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Analysis of Inequality and Classification of Regency/City Economic Development in The Riau Archipelago Province, 2016-2021

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Abstract

The role of local government in the era of regional autonomy is to have the authority to develop the regional economy in accordance with the potential of the region. So that it is expected that the formation of a strategy or policy is more appropriate in overcoming regional economic problems, considering that each region has different economic growth and per capita income. This study aims to find out inequality in economic development and determine the classification of districts/cities in the Riau Archipelago Province for the period 2016 – 2021 using the Williamson Index approach and the Klassen Typology. Based on the results of the Williamson Index calculations in 2016 – 2021, it shows that the Riau Archipelago Province has experienced a decrease in the index number to 0.40. This condition indicates that there are government efforts to equalize economic development so that the disparity in economic development between districts/cities in the Riau Archipelago Province has decreased. Even so, inequality in economic development in this province still exists and needs to be corrected, one of which is through the concentration of economic activity in each region. Based on the results of the study using the Klassen Typology, it shows that most of the regencies/cities in the Riau Archipelago Province in the 2016 – 2021 period are included in relatively underdeveloped areas, namely; Karimun Regency, Lingga Regency, Bintan Regency and Tanjungpinang City. In addition, there are 2 districts that are included in the classification of developed but depressed areas, namely; Natuna and Anambas Regencies. Furthermore, the areas included in the classification of fast developing areas are; Batam city.

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INTRODUCTION

Economic development is an activity related to a number of dimensions as well as various basic changes from social structure, societal attitudes and national institutions including accelerating growth, reducing inequality and alleviating poverty (Todaro, 2011). In an effort to carry out economic development aims to increase the availability and expansion of the distribution of basic needs, increase income and improve living standards. It also aims to break away from the attitude of dependence through the expansion of a number of economic and social options for each individual and the nation as a whole. In line with this, Arsyad (2010) explained that development aims to create community welfare which is reflected through increased economic growth and an even distribution of income.

Development in the scope of the country is spatially sometimes uneven. A number of regions are indicated to have fast growth but some have slow growth (Kuncoro, 2004). In the process and stages of the development of a region generally have an impact on development inequality between regions. According to Myrdal (1957) there is an imbalance in development because the impact of the backwash effect is greater than the spread effect on underdeveloped countries. Increased demand in developed regions can attract investment, which in turn increases income and results in a second round of investment and then repeated over and over again. So that a better scope of investment in development centers can lead to scarcity of capital in underdeveloped areas (Jhingan, 2010).

Inequality can have both positive and negative impacts. The positive impact due to inequality is being able to encourage underdeveloped regions to improve their welfare through increasing their competitiveness and growth. Meanwhile, the negative impact due to inequality is the occurrence of economic inefficiency, social stability and weakening solidarity, which hinders the achievement of social welfare (Todaro, 2004).

The occurrence of differences and imbalances in development between regions is caused by a number of factors, including; (1) differences in natural resources owned, (2) differences in location and geography, (3) differences in goods and services, (4) differences in the concentration of regional economic activities, and (5) differences in development budgets between regions. Thus, the preparation of development plans and policies needs to be adjusted to the needs of each region, so as to minimize development inequality.

The Riau Archipelago Province (Kepri) is one of the provinces in Indonesia that has an archipelago base. There are a number of large and small islands with a dominant sea area of 96 percent and 4 percent of the land area. Thus topographically, this province has a group of islands separated by sea. The challenge in economic development in the Riau Archipelago Province lies in a proper understanding of the characteristics, obstacles and problems that each district/city has in the Riau Islands Province (Ginting, 2016)

Kuncoro (2004) explains that the government's development policy decision requirement lies in the concept of spatially based development or development planning that leads to relatively underdeveloped areas without neglecting other regions. In line with this, Todaro (2004) also argued that the challenge in economic development lies in equity.

Gross Regional Domestic Product (GRDP) (BPS, 2023) is the sum of additions to goods and services obtained through various production units in an area within a certain period of time (generally one year). Economic development in a region can be measured by growth rate indicators that can describe the growth rate of production of goods and services in a region for a certain period of time. One of the several indicators derived from the GRDP derivative is the growth rate indicator by means of a formula as in equation 1. Another indicator derived from the GRDP derivative is GRDP per capita which shows the value of income per one resident in a region in a certain period of time. The formula for calculating GRDP per capita in a region for a certain period of time is by dividing the value of GRDP in a region for a certain period of time by the total population of a region for the same time period. The following is the formula for calculating the rate of economic growth, namely:

$$\text{Growth rate} = \left(\frac{PDRB_t}{PDRB_{t-1}} \text{ x } 100\right) - 100 \quad (1)$$

Information:

GRDPt = GRDP at constant prices in year t

GRDPt-1 = GRDP at constant prices in year t-1

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RESEARCH METHODS

Data source

This study uses data for the period 2016-2021 for all regencies/cities in the Riau Archipelago Province sourced from the Central Statistics Agency (BPS), including data: 1) Gross Regional Domestic Product (GDP) at 2010 Constant Prices; 2) GRDP at Current Prices by Business Field; 3) GRDP per capita: 4) Population; 5) Economic Growth.

Williamson Index

The use of the Williamson Index analysis method aims to determine the level of income inequality between districts/cities in the Riau Archipelago Province in 2016-2021. The Williamson index shows the degree of income inequality between regions through the approach of population size and per capita GRDP. Williamson (1965) introduced this formula by adding up the differences in the per capita GRDP of an area and a region of a higher level, for example for sub-districts with regencies/cities, regencies/cities with provinces and weighing the proportion of the population of an area, with the symbol Vw. The following is the main composition in the Williamson Index, namely through a comparison between the level of per capita income and the number of residents (Syafrizal, 2012), with the formulation used is:

$$Vw = \frac{\sqrt{\Sigma\left(((Y_i - \bar{y})^2)\left(f_i/_N\right)\right)}}{\mathbf{Y}} \quad (2)$$

Information:

Vw = The Williamson Index

Y_i = GRDP per capita district/city at constant prices

$\bar{y}$ = The average per capita GRDP of the Riau Archipelago Province is at constant prices

F_i= Number of Regency/City Population i

N= Total Population of Riau Archipelago Province

The Williamson index (inequality level) is expressed as a number that has a value between 0 and 1. If it is close to 0 (zero), then it states that development inequality between districts/cities in Riau Islands Province is getting lower or in other words regional economic growth is occurring evenly. On the other hand, if the Williamson Index is close to 1, it indicates that development inequality between regencies/cities in the Riau Archipelago Province is getting higher and indicates that there is uneven regional economic growth.

Klassen Typology

The use of the Klassen Typology analysis method aims to find out an overview of the pattern and structure of economic growth between districts/cities in the Riau Archipelago Province in 2016-2021. The formula used is to compare the per capita income of the population and the economic growth of a region with the per capita income of the population and the economic growth of a region one level higher. The main indicators are using economic growth and GRDP per capita with average economic growth on the vertical axis and average income per capita on the horizontal axis which is divided into four regional quadrants, namely:

1) Quadrant I. Regions that are fast-developing and fast-growing (high growth and high income), namely regions that have higher levels of economic growth and income levels than the average district/city.
2) Quadrant II. Fast developing areas (high growth but low income), namely areas that have high growth rates but lower per capita income levels than the average district/city.
3) Quadrant III. Developed but depressed regions (high income but low growth), namely regions that have higher per capita income, but whose economic growth is lower than the average district/city.
4) Quadrant IV. Relatively underdeveloped regions (low growth and low income), namely regions that have lower levels of

economic growth and per capita income compared to the average district/city.

The following is a table for the division of the Klassen Typology (Syafrizal, 2008), namely:

Table 1. Klassen Typology Classification

	$Y_i > Y$	$Y_i < Y$
$R_i > R$	Quadrant 1. Developed and Rapidly Growing Regions	Quadrant 3. Fast/Potential Developing Areas
	Quadrant 2. Developed but Depressed Regions	
$R_i < R$	Quadrant 1. Developed and Rapidly Growing Regions	Quadrant 4. Relatively Disadvantaged Regions
	Quadrant 2. Developed but Depressed Regions	

Information:

Yi = GRDP Per Capita of district/city I at constant prices

Y = PDRB Per Capita Riau Archipelago Province at constant prices

Ri = Regency/city Economic Growth i

R = Economic Growth of Riau Archipelago Province.

RESULTS AND DISCUSSION

Economic Overview

The economic condition of the Riau Islands which is calculated based on the Gross Regional Domestic Product (GRDP) at the current price of Rp. 275.62 trillion and Per Capita GRDP of Rp. 85.42 million. The Riau Archipelago's economic growth rate in 2021 will grow by 3.43 percent. This is higher than the achievement in 2020 which experienced a contraction of -3.80 percent. So compared to the previous year, in 2021 it will show a recovery in economic activity which will trigger an improvement in the rate of economic growth in the Riau Archipelago Province. Meanwhile, the highest GRDP in the Riau Archipelago Province is located in Batam City, which is 172,843.90 billion with a growth rate that is also high, namely 4.75 percent. Meanwhile, the highest per capita GRDP is located in Anambas Islands Regency, which is 342,604.71.

Improvements in development after the Covid-19 pandemic have had an impact on economic growth. This shows that there is a recovery in a series of economic activities so that in 2021 it will grow to an economic growth rate of 3.43 percent. The following is a table regarding the economy in the districts/cities of the Riau Archipelago Province which shows that Anambas Islands Regency has the lowest GRDP value but the growth rate is quite high compared to several other districts/cities.

Table 2. Gross Regional Domestic Product (GRDP), GRDP Per Capita, and Growth Rate in 2021

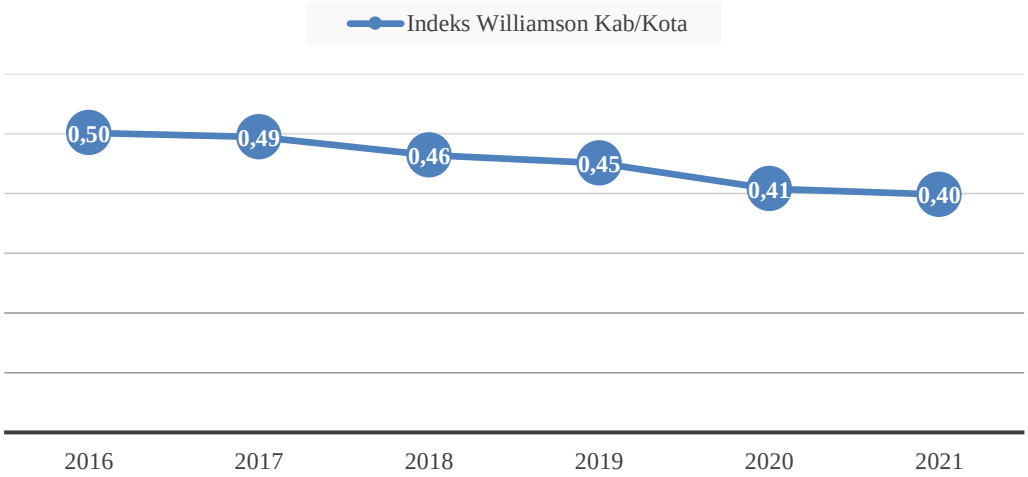
Regency/City	GRDP Applicable (Billion Rp)	GRDP per capita (Million Rp)	Growth rate (Percent)
Karimun	14.195,74	54.714,33	2,37
Bintan	21.251,13	130.727,08	0,23
Natuna	20.870,16	250.349,74	0,02
Lingga	4.499,27	44.697,27	1,95
Kepulauan Anambas	16.697,53	342.604,71	0,04
Batam	172.843,90	140.512,42	4,75
Tanjungpinang	20.099,37	86.127,75	0,59
Riau islands	16.976.690,80		3,43

Sourcer: BPS, 2022.

Regional Inequality

There are regions with different characteristics resulting in inequality of economic development and income per capita of the population between districts/cities. Through the inequality of GRDP per capita between districts/cities, it shows the condition and progress of development in the Riau Archipelago Province. The Williamson Index analyzes development inequality between districts/cities in the Riau Archipelago Province in 2016-2021. The following is a graph showing the results of calculations using the Willimson Index, namely:

Figure 1. Regency/city Williamson Index in the Riau Archipelago, 2016-2021.



Sources: Bps, 2023

Based on Figure 1. Shows that the Williamson Index value in the period 2016-2021 tends to decrease, this condition explains that the imbalance in the distribution of per capita income between districts/cities in the Riau Islands Province shows improvement through the government's efforts to make economic development equitable. Even so, imbalances in economic development in this province still exist and need to be corrected, one of which is through the concentration of economic activity in each region.

Region Classification

Table 3. Results of Inter-regency/city Class Typology calculations in the Riau Archipelago Province, 2016-2021

Numb	Regency/City	Average Economic Growth (Percent)	Average Income per Capita (Million/ Rp)	Quadrant
1.	Karimun	3,36	37.443,16	III
2.	Bintan	2,56	86.208,53	III
3.	Natuna	0,65	188.475,36	IV
4.	Lingga	3,44	30.219,78	III
5.	Kepulauan Anambas	-2,22	278.767,07	IV
6.	Batam	3,52	81.082,50	II
7.	Tanjungpinang	1,87	64.287,40	III
Riau islands		1,88	109.497,69	

Source: BPS, 2023 (processed)

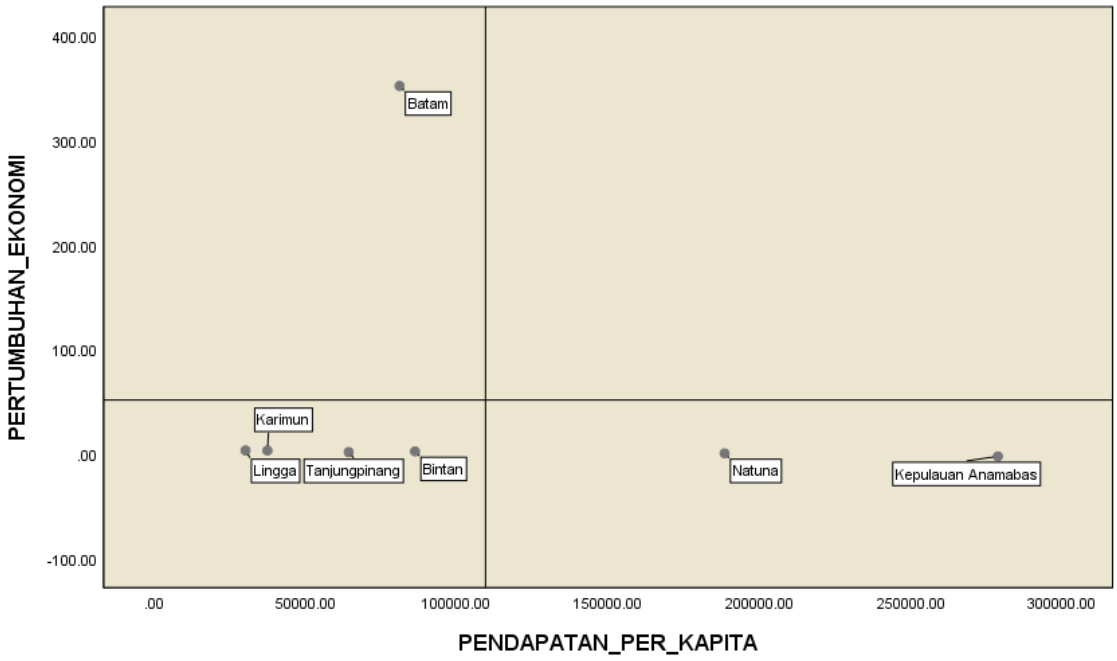


Figure 2. Typology of Klassen between districts/cities in Riau Archipelago Province, 2016-2021.
Sumber: Output SPSS, 2023

Based on Table 3. It can be seen from the results of the Kalssen Typology calculations between districts/cities in the Riau Archipelago Province, it shows that there are no regions that are in quadrant I or areas that are included in the classification of developed and rapidly growing regions.

Furthermore, in the quadrant II area or which is included in the classification of fast-growing areas, Batam City has a high growth rate, but the per capita income level is lower than the average district/city. The high public interest in finding work is not matched by the availability of jobs. Thus causing a relatively higher number of unemployed in Batam City when compared to regencies/cities in the Riau Archipelago Province.

Then in quadrant III regions or those included in the classification of developed but depressed regions are Natuna and Anambas Regencies with higher per capita incomes, but lower economic growth compared to the district/city average. It has a relatively small population that triggers both Natuna and Anambas districts to have a higher per capita income level than other districts/cities. In addition, in seeking the rate of economic growth, it is necessary to encourage sectors that have the potential to increase economic activity in the region.

Next in the quadrant IV area or those included in the classification of relatively underdeveloped areas are Karimun Regency, Lingga Regency, Bintan Regency and Tanjungpinang City which have lower levels of economic growth and per capita income compared to the average district/city. In general, in areas that are relatively underdeveloped, the government needs special attention in economic development through policies that are oriented towards equity.

CONCLUSION

Based on the results of an analysis of economic development inequality between districts/cities using the Williamson Index in the Riau Archipelago Province for the 2016-2021 period, it is concluded that the development inequality between districts/cities in the Riau Archipelago Province has decreased but is still experiencing economic development inequality with a fairly high tendency.

A number of policy implications that can be suggested are for the Riau Archipelago Provincial government to be able to make efforts to provide

facilities or improve a number of supporting factors that have an influence on non-base sectors to be developed. So that the hope is that the non-base sector can become a base sector that has a role in increasing economic growth in the future. Regency/city governments are also expected to be able to encourage and increase regional economic potential so that they can utilize unmanaged resources so as to be able to increase people's income.

Through the right policies for breakfast, it is hoped that economic development will be more evenly distributed between districts/cities so as to be able to increase people's income.

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