



Article Type: Research Paper

# Analysis of Inequality in Lampung Province (2014–2021): Sectoral and Regional Approaches

Dessy Rachmawatie<sup>1\*</sup>, Prio Prasojo<sup>1</sup>, Wafiyulloh Mubarrok<sup>2</sup>



## AFFILIATION:

<sup>1</sup> Department of Economics,  
Faculty of Economics and Business,  
Universitas Muhammadiyah  
Yogyakarta, Special Region of  
Yogyakarta, Indonesia

<sup>2</sup> Master in Economics, Universitas  
Muhammadiyah Yogyakarta,  
Special Region of Yogyakarta,  
Indonesia

## \*CORRESPONDENCE:

d.rachmawatie@umy.ac.id

## THIS ARTICLE IS AVAILABLE IN:

<http://journal.umy.ac.id/index.php/jerss>

DOI: 10.18196/jerss.v8i1.21495

## CITATION:

Rachmawatie, D., Prasojo, P., & Mubarrok, W. (2024). Analysis of Inequality in Lampung Province (2014–2021): Sectoral and Regional Approaches. *Journal of Economics Research and Social Sciences*, 8(1), 115-132.



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0)

**Abstract:** Lampung as one of the provinces in Indonesia that cannot be separated from the problem of inequality in economic and regional development. From the Gini ration data of Lampung Province, both urban and rural, there was a decrease where the gini ration in 2020 was 0.320, then in 2021 it was 0.314, while in 2022 it was 0.313, from the gini ration data in the last 3 years there was a significant decrease. Lampung which consists of 13 districts and 2 cities has problems in development, namely: problems of economic growth, regional inequality, and inequality of income distribution. The aspect of equitable distribution of territory and income is very important to achieve because equitable distribution of development results is one of the strategies and goals of national development in Indonesia. Development inequality between regions, where on the one hand there are regions that are rapidly advancing and developing, but on the other hand there are also areas that are relatively lagging in terms of development. Thus, this study aims to analyze the level of inequality between regions and clustering districts / cities in Lampung Province in 2014-2021. The data used in this study are secondary data with a research period of 2014-2021. The models used are Williamson Index analysis and Klassen Typology analysis. Based on the results of the study, it shows that the level of regional inequality between districts/cities in Lampung Province in 2014-2021 is still relatively low but tends to decrease every year, where the inequality is caused by the positive contribution of South Lampung Regency, Central Lampung Regency, Tulang Bawang Regency, Mesuji Regency, and Bandar Lampung City.

**Keywords:** Gross Regional Domestic Product Per Capita; Williamson Index; Klassen Typology

**JEL Classification:** A13; C38; E64; I31

## Introduction

Development inequality in Lampung Province in the last 1 decade has decreased. Evidenced from data obtained from the Central Bureau of Statistics of Lampung Province, there was a significant decrease. It can be seen that the latest gini ration data for Lampung Province is at 0.313 inversely compared to 0.320 in 2020 (BPS-Statistics of Lampung Province, 2022). The success of the development of a region has always been the main goal of every government policy to improve and ensure the welfare of its people. In general, the success of regional development is seen from the success of economic development through economic growth indicators (Prakoso & Agustina, 2022).

In developing countries, where there is a "surplus labor economy", development capital can depend not only on the availability or possible availability of investment funds. Such development, besides being too expensive, will also experience obstacles if at any time investment resources become too limited, both from the government and from the community (Rachmah et al., 2023). The relationship between economic growth and inequality has received widespread attention in research and remains the subject of ongoing investigation (Fan & Sun, 2008; Panizza, 2002; Partridge, 2005; Rizzo & Carrera, 2012). According to Chen, (2003), the long-term relationship between income distribution and economic growth follows an inverted U-shaped pattern (Panzera & Postiglione, 2020).

Some previous studies that have examined development inequality include; Suparman & Muzakir, (2023) examine in terms of human resources, unemployment, and economic growth using a panel regression approach, Wahyuni et al., (2022) examine from the side of spatial inequality in rural areas, Nadiah & Farida, (2022) examine from the side of inclusive economic growth with the UNDP approach, Hornok & Raeskyesa, (2023) examine from the side of local income inequality, Arkum & Amar, (2022) examine the influence of economic growth, human development, poverty and unemployment on income distribution inequality. From previous research, studies on development inequality are generally studied in terms of economic growth, local income and development, this provides broader insights related to development inequality.

The benchmark for the success of development can be seen from the growing and improving economic growth, stable economic structure, adequate infrastructure, high level of welfare, and the small number of development inequality between regions. Of course, all of that can be realized if capital is met, including adequate financial capital, because development must be carried out in aggregate, the collection of capital in aggregate requires more funds. Economic development can be maximally realized if development does not focus only on one point but simultaneous development at various points so as to achieve egalitarian community welfare and reduce inequality. Development inequality is the difference in the level of community welfare that occurs in some regions, so this usually displays regional class classes, namely areas that have high and low welfare levels.

Several previous studies have mentioned that there are several factors that encourage inequality in several provinces or even districts / cities in Indonesia. As in the results of a study entitled "The Role of Infrastructure Development on Economic Inequality Between Regions in Indonesia" by Tatan Sukwika in 2018 where the results of the study showed a fairly high economic gap (GDP per capita) between provinces in Indonesia during the 2011-2015 period. Judging from the value of the Williamson Index of GDP per capita which ranges from 0.7. The high gap is often associated with infrastructure gaps that occur between provinces. This result can be seen from the strong positive correlation between the GDP per capita gap and the infrastructure gap between provinces.

The results of another similar study entitled "Analysis of Development Inequality in Luwu Regency in 2011-2019" by (Darda et al., 2021) also showed different results where the

results of the study showed the value of the Williamson Index or the level of inequality between Luwu Regency and South Sulawesi Province there was a relatively low position from 2011-2019, this was proven during the observation period the index value only rotated at 0.23 to 0.29. Then, based on the Klassen Typology Matrix, Luwu Regency included underdeveloped areas during the observation period except in 2013, 2014, 2015 where Luwu Regency was a rapidly growing area.

The results of another study entitled "Analysis of Development Inequality Between Districts / Cities in South Kalimantan Province in 2010-2017" (Maulana, 2019). Showing the results that inequality between districts / cities in the South Kalimantan Province is still worrying, shown through the Williamson Index showing middle and high levels because it is around 0.5. An important finding that must be considered in this case is that districts that have a large dependence on coal mining are in quadrant 2 (high income) but the growth rate is low based on the results of the Klassen Typology.

Based on this background, the research objectives include: 1) Analyzing the level of inequality between regions in Lampung Province in 2014-2021; 2) Analyzing the clustering of regional inequality in Lampung Province in 2014-2021. By using the Williamson Index research method to measure the value of inequality between regions and the Klassen Typology to measure the clustering of districts / cities that are classified as developed and underdeveloped in the 2014-2021 period. This research is expected to be able to make a positive contribution in reducing inequality between regions in Lampung Province or even Indonesia in the following years and it is also expected that the results of this study can provide more or less additional knowledge and become an understanding as public information about the relationship between development inequality and other variables. Development inequality is the difference in the level of public welfare caused by certain factors. Development inequality generally occurs in income, spatial and sectoral aspects. The initial indication is that the rich are getting richer while the poor are getting poorer, developed regions continue to grow rapidly leaving underdeveloped areas and there are superior sectors that contribute greatly to development, while non-superior sectors are burdensome. Development inequality can also be seen vertically, namely differences in income distribution and horizontally, namely differences between developed and underdeveloped regions (Sukwika, 2018).

According to Kuznets (1973) in ( Wulandari, 2016) Economic growth is the process of increasing the long-term production capacity of a country to provide economic goods for its population. This capability grows according to technological advances and necessary institutional and ideological adjustments. This definition has 3 (three) components: first, the growth of a nation seen from the continued increase in the supply of goods; secondly, advanced technology is a factor of economic growth that determines the growth rate of the ability to provide a wide range of goods to the population; Third, the widespread and efficient use of technology requires adjustments in the institutional and ideological fields so that innovations produced by human science can be utilized appropriately.

Development inequality is the difference in the level of welfare of society caused by certain factors. Development inequality generally occurs in income, spatial and sectoral

aspects. Early indications are that the rich are getting richer while the poor are getting poorer, developed regions continue to grow rapidly leaving lagging areas and there are superior sectors that contribute greatly to development, while non-superior sectors are burdensome (Darda et al., 2021).

The Williamson Index (WI) is a measure of income disparity between regions first developed by Jeffrey G. Williamson, In 1965, Williamson examined the relationship of regional disparities to levels of economic development. Klassen Typology Analysis is an analytical tool used to determine how the pattern and structure of economic growth in each region (Sukwika, 2018).

The difference between this research and previous research can be seen from the side of the study where this study examines development inequality in terms of economic and regional development using sectoral and regional approaches, while some previous studies have examined a lot in terms of economic growth, local income, poverty and unemployment against inequality of income distribution. Furthermore, the state of the arts and novelty in this study have not been studied previously specifically examining development inequality with sectoral and regional approaches, especially in Lampung Province.

## **Research Method**

This research is a descriptive quantitative analysis research that uses numbers in analyzing. The analytical tools used in this study are the Williamson Index and Klassen Typology to determine the size or size of development inequality that occurs in Lampung Province, using data on Gross Regional Domestic Product per Capita and Population in 2014-2021 . By using the Williamson Index and Klassen Typology to understand development inequality in Lampung Province. The Williamson Index is used to identify absolute and relative differences in Gross Regional Domestic Product per Capita, providing a comprehensive picture of the level of inequality. Meanwhile, the Klassen Typology helps to group areas with similar development characteristics. The selection of this method was made to provide a more holistic view of the distribution of economic development in Lampung Province, given its focus on regional analysis. Compared to methods such as the Gini Coefficient or Variation Coefficient which are more oriented towards inequality or variability, the use of the Williamson Index and Klassen Typology provides a deeper understanding of regional patterns and groups in the economic development of Lampung Province.

The data used in this study is secondary data that is *time series* starting from 2014-2021. The data sources in this study are the Central Statistics Agency (BPS) Regency / City and the Central Statistics Agency (BPS) of Lampung Province. The method of data collection to achieve the objectives in this study is entirely carried out through literature studies by taking data from the Central Statistics Agency, so there is no need for sampling techniques and questionnaires.

The Williamson Index can be used to determine development inequalities between districts / cities that occur in a Province. Used to measure inequality using regional GDP per capita indicators relative to the average regional population (Nuraini, 2017). The Williamson Index formula is as follows:

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

Information:

IW = Indeks Williamson

$Y_i$  = Gross Regional Domestic Income per Capita in Districts/Municipalities in Lampung Province (Rupiah)

$Y$  = Lampung Province's Average Gross Regional Domestic Income per Capita (Rupiah)

$f_i$  = Number of Population in Districts/Municipalities in Lampung Province (person)

$n$  = Number of Population in Lampung Province (person)

The Klassen typology is a classification to determine sectoral and regional economic typologies. This method uses secondary data, namely regional GDP with its growth rate then compared with National GDP with its growth rate as well. The final result of this method classifies business sectors into four categories, namely superior, potential, developing, and underdeveloped sectors (Hidayah & Tallo, 2020). The matrix of this method is as follows:

According to (Hajeri et al., 2015) Klassen's typological analysis is divided into four parts, including: Fast-advancing and fast-growing regions are areas that have a higher rate of economic growth and average per capita income than comparison areas. Developed but depressed regions are areas that have a higher average per capita income, but a lower economic growth rate than comparable regions. Fast-developing regions are areas that have a high economic growth rate, but the average per capita income is lower than the comparison area. Relatively disadvantaged areas are areas that have a low rate of economic growth and per capita income from comparison areas.

**Tabel 1** Classification of Klassen Typologies

$\begin{matrix} Y \\ r \end{matrix}$	$Y_i > Y$	$Y_i < Y$
$r_i > r$	<b>Quadran I</b> Fast Forward and Fast Growing Areas	<b>Quadran III</b> Fast Growing Areas
$r_i < r$	<b>Quadran II</b> Developed but Depressed Areas	<b>Quadran IV</b> Relatively Disadvantaged Areas

Source: (Hajeri et al., 2015)

Information:

$Y_i$  = District / City Per Capita Income  $i$

$Y$  = Regional Per Capita Income

$r_i$  = GDP Growth Rate of Districts/Municipalities  $i$

$r$  = Regional GDP Growth Rate

### Williamson Index Analysis

Williamson Index analysis is used to measure how big the inequality between regions in Lampung Province is. The Williamson Index value uses data on Gross Regional Domestic Product per Capita and the Number of Population of each district/city in Lampung Province in the period 2014-2021. The Williamson Index coefficient has a value between 0 (zero) and 1 (one), if the value is close to one, it means that inequality between regions is high, and if the value is close to zero, it means evenness or low inequality (Islam & SBM, 2018).

## Result and Discussion

Lampung is the southernmost province on the island of Sumatra, Indonesia, with the capital or center of government in the city of Bandar Lampung. This province has 2 cities, namely Bandar Lampung city and Metro city and 13 regencies. Lampung Province has an area of 35,376.50 km<sup>2</sup> and is located between 105°45'-103°48' East Longitude and 3°45'-6°45' South Latitude. This area is in the west bordered by the Indian Ocean, in the east by the Java Sea, in the north by the provinces of South Sumatra and Bengkulu, and in the south by the Sunda Strait. Here is the Map of Lampung Province:



**Figure 1** Map of Lampung Province. Indonesian Thematic Map. 2015.

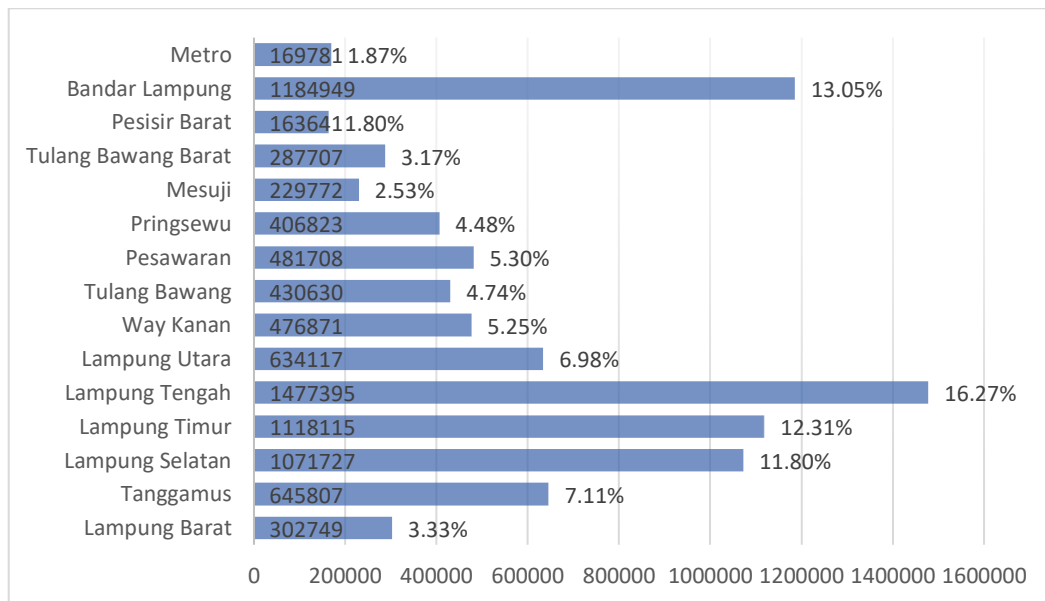
In Figure 1 Lampung Province consists of 2 cities and 13 regencies have their respective regional boundaries or have an area of each regency / city. Table 2. Below are the geographical conditions of Lampung Province as follows:

**Table 2** Geographical Conditions of Lampung Province

No	Regency/City	Capital City	District Area (Km <sup>2</sup> )	Percentage of Area of Lampung Province (Percent)
1	West Lampung	Liwa	2.118,76	6,31%
2	Tanggamus	Kota Agung	2.900,29	8,64%
3	South Lampung	Kalianda	2.219,46	6,61%
4	East Lampung	Sukadana	3.864,69	11,52%
5	Central Lampung	Gunung Sugih	4.544,00	13,54%
6	North Lampung	Kotabumi	2.529,87	7,54%
7	Way Kanan	Blambangan Umpu	3.657,49	10,90%
8	Tulang Bawang	Menggala	3.091,08	9,21%
9	Pesawaran	Gedong Tataan	1.278,21	3,81%
10	Pringsewu	Pringsewu	614,48	1,83%
11	Mesuji	Mesuji	2.205,27	6,57%
12	West Tulang Bawang	Panaragan	1.285,74	3,83%
13	West Pesisir	Krui	2.988,07	8,91%
14	Bandar Lampung	Bandar Lampung	183,31	0,55%
15	Metro	Metro	73,15	0,22%

Source: BPS-Statistics of Lampung Province (2022).

Figure 1 is a diagram that explains the number of population in the district/city and the percentage of population in Lampung Province as follows:



**Figure 1** Number of Population by District/City in Lampung Province and Percentage of Lampung Population. BPS-Statistics of Lampung Province, 2022.

Based on Table 2. Lampung Province consists of 15 regencies/cities with their respective capitals consisting of West Lampung, Tanggamus, South Lampung, East Lampung, Central Lampung, North Lampung, Way Kanan, Tulang Bawang, Pesawaran, Pringsewu, Mesuji, Tulang Bawang, West Pesisir, West Bandar Lampung, and Metro. The area owned by each regency / city varies, the largest area is in Central Lampung Regency which is equivalent to 13.54% of the area of Lampung Province, while for the smallest area is in Metro Regency which is equivalent to 0.22% of Lampung Province.

In Figure 1 is the largest population in Central Lampung Regency with a population of 1,477,395 thousand people which is equivalent to 16.27% of the total population of Lampung Province. Western Pesisir Regency is the province with the lowest population compared to other regencies/cities, with a population of 163,641 thousand people which is equivalent to 1.80% of the total population of Lampung Province.

The size of a country's economy is usually measured by its Gross Domestic Product in real terms, resulting from the transformation of Gross Domestic Product into a national currency calculated at the national price level, that is, the price level in the same country converted into a common currency and measured at a uniform price level, through the use of purchasing power parity (Montiel & Gregorio, 2020) Indicators are important to find out how economic conditions in a region in a certain period, one of which is by looking at the Gross Regional Domestic Product Per Capita (Hasibuan et al., 2022; Valencia et al., 2023).

The GDP per capita provides an overview and average income received by each resident for one year. GDP per capita is obtained from the quotient between GDP and the number of people concerned. The following is the development of GDP per capita for all districts/cities in Lampung Province in 2014-2021:

**Table 3** GDP Contribution of Lampung Province and Other Provinces on Sumatra Island to Indonesia in 2014-2021 (Percent)

Province	2014	2015	2016	2017	2018	2019	2020	2021	Rerata
North Sumatra	4,88	4,91	4,92	4,92	4,92	4,93	4,98	4,93	4,92
Riau	5,21	5,00	4,86	4,75	4,62	4,53	4,57	4,55	4,76
South Sumatra	2,83	2,83	2,83	2,84	2,86	2,88	2,94	2,94	2,87
Lampung	<b>2,21</b>	<b>2,22</b>	<b>2,22</b>	<b>2,23</b>	<b>2,23</b>	<b>2,23</b>	<b>2,24</b>	<b>2,22</b>	<b>2,22</b>
Riau Islands	1,70	1,73	1,73	1,68	1,66	1,66	1,63	1,63	1,68
West Sumatra	1,55	1,57	1,57	1,57	1,57	1,57	1,58	1,57	1,57
Jambi	1,39	1,39	1,38	1,38	1,37	1,36	1,38	1,38	1,38
Aceh	1,32	1,25	1,23	1,22	1,22	1,21	1,23	1,22	1,24
Bangka Belitung Islands	0,51	0,51	0,51	0,50	0,50	0,49	0,49	0,50	0,50
Bengkulu	0,42	0,42	0,42	0,42	0,42	0,42	0,43	0,43	0,43

Source: Statistic Indonesia, 2022.

Compared the contribution of the GRDP of Lampung Province with other provinces on the island of Sumatra, it shows that the GDP of Lampung Province is relatively not too high but also not low, with an average contribution of 2.22% to the GRDP. This shows that the



economy in Lampung Province has economic potential that can still be improved in the future.

**Table 4** GRDP Contribution According to Business Field in Lampung Province (2021-2022) Based on Constant Prices.

Business Field	Gross Regional Domestic Product According to Business Field (million rupiah)	
	Constant Price-2010	
	2021	2022
A. Agriculture, Forestry, and Fishery	67.996.360,79	69.368.962,05
1. Agriculture, Livestock, Hunting and Agricultural Services	53.670.657,89	55.896.598,20
a. Crops	22.287.788,55	22.852.778,47
b. Horticultural Plants	3.473.225,49	3.590.724,66
c. Plantation crops	15.395.321,69	16.007.357,74
d. Livestock	10.975.424,19	11.861.541,03
e. Agricultural and Hunting Services	1.538.897,97	1.584.196,30
2. Forestry and Logging	265.879,26	147.464,12
3. Fishery	14.059.823,64	13.324.899,73
B. Mining and excavation	12.816.976,32	12.319.253,45
1. Oil, Gas and Geothermal Mining	6.282.066,88	5.677.827,20
2. Coal and Lignite Mining	0.00	0.00
3. Metal Ore Mining	122.022,71	115.783,39
4. Mining and Other Excavations	6.412.886,72	6.525.642,86
C. Processing industry	46.351.003,21	46.566.851,96
1. Coal Industry and Oil and Gas Refining	18.645,50	18.720,05
2. Food and Beverage Industry	37.519.209,61	37.862.401,26
3. Tobacco Processing Industry	18.539,04	17.168,00
4. Textile and Apparel Industry	24.437,87	21.470,31
5. Leather, Leather Goods and Footwear Industry	0.00	0.00
6. Wood Industry and the like	279.290,06	135.735,72
7. Paper Industry and the like	364.200,03	435.133,10
8. Chemical, Pharmaceutical and Traditional Medicine Industries	1.915.362,29	1.862.624,32
9. Rubber, Plastic and Similar Industries	3.632.858,69	3.575.534,83
10. Non-Metal Mineral Products Industry	797.766,11	750.580,49
11. Basic Metal Industry	170.309,31	172.230,50
12. Non-Metal Mineral Products Industry	276.617,15	251.108,58
13. Machinery and Equipment Industry	1.028.468,75	1.154.444,63
14. Transportation Equipment Industry	130.138,73	143.881,49
15. Furniture Industry	119.221,07	107.414,87
16. Other Processing Industries	55.939,01	58.403,82
D. Electricity and Gas	402.618,24	427.680,36
1. Electricity	287.092,07	300.441,53
2. Procurement of Electricity and Gas	115.526,17	127.238,83
E. Water Supply, Waste Management and Others	272.881,89	283.024,34
F. Construction	25.318.794,11	26.293.056,53
G. Wholesale Trade and Vehicle Repair	30.612.011,10	35.309.467,36
1. Motor Vehicle Trading and Repair	7.156.941,54	7.450.723,19
2. Large Trade Not Cars and Motorcycles	23.455.069,56	27.858.744,17

**Table 4** GRDP Contribution According to Business Field in Lampung Province (2021 – 2022) Based on Constant Prices (cont')

Business Field	Gross Regional Domestic Product According to Business Field (million rupiah)	
	Constant Price-2010	
	2021	2022
H. Transportasi dan Pergudangan	12.449.352,91	14.981.518,54
1. Rail Transport	169.714,88	199.911,13
2. Land Transportation	10.327.374,41	12.618.365,21
3. Angkutan Laut	639.111,80	718.039,95
4. Land Transportation	621.685,09	681.345,26
5. Air Freight	38.243,48	57.334,20
6. Transportation Support Services and Others	653.223,25	706.522,80
I. Provision of accommodation and food and drink	3.426.125,19	3.858.294,03
1. Provision of Accommodation	102.899,38	135.362,89
2. Provision of Food and Drink	3.323.225,82	3.722.931,13
J. Information and Communication	13.816.169,27	13.862.515,09
K. Financial Services and Insurance	5.207.371,63	5.021.153,84
1. Financial Intermediary Services	4.054.529,51	3.863.390,69
2. Insurance and Pension Funds	394.324,83	400.893,62
3. Other Financial Services	754.614,53	752.723,60
4. Jasa Penunjang Keuangan	3.902,76	4.145,94
L. Real Estate	7.426.513,62	7.680.175,84
M,N. Company Services	333.249,64	391.518,84
O. Government Administration and Others	8.127.363,58	8.024.954,37
P. Education Services	7.486.890,87	7.677.550,63
Q. Health Services and Social Activities	2.768.283,80	2.765.440,97
R,S,T,U. Other Services	2.154.524,96	2.702.771,46
Total Gross Regional Domestic Income	246.966.491,15	257.534.189,65

The economic sector in Lampung Province that contributes the most to the GRDP in Lampung Province is the Agriculture, Forestry and Fisheries sector, which contributes 67,996,360.79 (in million rupiah), the large processing industry which is 46,351,003.21 (in million rupiah) and trade which is 30,612,011.10 (in million rupiah). So it can be concluded that the agricultural sector is the economic fulcrum in Lampung Province. Geographically, Lampung Province is an area that has potential in the agricultural sector. Areas that have the greatest potential for the agricultural sector, especially rice in Lampung Province, are South Lampung, East Lampung and Central Lampung Regencies. While the area in Lampung Province that has the greatest potential in the vegetable crop sector is in South Lampung Regency (BPS-Statistics of Lampung Province, 2023) The agricultural sector and food crops for regions that have potential in these sectors if developed optimally by the regions are proven to contribute the most to the economy (Hossain et al., 2023).

The same thing happened in Brazil, according to the results of the study (Santana, 2022) indicates that for each increase of one million reais in the export of agricultural products, the other productive sectors are induced to increase production that would amount to R\$ 5,329.5. Thus the agricultural sector is the engine of economic generation in rural areas,

the importance of diversifying the economy of smallholders, improving agricultural technology, and developing quality regional economies (Wang et al., 2023).

In addition to the agricultural sector, the large processing industry sector is also a powerful economic generating sector in Lampung Province, its contribution to the economy of Lampung Province is 46,351,003.21 (in million rupiah). This is similar to what happened in Ecuador, according to the results of the study (Moreno Morales et al., 2024) titled: “*Contribution of the manufacturing industrial sector to the Gross Domestic Product of Ecuador*, Industrialization is the main mechanism of economic development of a country as measured through GDP. In Ecuador, the activities with the highest income participation are metal production and mechanical operations as well as the manufacturing industry. Based on the results of the study (Akita & Alisjahbana, 2023) which examines the initial impact of the COVID-19 pandemic on regional economies in Indonesia, examining structural changes and regional income inequality. The results of his research show that the industrial sector acts as an engine of growth and plays an important role in the regional economy. Thus, one of the main concerns regarding regional development planning is to set specific development goals, such as Gross Domestic Product at the national level or Gross Domestic Regional Product at the regional level (Fasial & Shaker, 2014).

When compared to GDP per capita between districts / cities in Lampung Province during the period 2014 – 2021 each year in each district / city has increased. This is shown in Table 5 Regencies / Cities that have the highest average GDP per capita value are in Bandar Lampung City, which is 33,653,964 per year (in million rupiah). While the district/city with the lowest average GDP per capita value is in West Lampung Regency, which is 15,270,346 per year (in million rupiah). This is because Bandar Lampung Regency is the center of economy and government in Lampung Province so far, in Bandar Lampung City there are many large and small trade sectors, as well as processing industries. The infrastructure in Bandar Lampung City is also better than other areas in Lampung Province. This greatly provides benefits for trade and industry actors in running businesses and improving the regional economy.

**Table 5** GDP Per Capita District/City in Lampung Province in 2014-2021 (In Million Rupiah)

Year	West Lampung	Tanggamus	South Lampung	East Lampung	Central Lampung
2014	13.367.936	14.891.386	24.323.366	24.080.118	29.982.739
2015	13.948.733	15.525.671	25.349.795	24.932.145	31.292.006
2016	14.519.118	16.147.948	26.394.450	25.816.544	32.746.767
2017	15.117.157	16.805.729	27.558.977	26.774.727	34.171.318
2018	15.767.211	17.470.686	28.732.183	27.539.249	35.748.301
2019	16.439.504	18.154.634	29.891.130	28.313.977	37.296.029
2020	16.311.641	16.723.989	28.005.367	26.111.509	32.552.298
2021	16.691.464	16.916.481	28.497.195	25.936.870	32.970.220

**Table 5** GDP Per Capita District/City in Lampung Province in 2014-2021 (In Million Rupiah) (cont')

Year	North Lampung	Way Kanan	Tulang Bawang	Pesawaran	Pringsewu
2014	21.179.537	17.379.527	28.791.296	21.162.797	15.769.758
2015	22.205.934	18.092.261	29.827.876	21.971.872	16.430.958
2016	23.216.181	18.818.793	31.037.980	22.828.152	17.100.097
2017	24.314.176	19.583.312	32.330.700	23.718.194	17.818.432
2018	25.501.106	20.410.044	33.699.755	24.679.039	18.558.210
2019	26.735.172	21.242.821	35.041.182	25.630.113	19.325.688
2020	25.705.376	20.022.703	36.317.711	23.645.335	18.877.941
2021	26.379.819	20.417.471	37.300.970	23.857.801	19.345.420

**Table 5** GDP Per Capita District/City in Lampung Province in 2014-2021 (In Million Rupiah) (cont')

Year	Mesuji	Tulang Bawang Barat	West Pesisir	Bandar Lampung	Metro
2014	27.960.681	23.051.128	16.186.787	30.224.132	20.914.291
2015	29.211.811	24.063.892	16.818.258	31.526.570	21.803.196
2016	30.510.945	25.117.294	17.546.288	32.933.858	22.757.976
2017	31.907.614	26.296.663	18.330.637	34.374.182	23.715.212
2018	33.419.076	27.524.491	19.159.038	35.876.747	24.727.590
2019	34.954.161	28.712.977	20.042.907	37.387.261	25.709.051
2020	30.470.823	27.115.559	18.899.297	33.305.748	25.156.671
2021	30.932.026	27.704.508	19.146.727	33.603.217	25.670.636

Source: BPS-Statistics of Lampung Province (2023).

## Discussion

### Analysis of Inter-Regional Inequality in Lampung Province

To determine the inequality between regions in Lampung Province, this study uses Williamson Index analysis. Based on the results of the Williamson Index analysis shows that, during 2014-2021 the calculation of the Williamson Index obtained the results in Table 4.

**Table 6** The Value of Inter-Regional Inequality in Lampung Province in 2014-2021

Year	Williamson Index
2014	0,26
2015	0,26
2016	0,262
2017	0,263
2018	0,264
2019	0,264
2020	0,24
2021	0,238
<b>Average</b>	<b>0,256</b>

Based on Table 6 it can be seen that the average inequality between regions in Lampung Province during 2014-2021 was 0.256. From these observations, it can be seen that the value of inequality that occurs is relatively low and tends to experience a significant decrease. In 2014 the value of the Williamson Index of Inequality was 0.260 (low inequality) and was stable for the next 5 years until in 2020 it fell to 0.240 and finally in 2021 the value was 0.238 or inequality still remained at a low level. Thus, it can be assessed that the policy strategy of the local government of Lampung Province during the period 2014 – 2021 is considered relatively effective in reducing the number of inequality between regions in Lampung Province. In contrast to the results of the study, quite tragic conditions are actually experienced by China, reform and democracy policies that occur in China on the one hand these policies have encouraged the expansion of the country's economy. But on the other hand, this rapid growth has a significant impact on exacerbating income inequality among Provinces/Regions in China. China's economic development, regional inequality has managed to decrease at the provincial level, but there is still a clear increase in income polarization at the district level in China (Hu et al., 2024).

#### Klassen Typology Analysis

Klassen typology analysis of regional indicators aims to determine the pattern of evolution or classification of the relationship between the economic growth rate and the income level of the community in a certain period (Sudirman, 2021) . Using Klassen Typology analysis, one of the regional economic analysis tools, by dividing regions based on two indicators: Regional economic growth rate and average per capita income (Yusuf Hasbullah, 2012). The following is a table of indicators in conducting a Klassen Typology analysis during 2014-2021: (Zhang et al., 2023).

**Table 7** Average Economic Growth Rate and GDP Per Capita, Districts/Municipalities in Lampung Province in 2014-2021

No	District/City	Average Rate of Economic Growth (Percent)	Average of GDP Per Capita (Rupiah)
1	West Lampung	3,86	15.270.345,5
2	Tanggamus	3,78	16.579.565,5
3	South Lampung	3,91	27.344.057,88
4	West Lampung	2,74	26.188.142,38
5	Central Lampung	4,11	33.344.959,75
6	North Lampung	3,97	24.404.662,63
7	Way Kanan	3,94	19.495.866,5
8	Tulang Bawang	4,04	33.043.433,75
9	Pesawaran	3,71	23.436.662,88
10	Pringsewu	3,87	17.903.313
11	Mesuji	3,94	31.170.892,13
12	West Tulang Bawang	4,05	26.198.314
13	West Pesisir	3,89	18.266.242,38
14	Bandar Lampung	4,66	33.653.964,38
15	Metro	4,26	23.806.827,88
	Lampung Province	3,86	26.373.674,38

Source: BPS-Statistics of Lampung Province (2023).

The results of Table 7 above the analysis of the Klassen Typology using indicators of the average economic growth rate and average GDP per capita in 2014-2021, the results for the following categories are obtained:

1. **Quadrant I (Fast Forward and Fast Growing Regions)**  
 There are 5 regions or about 33.3 percent of areas in Lampung Province, namely South Lampung Regency, Central Lampung Regency, Tulang Bawang Regency, Mesuji Regency, and Bandar Lampung City.
2. **Quadrant II (Fast Forward but Depressed Region)**  
 There are no districts/cities that fall into this quadrant category.
3. **Quadrant III (Areas That Can Still Grow Rapidly)**  
 There are 7 regions or about 46.7 percent of areas in Lampung Province, namely West Lampung Regency, North Lampung Regency, Way Kanan Regency, Pringsewu Regency, West Tulang Bawang Regency, West Pesisir Regency, and Metro City.
4. **Quadrant IV (Relatively Lagging Areas)**  
 There are 3 regions or about 20 percent of areas in Lampung Province which are areas with relatively underdeveloped area categories, namely Tanggamus Regency, East Lampung Regency, and Pesawaran Regency. The following is an overview of regional clustering according to the analysis of the Klassen Typology:

**Table 8** Clustering of District/City Klassen Typology in Lampung Province in 2012-2021

		Y	
		$Y_i > Y$	$Y_i < Y$
r	$r_i > r$	<b>Quadran I</b> <b>Fast Forward and Fast Growing Areas</b> South Lampung Regency, Central Lampung Regency, Tulang Bawang Regency, Mesuji Regency, dan Bandar Lampung City.	<b>Quadran III</b> <b>Fast Growing Areas</b> West Lampung Regency, North Lampung Regency, Way Kanan Regency, Pringsewu Regency, West Tulang Bawang Regency, West Pesisir Regency, dan Metro City.
	$r_i < r$	<b>Quadran II</b> <b>Developed but Depressed Areas</b> -	<b>Quadran IV</b> <b>Daerah Relatif Tertinggal</b> Tanggamus Regency, East Lampung Regency, dan Pesawaran Regency.

Rachmawatie (2010) explained that there are many factors that cause development *disparities* between regions. Factors that cause disparities between regions include: (1) Differences in resource endowment characteristics, (2) Demographic differences, (3) Differences in human capital capabilities, (4) Differences in location potential, (5) Differences in aspects of accessibility and power in decision making, and (6) Differences in aspects of market potential.

Development disparities between regions can be found in both developed and developing countries (Rachmawatie, 2010). In developed countries, spatial disparities of the development process have occurred but are not so alarming because the *gap* between living standards in rural areas and urban areas in developed countries is not very wide. As

for disparities in developing countries, regional development disparities are quite real. The income gap and quality of life in developed and underdeveloped regions are quite wide. Poverty, unemployment and low quality of life in underdeveloped regions are quite high. High population pressure and market imperfections are some of the reasons regional disparities persist. Therefore, the condition of regional disparity in developing countries is a more worrying condition than the disparity that occurs in developed countries. Disparity conditions in developing countries include: (1) Income disparity and regional social infrastructure, (2) Rural-urban disparity relationship with living standards, (3) The role of cities, and (4) Migration tendencies. All of these conditions are conditions that are related to each other and cause inequality (disparity) in an area to continuously occur.

Based on the results of this study, it is suggested that the importance of regional governance is one of the solutions to overcome regional inequality, in addition, political economic institutions and cultural customs are very important for the success of regional cooperation in influencing the vulnerability of benefit/risk sharing mechanisms between regions. This is in line with the results of the study (Zhang et al., 2023) which shows that with regional governance and efforts in carrying out regional cooperation can actually reduce the number of inequality between regions in Guang dong, Hong Kong.

Urban land serves as a hub for manufacturing and services, amplifying economic activity and trade flows, and interacting with natural and human processes. Based on Table 6 it can be concluded that in Lampung Province there is still inequality between regions, where on the one hand there are fast-advancing and fast-growing areas and fast-growing areas, but there are still relatively underdeveloped areas. This can be caused by inequality in the provision of road infrastructure in each region still resting in urban areas, this causes land use distribution patterns are still not diverse, besides that it is also suspected that there is still a gap in cost benefits and supply chain networks still rely in urban areas. This causes the high regional gap in Lampung Province. However, based on the results of the analysis, there is no area in Lampung Province that is in Quadrant II, which is a developed but depressed region. This result is also in line with the results of the study (Xie et al., 2024) mentioned that urban land serves as a hub for manufacturing and services, amplifying economic activity and trade flows, and interacting with natural and human processes.

## **Conclusion**

The conclusion of the analysis that has been carried out to answer the objectives in this study includes the level of regional inequality between districts / cities in Lampung Province is included in the category of low level inequality, but tends to decrease every year with an average Williamson Index value of 0.256 in 2014-2021. Then further research also obtained the results of fast-advancing and fast-growing regions there are 5 regencies/cities, namely South Lampung Regency, Central Lampung Regency, Tulang Bawang Regency, Mesuji Regency, and Bandar Lampung City. Developed but depressed regions, no districts/cities are included in this quadrant. There are 7 districts/cities in the

rapidly growing area, namely West Lampung Regency, North Lampung Regency, Way Kanan Regency, Pringsewu Regency, West Tulang Bawang Regency, West Pesisir Regency, and Metro City. There are 3 sub-districts, namely Tanggamus, East Lampung, and Pesawaran.

Lampung Province still has inequality between regions, where on the one hand there are regions, which are fast advancing and fast growing, but there are still areas that are relatively lagging behind this is due to the occurrence of development inequality. Therefore, the importance of government involvement in carrying out governance is one solution to overcome the occurrence of regional development inequality.

## References

- Akita, T., & Alisjahbana, A. S. (2023). The Initial Impacts of the COVID-19 Pandemic on Regional Economies in Indonesia: Structural Changes and Regional Income Inequality. *Sustainability*, 15(13709), 1-19. <https://doi.org/10.3390/su151813709>
- Arkum, D., & Amar, H. (2022). The Influence of Economic Growth, Human Development, Poverty and Unemployment on Income Distribution Inequality: Study in the Province of the Bangka Belitung Islands in 2005-2019. *Jurnal Bina Praja*, 14(3), 413-422. <https://doi.org/10.21787/jbp.14.2022.413-422>
- BPS-Statistics of Lampung Province. (2022). Ratio Gini 2020-2022. <https://lampung.bps.go.id/indicator/23/200/1/gini-ratio.html>
- BPS-Statistics of Lampung Province. (2023). GRDP by Industry.
- Chen, B.-L. (2003). An inverted-U relationship between inequality and long-run growth. *Economics Letters*, 78(2), 205-212. [https://doi.org/10.1016/S0165-1765\(02\)00221-5](https://doi.org/10.1016/S0165-1765(02)00221-5)
- Darda, T., Patra, I. K., & Mustafa, S. W. (2021). Analisis Ketimpangan Pembangunan di Kabupaten Luwu Tahun 2011-2019. *Jurnal Ilmiah Ekonomi Dan Bisnis*, 18(2), 176-182. <https://doi.org/10.31849/jieb.v18i2.5500>
- Fan, C. C., & Sun, M. (2008). Regional inequality in China, 1978-2006. *Eurasian Geography and Economics*, 49(1), 1-18. <https://doi.org/10.2747/1539-7216.49.1.1>
- Fasial, K., & Shaker, A. (2014). Use of Remote Sensing Technique to Predict Gross Domestic Product (GDP): An Analysis of Built-Up Index and GDP in Nine Major Cities in Canada. *Sustainability*, 15(7), 13709. <https://doi.org/10.5194/isprsarchives-XL-7-85-2014>
- Hajeri, Y., E., & Dolorosa, E. (2015). Analisis Penentuan Sektor Unggulan Perekonomian di Kabupaten Kubu Raya. *Jurnal Ekonomi Bisnis Dan Kewirausahaan*, 4(2), 253-269. <https://doi.org/10.26418/jebik.v4i2.12485>
- Hasibuan, R. R., Kartika, A., Suwito, F. A., & Agustin, L. (2022). Pengaruh Produk Domestik Regional Bruto (PDRB) terhadap Tingkat Kemiskinan Kota Medan. *Reslaj: Religion Education Social Laa Roiba Journa*, 4(3), 683-693. <https://doi.org/10.47467/reslaj.v4i3.887>
- Hidayah, R. A., & Tallo, A. J. (2020). Analisis Ekonomi Provinsi Jawa Tengah Periode 2015-2019 dengan Metode Indeks Williamson, Tipologi Klassen dan Location Quotient. *Jurnal Ilmu Pendidikan Nonformal: AKSARA*, 6(3), 339-350. <https://doi.org/10.37905/aksara.6.2.97-102.2020>
- Hornok, C., & Raeskyesa, D. G. S. (2023). Economic zones and local income inequality: Evidence from Indonesia. *The Journal of Economic Inequality*. <https://doi.org/10.1007/s10888-023-09581-x>



**Rachmawatie, Prasojo, & Mubarrok**  
Analysis of Inequality in Lampung Province (2014–2021): ...

- Hossain, M., Ahmad, Q. K., & Islam, M. M. (2023). Towards a Sustainable Economy The Case of Bangladesh. *Routledge*. <https://doi.org/10.4324/9781003231912>
- Hu, B., Zhai, W., Li, D., & Tang, J. (2024). Application note: evaluation of the Gini coefficient at the county level in mainland China based on LuoJia 1-01 nighttime light images. *Computational Urban Science*, 4(1), 1-8. <https://doi.org/10.1007/s43762-023-00114-w>
- Islam, F. S., & SBM, N. (2018). Faktor-Faktor Mempengaruhi Ketimpangan Wilayah di Provinsi Jawa Timur, Indonesia. *Media Ekonomi Dan Manajemen*, 33(1), 1-8. <https://doi.org/10.24856/mem.v33i1.564>
- Maulana, A. (2019). Analisis Ketimpangan Pembangunan Antar Kabupaten/Kota di Provinsi Kalimantan Selatan Tahun 2010-2017. *Jurnal Ilmu Ekonomi dan Pembangunan*, 19(1), 1-5. <https://jurnal.uns.ac.id/jiep/article/view/25510>
- Montiel, C., & Gregorio, A. (2020). Análisis del crecimiento del Producto Análisis del crecimiento del Producto Período 1997-2018. *Revista de Ciencias Sociales (RCS)*, 26(4), 498-506. <https://doi.org/10.31876/rcs.v26i4.34645>
- Moreno Morales, A., Navarrete Fonseca, M., Molina Herrera, J., & Osorio Jiménez, K. (2024). Contribución del sector industrial manufacturero al producto interno bruto del Ecuador. *Revista Venezolana de Gerencia (RVG)*, 29(105), 417-432. <https://doi.org/10.52080/rvgluz.29.105.26>
- Nadiah, R., & Farida, R. (2022). Analysis of Inclusive Economic Growth in Districts/Cities in East Java 2015-2019 (ADB and UNDP Approach). *Advances in Economics, Business and Management Research*. <https://doi.org/10.2991/aebmr.k.220304.013>
- Panizza, U. (2002). Income inequality and economic growth: Evidence from American data. *Journal of Economic Growth*, 7, 25-41. <https://doi.org/10.1023/A:1013414509803>
- Panzer, D., & Postiglione, P. (2020). Measuring the spatial dimension of regional inequality: An approach based on the Gini correlation measure. *Social Indicators Research*, 148(2), 379-394. <https://doi.org/10.1007/s11205-019-02208-7>
- Partridge, M. D. (2005). Does income distribution affect US state economic growth? *Journal of Regional Science*, 45(2), 363-394. <https://doi.org/10.1111/j.0022-4146.2005.00375.x>
- Prakoso, A. D., & Agustina, N. (2022). Inclusive Growth Analysis in Central Sulawesi, The Eastern Province of Indonesia 2015-2019. *Asian Journal of Business Environment*, 12(2), 1-12.
- Rachmah, U., Fadhila, D., Amelia, R., & Panorama, M. (2023). The Influence of Economic Growth, Inter-Regional Disparities and Absorbed Labor on Welfare. *Eduksos Jurnal Pendidikan Sosial & Ekonomi*, 12(2). <https://doi.org/10.24235/edueksos.v12i2.15514>
- Rachmawatie, D., Hadi, S., & Priyadi, D. O. (2010). The Analysis of Regional Disparity in Bogor Regency: Sectoral and Regional Approach. *IPB University Scientific Repository*.
- Risso, W. A., & Carrera, E. J. S. (2012). Inequality and economic growth in China. *Journal of Chinese Economic and Foreign Trade Studies*, 5(2), 80-90. <https://doi.org/10.1108/17544401211233453>
- Santana, W. C. de A. J. A. C. de. (2022). Brazilian gross domestic product adjusted by the depreciation of agricultural soil. *Revista de Economia e Sociologia Rural*, 60(2), 1-29. <https://doi.org/10.1590/1806-9479.2021.228505>
- Sudirman, N. (2021). Disparitas pertumbuhan ekonomi antar wilayah kabupaten dan kota. *AKUNTABEL*, 18(1), 110-111. <https://journal.feb.unmul.ac.id/index.php/AKUNTABEL/article/view/8779>
- Sukwika, T. (2018). Peran Pembangunan Infrastruktur terhadap Ketimpangan Ekonomi Antarwilayah di Indonesia. *Jurnal Wilayah dan Lingkungan*, 6(2), 115-130. <https://doi.org/10.14710/jwl.6.2.115-130>

- Suparman, S., & Muzakir, M. (2023). Regional inequality, human capital, unemployment, and economic growth in Indonesia: Panel regression approach. *Cogent Economics and Finance*, 11(2). <https://doi.org/10.1080/23322039.2023.2251803>
- Valencia, V., Diomar, A., Oliva, M., Enrique, L., Montiel, C., & Gregorio, A. (2023). Economic growth and its components in south America: Performance in the period 1950-2019. *Revista de Ciencias Sociales (RCS)*, XXIX(3), 26-40. <https://doi.org/10.31876/rcs.v29i3.40693>
- Wahyuni, R. N. T., Ikhsan, M., Damayanti, A., & Khoirunurrofik, K. (2022). Inter-District Road Infrastructure and Spatial Inequality in Rural Indonesia. *Economies*, 10(9), 229. <https://doi.org/10.3390/economies10090229>
- Wang, R., Luo, H., Chen, Y., Gao, D., Liu, H., Bian, H., & Chen, J. (2023). Agustus). Assessing the Stability of Poverty Alleviation from a Household Economic Perspectives. *Sustainability*, 15(11962), 1-20. <https://doi.org/10.3390/su151511962>
- Wulandari, I. S. (2016). Analisis Tingkat Pertumbuhan Ekonomi dan Tingkat Ketimpangan Pendapatan Antar Kecamatan di Kabupaten Magelang Tahun 2004-2013. *Jurnal REP (Riset Ekonomi Pembangunan)*, 1(1), 1-12. <https://doi.org/10.31002/rep.v1i1.48>
- Xie, W., Yang, X., Han, Z., Sun, M., Li, Y., Xie, H., & Wang, Y. (2024). Urban sector land use metabolism reveals inequalities across cities and inverse virtual land flows. *Resources, Conservation & Recycling*, 202(107394), 1-12. <https://doi.org/10.1016/j.resconrec.2023.107394>
- Yusuf Hasbullah, M. F. (2012). Analisis Arah Kebijakan Ekonomi Terhadap Sektor Pendidikan dalam Peningkatan IPM. *JEJAK: Journal of Economics and Policy*, 5(2), 271-279. <https://doi.org/10.15294/jejak.v7i1.3596>
- Zhang, X., Lu, Y., Xu, Y., Zhou, C., & Zou, Y. (2023). Governing regional inequality through regional cooperation? A case study of the Guangdong-Hong Kong-Macau Greater Bay area. *Applied Geography*, 162(103135), 1-11. <https://doi.org/10.1016/j.apgeog.2023.103135>