

# ECONOMIC SHIFT AND INEQUALITY BETWEEN PROVINCES IN SULAWESI ISLAND, REPUBLIC OF INDONESIA

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## ABSTRACT

The study aimed to investigate shifts in economic growth as well as inequality of development between provinces in Sulawesi Island by Klassen typology analysis and Williamson Index.

The result revealed that during the last five years up to the research timeline (2014-2018), two of six provinces in the island experienced economic decline. The inequality rate in Sulawesi Island is relatively low, as reflected by the average Williamson Index value that is approaching zero or 0.0796. The Williamson Index value in 2014 was 0.142, higher than the value in 2018, scoring 0.036. The number suggests significant decline in inequality rate.

Therefore, equal distribution of economic growth is essential by developing sectors with potential contribution in boosting the region's GRDP. Moreover, the study also views the importance of taking into consideration the three causes of economic inequality, i.e., the region's demographic character, human resources, and foreign investment rate.

**Keywords:** economic growth, klassen typology, williamson index, sulawesi island

## INTRODUCTION

Regional development aims to boost economic growth and income equity. In other terms, equity of income is similarly essential to a region's economic growth in contributing to the community wealth [1]. Defines economic development as an impactful process to support a region's long term per capita income [2].

Williamson indicates that inequality between regions often surges in the earlier phase of economic development; this blames the disparate growth rate existing between the regions [3]. Economic development is also potential to instigate inequality between regions in terms income [4].

The increasing economic growth that nurtures new opportunities is also followed by surging regional gap, particularly in developing countries [5].

The national government has taken some measures to support the acceleration of local economic growth; one of them has been carried out in the form of regulations [6]. As stipulated in Article 3, Section (1) of Law No. 32/2004 concerning regional government, regional autonomy refers to the rights, authority, and duties of autonomous regions to independently take control and manage their own governmental affairs and local community interests by referring to the existing regulations. The objective of the previous regulation is to accelerate the achievement of public welfare. A well-planned development is capable of increasing the quality of life, [7].

The improvement effort of public welfare state requires support from optimum economic growth and equal distribution of per capita income. That being said, econo-

mic growth without income equity is more likely to lead to unequal regional development [8]. Inequality in regional development is apparent if there exists both developed and underdeveloped areas within a region. Inequality has become a common issue in the process of economic development of a region; it is due to the diverse demographical contents between regions. Such diverse features lead to disparity in each region's capability to increase economic growth as a means of support to the local development, [9].

On top of that, inequality between regions also blames the social and geographical setting [10]. These variables will in turn slow down the region's economic growth [11].

Ranking in the fourth of five biggest islands of Indonesia, Sulawesi Island is about 174.600 km<sup>2</sup> in size. Within the Island reside six provinces, i.e. South Sulawesi, Southeast Sulawesi, West Sulawesi, North Sulawesi, Central Sulawesi, and Gorontalo.

The city of Makassar and Manado is regarded as the island's metropolitan city, as both cities feature the hustles of shopping centers and industrial estate.

Makassar is both the industrial epicenter and the capital of South Sulawesi province; the city is also popular for candidate students enrolling for various university programs from undergraduate to doctoral level. In the meantime, Manado city is the capital of North Sulawesi province as well as the province's most visited city from tourists around the world.

The previous cities have relatively more developed economic growth compared to other cities on the island. This echoes the notion that industry that is heavily focused within a particular region could potentially lead to regional economic convergence [12].

**Table 1.** Per-capita GRDP of Provinces in Sulawesi Island

Province	Per-capita GRDP (million rupiah)					Average
	2014	2015	2016	2017	2018	
West Sulawesi	19.23	20.25	21.07	22.05	23	21.12
South Sulawesi	27.75	29.43	31.33	33.23	35.35	31.42
Central Sulawesi	25.32	28.78	31.15	32.86	34.42	30.51
North Sulawesi	27.81	29.2	30.68	32.3	33.92	30.78
Southeast Sulawesi	27.9	29.2	30.48	31.89	33.29	30.55
Gorontalo	18.62	19.47	20.43	21.48	22.54	20.51

Source: data processed by the researchers

The table 1 above asserts that the average per-capita income of South Sulawesi province is the highest compared to five other provinces with average GRDP of 31.42 million rupiahs. On top of that, North Sulawesi province ranks second with average per-capita GRDP of 30.78 million rupiahs. In the meantime, Gorontalo sits at the bottom with the lowest per-capita GRDP among all provinces in the island. Gorontalo province was separated from North Sulawesi in 2000. The average GRDP of this province during last five years is 20.51 million rupiahs. As depicted in the average per-capita GRDP from the data above, the economic inequality between provinces in Sulawesi Island is highly apparent. Such gap is said to be caused by lack of equitable economic development [13].

A study by Umiyati, on inequality between regional development in Sumatra Island has elaborated that inequality is relatively high in Riau Islands province, with index value of 0.325. This also takes into account that the province is a newly-founded province separated from Riau province [14]. In the meantime, conducts research on development gap in Gorontalo province during 2012-2016 and discovers that the economic development inequality between the regency/city is relatively low, [15]. This is said to be caused by difference of demographic features in each region with varying potential sectors, which will in turn influence the regions' income.

In the meantime, the economic disparity between regions in South Kalimantan province, as studied by Maulana, has declined; the disparity, however, is still in an alarming situation. The per-capita GRDP in some regencies in South Kalimantan province is highly dependent on the regions coal production as the main natural resources, [16].

In their study concluded that the intra-provincial regional inequality in eastern part of China had declined thanks to the noticeable economic turnaround in regions/provinces that previously experienced slower growth rate or lack of industrial activities [17]. During the 90s, the whole eastern part of China saw relatively significant growth, leading to high proportion of intra-provincial regional inequality; as a result, the per-capita GDP growth experienced convergence. Aside from industrial growth, other factors such as environmental conditions, geographical setting, and education level are said to contribute to the regional inequality, [18].

The study aimed to discover the intra-provincial development gap in Sulawesi island as well as to elaborate on the trends of economic growth in the island from 2014 to 2018. Klassen typology analysis was employed to identify the economic position of each province by analyzing the provinces' economic growth and per capita income during last five years.

## METHOD

The research involved secondary qualitative data gathered from various sources and literatures that are relevant to the present study, as well as the statistical data from the Bureau of Statistics in South Sulawesi, West Sulawesi, Central Sulawesi, Southeast Sulawesi, North Sulawesi, and Gorontalo from 2014 to 2018. The data were in the form of raw numerical data, thus requiring further analysis. The research took place in six provinces of Sulawesi island as the research object. Further,

the qualitative literary study data were obtained from relevant publications.

The study employed Williamson Index to analyze the intra-provincial regional inequality based on per-capita GRDP; the index was formulated by the following equation:

$$IW = \frac{\sqrt{\sum_i (y_i - y)^2 \frac{f_i}{n}}}{y}$$

The equation is described as follows: IW stands for Williamson Index,  $y_i$  stands for the per-capita GRDP of the province,  $y$  refers to the average per-capita GRDP in Sulawesi island,  $f_i$  resembles the total population of province I, and  $n$  resembles the total population in Sulawesi Island. The IW measurement criteria comprise index value, in which if the value approaches 0 (zero), it indicates that the inequality is smaller, or the economic development is equitable. On the contrary, if the IW value approaches 1 (one), it shows larger economic inequality. In other words, the criteria consist of the following conditions: (1) an IW value of  $\leq 0.3$  indicates that the economic inequality is relatively lower; (2) an IW value of  $> 0.3 - 0.4$  signifies that the economic inequality is moderate; while (3) an IW value of  $> 0.4$  shows that the economic inequality is higher.

Further, Klassen typology was employed to map out the structural condition of each region's economic growth by involving two main indicators, i.e., per-capita GRDP and economic growth, [19].

## FINDINGS AND DISCUSSION

### Profile of Sulawesi Island

As one of the biggest among islands in Indonesia, Sulawesi Island has an area of  $\pm 174,600 \text{ km}^2$ . The Island consists of six provinces, i.e., South Sulawesi, Southeast Sulawesi, West Sulawesi, North Sulawesi, Central Sulawesi, and Gorontalo. Gorontalo and West Sulawesi are the youngest provinces in the island, founded in 2000 and 2004 in respective order. The island's topographical feature comprises

mostly mountains and plains with height of 50 meters above sea level that make up 10.3% to the island's area, [20]. The island forms the shape of rose with spider-like features, or resembles Profile of Sulawesi Island

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The island forms the shape of rose with spider-like features, or resembles the shape of K letter stretching from the North to the Northeast, East, and Southeast. Administratively, the island shares its border with the country of Philippines to the North, Kalimantan Island to the West, Flores Island to the South, Timor Island to the Southeast, and Maluku Island to the East. The island boasts its potentials in sectors, e.g., food agriculture, plantation, marine fisheries, as well as nickel, oil, and gas mining. Sulawesi Island is known for its strategic position as the connecting bridge between islands, such as Maluku, Nusa Tenggara, Papua, Kalimantan, Java, and Bali [21].

### Klassen Typology Analysis

Klassen typology is an analysis of regional economy that involves data of growth and per-capita income to classify the economic sectors between regions. Based on the Klassen typology, the position of six provinces in Sulawesi Island in 2014 and 2018 is shown in the following Tables 2 and 3.

**Table 2.** Klassen typology matrix in 2014

		Y	
		R	
		$Y_i > Y$	$Y_i < Y$
Ri	$Ri > R$	<b>Quadrant I Advanced and Rapidly Growing Sector</b> (South Sulawesi)	<b>Quadrant III Potential or Fast-growing Sector</b> (West Sulawesi and Gorontalo)
	$Ri < R$	<b>Quadrant II Depressed-growth Sector</b> (Central Sulawesi, North Sulawesi, & Southeast Sulawesi)	<b>Quadrant IV Relatively Under- developed Sector</b>

Source: data processed by the researchers

**Table 3.** Klassen typology matrix in 2018

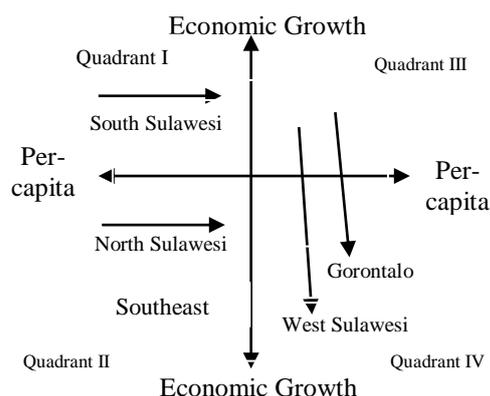
R		Y	
		$Y_i > Y$	$Y_i < Y$
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Source: data processed by the researchers

The quadrant I describes the regions that fall into the category of advanced and rapidly-growing region observed from the province's per-capita income. In 2014, only South Sulawesi province managed to achieve quadrant I (see Table 2). The data suggested that the provinces per-capita income & economic growth rate were larger than those of Sulawesi Island in average.

The quadrant II resembles a region with depressed growth. In 2014, three provinces sat in the quadrant, i.e., Central Sulawesi, North Sulawesi and Southeast Sulawesi. The data suggested that the provinces' per-capita income was larger than the average per-capita income of Sulawesi Island; on the other hand, the provinces' economic growth rate was smaller than those of the island in average.

## Economic Shift and Inequality Between Provinces in Sulawesi Island, Republic of Indonesia



**Figure 1.** Changes in the Klassen typology matrix position between 2014 and 2018

In the meantime, Quadrant III consists of potential or fast-growing regions, i.e., regions whose smaller per-capita income than that of Sulawesi Island in average, but possess higher economic growth rate than the average. In 2014, West Sulawesi and Gorontalo saw themselves in the quadrant III. On top of that, quadrant IV comprises relatively under-developed regions whose per-capita income and economic growth rate are below the average. There was no province that fell into this quadrant in 2014.

Moreover, shift of economic growth and per-capita income of provinces in Sulawesi in the early phase of research, 2014, and in the end phase of research, 2018, is illustrated in Figure 1.

The figure above indicates movements between provinces in Sulawesi Island in the quadrant position. Only West Sulawesi and Gorontalo experienced movement of position in typology quadrant.

In the early time frame of research (2014), the provinces above sat in quadrant III or fast-growing sectors. Those provinces, however, fell to quadrant IV in 2018 at the end of the research time frame; by this, it is assumed that both provinces experienced lower growth rate & per-capita income than the average growth rate & per-capita income of Sulawesi Island.

Meanwhile, South Sulawesi, with the most population highest GRDP contribution among provinces in Sulawesi, was consistent to see itself in the quadrant I as advanced and rapidly-growing region. Other than South Sulawesi, three provinces (Central Sulawesi, North Sulawesi, and Southeast Sulawesi) were also consistent to sit in the quadrant II during the whole time frame of research.

### Analysis of Williamson Index between Provinces in Sulawesi Island

Classic to the notion of regional development is the issue of spatial inequality between regions. In analyzing this variable, the study applied Williamson Index value that involves per-capita GRDP and total population of each province in Sulawesi Island during 2014-2018. Williamson is recorded to be the first person to analyze intra-regional inequality, [22].

The following Table 4 indicates that the average Williamson Index of Sulawesi Island in the last five years (2014-2018) was 0.0796, indicating that the intra-provincial economic development inequality in the island was relatively low, due to the value that approaches zero.

**Table 4.** Williamson index value

Year	Williamson Index
2014	0.142
2015	0.143
2016	0.039
2017	0.038
2018	0.036
Average	0.0796

Source: Data processed by the researchers

As shown in the table, the Williamson Index value of intra-provincial regional inequality in Sulawesi Island has declined significantly from 0.142 in 2014 to 0.036 in 2018. The regional inequality in Sulawesi Island has declined about 0.106 in Williamson Index value from 2014 to 2018.

Based on the criteria, a Williamson Index value that approaches one indicates that the economic inequality is relatively large. On the contrary, if the value approaches 0 (one), it shows smaller economic inequality. By referring to the criteria, it is concluded that the economic inequality between provinces in Sulawesi Island during last 5 years (2014-2018) has declined.

In their study on intra-provincial regional inequality in Sulawesi Island conclude that the inequality index value of per-capita GRDP of 2000-2013 scored 0.167 in average, showing positive trend. South Sulawesi was the province with highest Williamson Index value (0.32), while West Sulawesi was at the bottom with value of 0.0. Despite this, both provinces showed positive trends. All provinces in Sulawesi Island, according to their study, sat in the low level of inequality ( $CV_w < 0.35$ ) [23].

The economic gap in Sulawesi Island from 2000-2013 by Amala & from 2014-2018 (as this study reports) were in low category. The decrease in Williamson Index value or decline of intra-provincial inequality still does not guarantee that all regions within the island will be economically equitable, since each region has different rate of economic growth. The data measured within the study are the accumulation of focused economic activities, in which the activities are varying between regions. The provinces in Sulawesi Island have relatively disparate economic growth due to several factors, including demographical difference. As the leading regions, South Sulawesi and North Sulawesi possess the highest per-capita income in Sulawesi Island. The regions' economy is supported by their natural resources, industry, and tourism sectors. This status will, in turn, encourage foreign investments to contribute to the development of infrastructure and human resources. This echoes Fleisher et al., arguing that investments to human resources in de-

veloped area are proven efficient to contribute in lowering the regional inequality rate [24].

## CONCLUSION

South Sulawesi, as the result reveals, falls into quadrant I of advanced and rapidly-growing sector. In the meantime, three provinces (Central Sulawesi, North Sulawesi, and Southeast Sulawesi) are categorized in quadrant II, i.e. sector with depressed growth. The four provinces above were consistent in the same quadrant during the research time frame from 2014 to 2018. On top of that, two provinces (Gorontalo and West Sulawesi) shifted position from quadrant III (fast-growing sector) in 2014 to quadrant IV (relatively underdeveloped sector) in 2018.

The average Williamson Index value in Sulawesi Island between 2014-2018 is 0.0796. Such number indicates that the intra-provincial economic development in equality in the island was relatively low, due to the value that approaches zero. The decline however does not signify that inequality between regions in Sulawesi Island is not present. This notion takes into consideration the variation of demographical features, natural resources, and other sectors contributing to the regions' GRDP.

## RECOMMENDATIONS

Based on the research result, the study proposes recommendations of policy implementation as follows:

1. To develop sectors with high contribution to the GRDP, such as agriculture and plantation; this takes into account that both sectors are among the dominant sectors in the island. Therefore, efforts to synergize the sectors under the government programs as well as to educate and disseminate the sectors' importance is regarded as essential to boost the production and, in the bigger picture, support the equal distribution of income.

2. To facilitate supporting infrastructure covering the whole regions in accommodating the community and the economic actors in to maximize their potentials. This effort will in turn optimize the region's economic growth.
3. To develop the human resources, as it is an essential feature of a region's economic activity This study regards it as necessary to conduct upgrades in education sectors as well as in skill-training facilities of community development. The higher the quality of human resources in a region, the higher the region productivity will develop contributing minimizing poverty & inequality.

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