ability of an area to generate income that is very diverse, affect the ability of the region in the development process.

Work Force and regional inequality

Table 3 shows the labor force coefficient of 3.66E-07 with a probability of 0.0000 which is smaller than $\alpha = 0.05$, indicating the labor force has a positive and significant effect in South Sulawesi. This means that if the labor force increases by 1% it will increase regional inequality by 3.66%. This is consistent with Sjafrizal's theory which states that as a result of subtle migration, the excess workforce of an area cannot be utilized by other regions that need it. As a result, development disparities between regions will tend to be high because the advantages of an area cannot be utilized by other regions that need it, so that underdeveloped regions are difficult to push the development process.

Human Development Index and regional inequality

Table 3 shows the HDI coefficient value of 0.000202 with a probability of 0.8707 which is greater than $\alpha = 0.05$, indicating that the HDI has no effect on regional inequality in South Sulawesi. A positive coefficient value indicates that there is an increase in HDI in South Sulawesi, but this condition does not have an influence on regional inequality because regions in South Sulawesi have experienced an even increase in HDI. According to Todaro (2011) a good HDI can reduce inequality in society.

CONCLUSION

Testing the model using the chow test shows that the FEM model is more appropriate to be used than the PLS model. Furthermore, the Hausman test showed that the FEM model was more appropriate than the REM model. Therefore, this study decided to use the FEM model because the FEM model was more appropriate than the PLS and REM models. Determination coefficient test results (R2) show the magnitude of the R-squared value of 0.959172 or 95.92% means that the dependent variable of regional inequality (Y) can be explained by the independent variables in the model of 95.92%, and the remaining 4.08% of variable variations regional inequality (Y) is explained by other variables not included in the model. The results of the influence test (t test) on the dependent variable of regional inequality are seen from the probability value of each independent variable, that the Labor Force variable has a positive and significant effect, while the PAD variable has a negative and significant effect and the HDI variable has no effect.

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