



Received: July 16, 2024

Revised: August 12, 2024

Accepted: August 15, 2024

\*Corresponding author: Putri Rahmadani,  
Department of Economics and  
Development Studies, Faculty of  
Economics and Business, Universitas  
Tadulako, Central of Sulawesi, Indonesia.

E-mail: [putryahmadaniiii567@gmail.com](mailto:putryahmadaniiii567@gmail.com)

## DESCRIPTIVE OF QUANTITATIVE DATA | SUPPLEMENTARY

## Analysis of Regional Development Inequality in The District / City of Central Sulawesi Province in 2018-2022

Putri Rahmadani<sup>1</sup>, Muhtar Lutfi<sup>2</sup>, Yunus Sading<sup>3</sup>, Suparman<sup>4</sup>, Andi Herman Jaya<sup>5</sup>

<sup>1,2,3,4,5</sup> Department of Economics and Development Studies, Faculty of Economics and Business, Universitas Tadulako, Central of Sulawesi, Indonesia. Email: [putryahmadaniiii567@gmail.com](mailto:putryahmadaniiii567@gmail.com)<sup>1</sup>, [fekonmuhtarlutfi@gmail.com](mailto:fekonmuhtarlutfi@gmail.com)<sup>2</sup>, [yunussading.feuntad@yahoo.co.id](mailto:yunussading.feuntad@yahoo.co.id)<sup>3</sup>, [suparman.untad@gmail.com](mailto:suparman.untad@gmail.com)<sup>4</sup>, [andihermano6@gmail.com](mailto:andihermano6@gmail.com)<sup>5</sup>

**Abstract:** Development inequality is an important issue that affects the society and economic stability of a region. This study aims to analyze regional development inequality in the districts/cities of Central Sulawesi Province during the 2018-2022 period. The analysis used is quantitative descriptive analysis using secondary data and the Williamson Index analysis method as a measuring tool to assess the level of inequality between regions. The data analyzed included Gross Regional Domestic Product (GRDP) in each district/city of Central Sulawesi Province. The results showed that the Williamson index calculation of the level of regional development inequality in Central Sulawesi Province was 0,97, which indicated a high level of inequality. However, in 2022 there was a decrease in the Williamson Index to 0,46. Nevertheless, the level of inequality between districts/municipalities in Central Sulawesi Province is still categorized as high. This decrease in the Williamson Index indicates an improvement in the distribution of development, but more intensive efforts are still needed to achieve a more effective development balance from the local and central government to reduce development inequality.

**Keywords:** Development Inequality, Williamson Index, GRDP.

### 1. INTRODUCTION

Economic development is a crucial aspect that must be considered when planning a region. National development, as a whole, encompasses regional economic development, resulting in varying degrees of success across different regions. While some areas experience rapid growth, others may see significantly slower development. Economic development is often linked to issues of social inequality and poverty, both in developed and developing countries. Therefore, to achieve societal well-being, the elimination of poverty and reduction of economic disparities are essential goals of development. One approach to addressing regional disparities is to increase investment in sectors that are critical for the less affluent population, such as education, healthcare, agriculture, and others. This strategy aims to prevent the widening of inequalities. Recognizing the development gaps between countries or specific regions can be challenging, as it often sparks intense debate. In areas with high poverty rates, the public sometimes perceives that regional disparities are substantial. In Central Sulawesi, various sub-regions, including villages, sub-districts, and regencies/cities, face challenges related to uneven development and regional disparities. One example of such imbalances is the higher income levels in urban areas compared to rural areas, leading to disparities in economic growth. As a result, there are significant differences in economic development and income between regencies and cities. These regional economic disparities are often influenced by differences in natural resources, human resources, and geographical conditions. Such disparities also affect a region's ability to accelerate growth. Regional development inequalities contribute to disparities in many other areas as well.

During the period from 2018 to 2022, Central Sulawesi experienced various dynamics in its economic and social development. However, in the process of this development, regional disparities frequently emerged, warranting thorough analysis. These disparities may relate to the economic sector, infrastructure, public services, and access to resources, as well as other factors influencing the quality of life of the population. Based on the above description, this study is titled "Analysis of Regional Development Disparities in the Regencies/Cities of Central Sulawesi Province, 2018-2022."



The study aims to determine the level of regional development disparities in the regencies/cities of Central Sulawesi Province.

## 2. LITERATURE REVIEW

### 2.1. Economic Growth

Economic growth refers to the sustained increase in a country's production capacity, leading to higher national income and output. There are three key components of economic growth that benefit society as a whole: (1) Capital accumulation, which includes investments in land, physical equipment, and human resources, such as health, education, and professional skills; (2) Population growth, which increases the workforce available in a region; and (3) Technological advancements, often characterized as new approaches to existing problems. The Gross Regional Domestic Product (GRDP) at the provincial, district, or city level and the Gross Domestic Product (GDP) at the national level are the most common measures of economic growth. The GRDP, which aggregates the value of all final products and services produced within a region by all economic units or businesses during a specific period, can be used to measure regional economic growth, particularly through the growth rate of the GRDP at constant prices (Ketimpangan et al., 2010; Lahagu et al., 2022). Economic growth focuses on the quantitative aspect, such as increased output or per capita income. In contrast, economic development involves broader changes in the overall economic structure of society.

### 2.2. Economic Development

Economic development occurs when the real per capita income of a population increases over time, facilitated by improved governmental institutions. According to Atang Setiawan (2012), achieving economic growth is a primary goal of economic development. Therefore, metrics such as regional GDP growth and per capita income should be included when evaluating a region's development level. This approach allows for more targeted regional development policies based on the classification of areas (Noviar, 2021).

### 2.3. Development Inequality

Some economists argue that differences in resource ownership and production variables are the root causes of regional development disparities. A region's income will be higher if it has access to resources and production factors, particularly capital goods, compared to regions without such access. Myrdal, in (Jhingan, 2003), developed the theory of development inequality by integrating the concepts of backwash effect and spread effect. The backwash effect describes the negative impacts of economic expansion in one area due to external factors, such as migration, capital investment, natural resource exploitation, and concentrated trade centers. The spread effect, on the other hand, refers to the centrifugal dissemination of development momentum from economic centers to other regions. Myrdal highlighted that the backwash effect tends to exacerbate inequalities, while the spread effect tends to mitigate them. He identified this as a major underlying issue of development inequality, further exacerbated by accumulation and significantly affecting less developed countries.

### 2.4. Regional Inequality

Inequality refers to the differences in living standards among the population, which hinder progress in various regions. This results in disparities in wealth and well-being across different areas. Sometimes, there is a misalignment or imbalance in economic activities across regions due to differences in demographics and natural resources. According to Sondakh (2023), these variations impact a region's ability to foster growth.



## 2.5. Research Questions

1. What is the level of inequality among districts/cities in Central Sulawesi Province?
2. How does natural resource availability influence inequality among districts/cities in Central Sulawesi Province?

## 2.6. Research Objectives

To determine the conditions of inequality among districts/cities in Central Sulawesi Province.

## 2.7. Previous Research

Budiarti & Yulia (2020) conducted a study titled "Analysis of Economic Inequality Among Districts/Cities in the Special Region of Yogyakarta Province." Their research indicated that from 2011 to 2018, regional inequality in the Special Region of Yogyakarta fell within the moderate category ( $0.3 < Iw < 0.5$ ). However, the Williamson Index for the province remained at the high end of the moderate inequality range. Sleman District and Yogyakarta City continued to be the economic growth drivers in the province. Despite having the highest income distribution inequality in Indonesia, the province's economic inequality still falls within the moderate range, although it remains above average. Lahagu et al. (2022) analyzed "Regional Development Inequality in Districts/Cities of Southeast Sulawesi Province for the 2016-2020 Period." Their findings indicated that regional development inequality in Southeast Sulawesi Province was categorized as "High-Level Development Inequality." The inequality trend generally decreased from 2016 to 2020, based on the Williamson Index. This disparity arises from the unique demographic composition, natural resources, and human resource capacities of each district and city in the province. Tuty et al. (2019) researched "Regional Inequality Analysis in Sulawesi Island." The Williamson Index calculation revealed that Central Sulawesi's regional inequality remained high. According to Klassen's typology, Southeast Sulawesi, Gorontalo, and North Sulawesi are classified as underdeveloped regions. Gross Regional Domestic Product (GRDP) is a crucial measure used to assess a region's economic condition over a specific period, calculated based on current and constant prices. GRDP reflects the aggregate value added generated by all economic entities in a region. The GRDP at current prices (ADHK) accounts for the total value of goods and services produced, considering the prices prevailing each year, while GRDP at constant prices (ADHK) reflects the total value of goods and services produced using a base year's prices.

Kusuma & Sarfiah (2019) analyzed "Economic Inequality in Central Java Province, 2008-2017." Their study showed that economic inequality in Central Java, measured by the Williamson Index, demonstrated a decreasing trend from 2008 to 2017, although it remained at a high level. According to the Klassen typology analysis, the manufacturing, trade, hotel, and restaurant sectors, along with agriculture, significantly contributed to Central Java's GRDP. These sectors have developed and experienced pressure due to various factors. The Location Quotient (LQ) analysis of Central Java from 2008-2017 identified five fundamental sectors and four complementary sectors. Ferdiansa (2022) researched "Analysis of Economic Growth and Regional Inequality in Four Corridors of East Java Province, 2016-2021." The analysis indicated that regional inequality in each northern corridor of East Java Province from 2016 to 2021 was highest in 2020, with a value of 0.00027913, and lowest in 2019, with a value of 0.0002218. Contributing factors to this issue include inadequate preparedness for change, insufficient development strategy formulation, disparities in development progress rates, exclusive political and economic institutions, and biases stemming from globalization. Regional inequality is a common phenomenon in the economic activities of regions, arising from disparities in natural resource abundance and demographic conditions across regions. This inequality leads to variations in a region's ability to drive the development process, resulting in advanced and lagging regions within each area.



### 3. RESEARCH DESIGN AND METHOD

This study employs a descriptive and quantitative research approach. Quantitative descriptive research involves detailing variables factually using numerical data obtained from actual situations. The study utilizes secondary data, which is sourced from institutions that publish relevant information. The Central Statistics Agency (BPS) of Central Sulawesi provides data on the Gross Regional Domestic Product (GRDP) from 2018 to 2022, covering the last five years. The data required for this analysis includes GRDP at constant prices across the districts/cities in Central Sulawesi Province, GRDP per capita among the districts/cities, the population of each district/city, and other relevant data. The analysis method employed is the Williamson Index Analysis, considered appropriate for evaluating regional disparities. This index primarily compares per capita income and population, using the following formula (Maulana & Arif, 2019):

$$IW = \frac{\sqrt{\sum (y_i - \bar{y})^2 \left(\frac{f_i}{n}\right)}}{\bar{y}}$$

Explanation:

IW = Regional inequality index for Central Sulawesi Province

$Y_i$  = GRDP per capita for each district/city in Central Sulawesi (Rupiah)

$Y$  = Average total GRDP per capita for Central Sulawesi Province (Rupiah)

$F_i$  = Population of each district/city in Central Sulawesi (individuals)

The Williamson Index ranges between 0-1:

- $IW < 0.3$  indicates low regional economic inequality.
- $IW 0.3-0.5$  indicates moderate regional economic inequality.
- $IW > 0.5$  indicates an increase in economic inequality in the region. Conversely, the economic development inequality index, also known as IW, ranges from 0 to 1, where lower values indicate lower inequality, and higher values indicate more uneven inequality.

### 4. RESULT AND DISCUSSION

Central Sulawesi is a province in Sulawesi Island comprising 13 districts/cities. Each district/city has distinct advantages, backgrounds, characteristics, and potentials. These differences lead to varying levels of development, economic growth, and population density across the region.

**Table 1. GRDP of Districts/Cities in Central Sulawesi Province (in Millions of Rupiah) at Constant Prices for 2018-2022**

District/City	Year				
	2018	2019	2020	2021	2022
Banggai Kepulauan	2.563.110	2.666.089	2.603.269	2.735.237	2.870.360
Banggai	18.360.504	19.450.605	18.518.973	18.857.388	20.179.673
Morowali	28.358.402	34.102.749	43.824.294	55.001.245	70.515.619
Poso	6.098.165,00	6.476.402,00	6.221.156,00	6.523.785,00	6.761.352,00
Donggala	8.165.226	8.528.694	8.165.358	8.544.440	8.873.910
Tolitoli	5.467.263	5.729.037	5.534.731	5.776.241	5.986.580
Buol	3.873.900	3.956.652	3.842.194	4.029.741	4.177.115
Parigi Moutong	11.424.820	11.676.770	11.098.504	11.616.816	12.047.382
Tojo Una-Una	3.668.564	3.842.413	3.720.596	3.878.590	4.012.695
Sigi	5.993.144	6.211.011	6.117.902	6.464.340	6.679.602
Banggai Laut	1.617.643	1.674.266	1.607.822	1.678.039	1.746.712
Morowali Utara	7.691.893	8.090.233	8.071.785	8.926.549	12.177.805
Palu	15.315.031	16.180.288	15.462.908	16.385.580	17.092.792



The GRDP values of districts/cities in Central Sulawesi Province show significant disparities, with Morowali district standing out. Despite a decline in 2020, Morowali's GRDP remains one of the highest in Central Sulawesi, following Banggai, Palu, Parigi Moutong, and Donggala. Other districts/cities have comparatively lower GRDP values than Morowali.

#### 4.1. Results

##### *Regional Development Disparities in Central Sulawesi Province 2018*

The analysis reveals that in 2018, there was significant regional development disparity among the districts/cities in Central Sulawesi Province, with a Williamson Index of 0.97, indicating substantial inequality across the region. This disparity results from an imbalance between GRDP per capita growth and population, leading to uneven income and development distribution in Central Sulawesi Province.

##### *Regional Development Disparities in Central Sulawesi Province 2019*

In 2019, the analysis shows continued regional development disparities among districts/cities in Central Sulawesi Province, with the Williamson Index at 0.42. This value indicates a high level of regional development inequality, attributed to an uneven distribution of income and development due to imbalanced GRDP per capita growth and population.

##### *Regional Development Disparities in Central Sulawesi Province 2020*

The Williamson Index in 2020 was 0.32, still reflecting considerable regional development disparities. The primary cause of this inequality was that GRDP growth outpaced population growth, leading to an uneven distribution of income and development.

##### *Regional Development Disparities in Central Sulawesi Province 2021*

In 2021, the Williamson Index increased slightly to 0.43, indicating a high level of regional development inequality. The disparity was again due to the GRDP growth surpassing the population growth, resulting in an uneven distribution of income and development across Central Sulawesi Province.

##### *Regional Development Disparities in Central Sulawesi Province 2022*

By 2022, the Williamson Index reached 0.46, showing continued high regional development inequality. The disparity was caused by the imbalance between GRDP per capita growth and population, leading to unequal income and development distribution in Central Sulawesi Province. Additionally, the COVID-19 pandemic affected economic growth and various industries in the province, exacerbating the inequality.

**Table 2. Average Regional Development Inequality in Central Sulawesi Province (2018-2022)**

Year	Williamson Index	Category
2018	0,97	High
2019	0,42	
2020	0,32	
2021	0,43	
2022	0,46	
Mean	0,56	

Source: BPS Central Sulawesi 2018-2022 (Processed)

The data indicates that the average level of regional development inequality in Central Sulawesi Province from 2018 to 2022 remains high, highlighting persistent disparities in development across different districts and cities in the province.

#### 4.2. Discussion

The Williamson Index analysis reveals fluctuations in regional development inequality among districts/cities in Central Sulawesi Province from 2018 to 2022. In 2018, the regional development inequality index reached 0.97, followed by 0.42 in 2019, 0.32 in 2020, 0.43 in 2021, and 0.46 in 2022. These fluctuations are attributed to the growth in GRDP in sectors such as Agriculture, Forestry, Manufacturing, Information and Communication, and Government Administration and Social Security. Districts/cities experiencing an increase in GRDP per capita include Morowali, Banggai, Palu, North Morowali, and Parigi Moutong, while a decrease occurred in districts/cities like Banggai Laut, Banggai Kepulauan, Tojo Una-Una, Buol, Toli-Toli, Poso, Sigi, and Donggala, influenced by the COVID-19 pandemic. The population in Central Sulawesi Province's districts/cities has increased, particularly in Parigi Moutong, Banggai, and Donggala, while there has been a slight decline in Banggai Laut and Banggai Kepulauan. The population growth is driven by migration, with residents moving from villages or districts to cities seeking employment. Morowali district is the primary destination for migration within Central Sulawesi. Despite government policies on family planning and delaying early marriages, challenges remain in managing this issue across administrative levels, from villages to districts/cities. In addition to GRDP per capita and population growth, other factors contribute to high development inequality in Central Sulawesi Province. These factors include differences in natural resources, geographical conditions, mobility of goods and services, regional economic activity concentration, and development fund allocation. These differences create unique advantages for each area but also result in varying backgrounds, leading to some regions developing rapidly while others lag.

#### 5. CONCLUSIONS

The study concludes that regional development inequality exists among districts/cities in Central Sulawesi Province. The Williamson Index has decreased from 0.97 in 2018 to 0.46 in 2022, indicating persistently high inequality across the region. This trend demonstrates significant disparities in development between different areas within Central Sulawesi.

#### REFERENCES

- Budiarti, & Yulia, N. (2020). Analisis ketimpangan ekonomi wilayah antar kabupaten/kota di provinsi daerah istimewa yogyakarta. *Sustainability* (Switzerland), 4(1), 1–9. <https://doi.org/10.1080/13669877.2020.1758193%0Ahttp://sersc.org/journals/index.php/IJAST/article>
- Dewi Septiani Dwi Kusuma, Dra.Sudati Nur Sarfiah, Y. S. (2019). 269 DINAMIC: Directory Journal of Economic Volume 1 Nomor 3 Tahun 2019. 3(2), 269–281. <https://jom.untidar.ac.id/index.php/dinamic/article/viewFile/2679/1075>
- Farida Millias Tuty, Sari, N., Jaya, A. H., & Universitas, A. S. (2019). Analisis Ketimpangan Wilayah. *Akuntabel*, 16(1), 98–110.
- Ferdiansa. (2022). Pengaruh Indeks Pembangunan Manusia terhadap Kemiskinan di Sulawesi Tenggara. *Arus Jurnal Sosial Dan Humaniora*, 2(3), 175–181. <https://doi.org/10.57250/ajsh.v2i3.131>
- Jhingan, M. (2003). *Ekonomi Pembangunan dan Perencanaan*. PT. Raja Grafindo Persada.
- Ketimpangan, A., Regional, P., & Pulau, D. (2010). *Jurnal Mars Jurnal Mars*.
- Lahagu, Miktoni, Rostin, Rostin, Barani, & Samsul. (2022). Analisis Ketimpangan Pembangunan Regional Wilayah Kabupaten/Kota Provinsi Sulawesi Tenggara Tahun 2016-2020. *Jurnal Ekonomi Pembangunan (JEP) UHO*, 12(1), 720. [https://doi.org/10.57206/jep\\_uho.v12i1.27651](https://doi.org/10.57206/jep_uho.v12i1.27651)
- Maulana, & Arif. (2019). Analisis Ketimpangan Pembangunan Antarkabupaten/Kota Di Provinsi Kalimantan Selatan Tahun 2010-2017. *Jurnal Ilmu Ekonomi Pembangunan*, 19(1), 1–6.
- Noviar, & Noviar. (2021). Analisis Ketimpangan Dan Klasifikasi Pembangunan Ekonomi Kabupaten/Kota Di Provinsi Banten Tahun 2016-2020. *Jurnal Kebijakan Pembangunan Daerah*, 5(1), 24–33. <https://doi.org/10.37950/jkpd.v5i1.118>
- Sondakh, C. A. (2023). Analisis Ketimpangan Pendapatan dan KualitasPertumbuhan Ekonomi Empat Kota di Provinsi Sulawesi Utara. *Jurnal Berkala Ilmiah Efisiensi*, 23(4), 1–11.

