

## Research Article

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# Analysis of Growth and Changes in Economic Structure in 5 Big Cities on the Island of Sumatra (Case Study 2017-2022)

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**Abstract:** *This research aims to analyze the growth and changes in economic structure in five large cities on the island of Sumatra. This type of research is quantitative research. This research uses secondary data sourced from data from the Central Statistics Agency. The data used in this research is time series data from 2017-2022. The methods used in this research are the Structural Transformation analysis method, Location Quotient (LQ) analysis and Klassen Typology Analysis. The results of the research show that the economy in 5 large cities on the island of Sumatra experienced a negative shift in the primary economic sector, while most of the secondary and tertiary economic sectors experienced a positive shift or increased. The results of the Location Quotient (LQ) analysis have a significant effect on the Klassen Typology analysis, where the economic sector Non-based sectors in each region are in quadrant III, that is, these sectors are classified as non-based sectors but have the potential to be developed in the future, while non-based sectors in quadrant IV are categorized as economic sectors that are relatively underdeveloped and do not have a competitive advantage in the analysis area.*

**Keywords:** *Economic Growth, Leading Sectors, Gross Regional Domestic Product (GRDP), Shifts in Economic Sectors, Location Quotient, Klassen Typology.*

## Introduction

Development is one way to achieve social welfare. Development is a multidimensional process that includes various fundamental changes in social structures, community attitudes and national institutions, as well as continuing to pursue accelerated economic growth, handling income inequality, as well as poverty alleviation or total change in a society/adjustment of the social system as a whole towards a better condition. better Todaro in (Ibrahim, 2018). Development is also defined as a transformation mechanism that is carried out repeatedly to encourage socio-economic change leading to a superior situation (Saputri and Faridatussalam, 2022). The success of national development is very dependent on the success of regional development.

In principle, regional development is carried out by taking into account the conditions and potential of each region, in accordance with the dynamics of regional and national development which aims to advance general welfare (PSPPR, 2023). Regional development not only aims to increase per capita income and community welfare in a region but also to catch up with developed regions in order to achieve convergence between regions (Feri Hardani, 2022). Regional development is greatly influenced by development based on superior sectors, efficiency, and the role of development actors (Rangraeni, 2021).

Each region has different economic potential. To achieve the goals of regional development, each regional area must be well aware of its potential and empower these various resources as a basis for developing the region (Haris, 2012). Regional governments need to know the leading sectors in their respective regions. According to Tjokroamidjojo (1995) in Setyaningrum et al. (2018). "Leading sectors

can be defined as economic sectors or productive business activities that are developed as development potential and can become the economic basis of a region compared to other sectors in a direct or indirect relationship." Leading sectors must have higher growth potential compared to other sectors in a region (Latifah and Hafiz, 2022).

Indonesia's economic activities are still uneven, it can be seen that the majority of the economic concentration is still on the islands of Java and Sumatra. This makes Sumatra Island interesting for further research because Sumatra Island is the second largest contributor to Indonesia's economic growth in the third quarter of 2023 after Java. According to BPS data, the contribution of Sumatra Island is 22.16% with economic growth of 4.50% (yoy). Large cities have a strategic role in regional development as service, collection and distribution nodes, which have backward connections with small cities and forward connections with other large cities (Santoso, 2009). A large city is a city with a population of more than five hundred thousand people (Athallah, 2020). Judging from population density, the cities of Medan, Palembang, Batam, Pekanbaru and Bandar Lampung are the five most populous large cities on the island of Sumatra.

**Table 1.** Population data on Sumatra Island in 2023 (thousand people)

No	City	Total population
1	Medan	2,530,493
2	Palembang	1,761,459
3	Batam	1,240,792
4	Pekanbaru	1,116,142
5	Bandar Lampung	1,096,936
6	Padang	928,541
7	Jambi	633,650
8	Bengkulu	385,512
9	Dumai	338,064
10	Binjai	305,977
11	Pematangsiantar	275,190
12	Banda Aceh	257,313
13	Lubuklinggau	239,523
14	Tanjungpinang	233,406
15	Pangkalpinang	232,915
16	Padang Sidempuan	229,408
17	Prabumulih	205,287
18	Lhokseumawe	193,590
19	Langsa	186,958
20	Tanjungbalai	181,383
21	Tebing Tinggi	178,524
22	Metro	175,532
23	Pagar Alam	149,357
24	Payakumbuh	144,727
25	Gunungsitoli	137,732
26	Bukittinggi	135,489

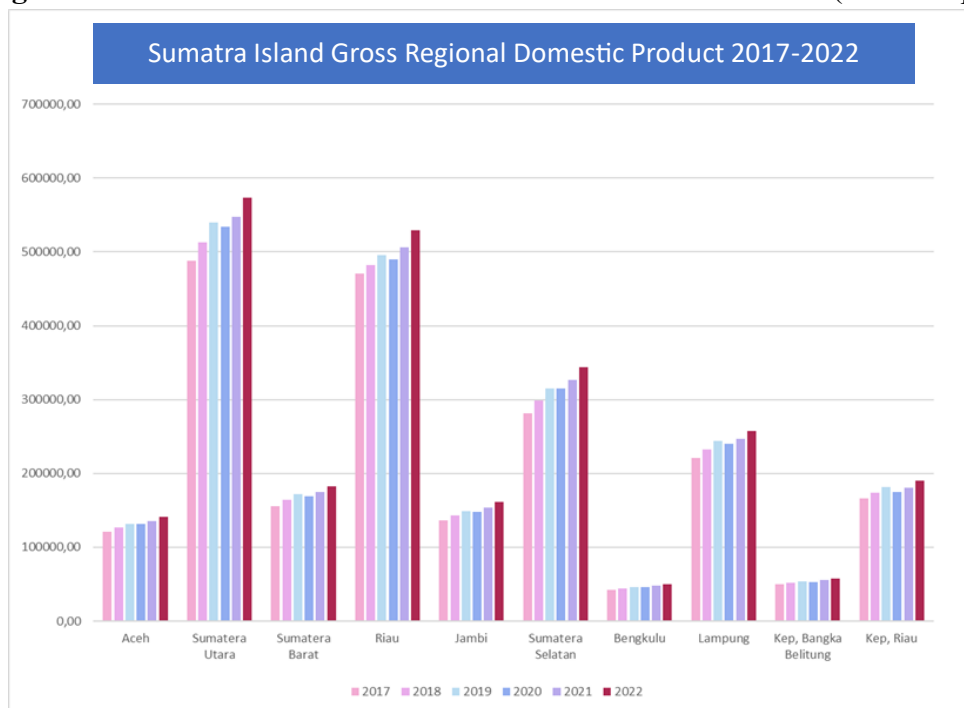
27	Sungaipenuh	100,851
28	Subulussalam	99,910
29	Pariaman	99,484
30	Sibolga	97,219
31	Solok	79,703
32	Sawahlunto	68,054
33	Padang Panjang	61,559
34	Sabang	43,395

Source: Ministry of Home Affairs, 2023

The picture above shows the population density on the island of Sumatra in 2023. There are five large cities assessed by the level of population density, the first is Medan City with a population of 2,530,493 people, next is Palembang City with a population density of 1,761,459 people, the next city is Batam City with a population of 1,240,792 people, and Pekanbaru City which has a population of 1,116,142 people, and Bandar Lampung City which is included as a large city with a population of 1,096,936 people.

Economic growth has a significant influence on the criteria for large cities. Strong economic growth can shape and influence various aspects of city life, including physical size, population, industrial structure, level of prosperity, and infrastructure. Economic growth is one indicator of assessing the success of a region which can be reflected in the value of Gross Regional Domestic Product in a certain period.

**Figure 1.** GRDP at Constant Prices on Sumatra Island 2017-2022 (billion rupiah)



Source: Central Statistics Agency, 2023

The image above shows economic growth data on the island of Sumatra in 2017-2022 in billions of rupiah. Throughout 2017-2022, North Sumatra had an average economic growth rate of 532,455.78 billion, then Riau had an average economic growth rate of 495,775.97 billion, then South Sumatra had an average economic growth rate of 313,424.00 billion. , and Lampung which have an average economic growth rate

of 240,331.78 billion, and the Riau Islands have an average economic growth rate of 177,922.24 billion. These five regions have a superior level of economic growth compared to other regions on the island of Sumatra, this is influenced by the existence of five large cities on the island of Sumatra, which include Medan, Pekanbaru, Palembang, Bandar Lampung and Batam.

Gross Regional Domestic Product is often used as the main indicator of the success of a region's economic growth. If the GDP rate increases from year to year, this shows positive economic growth. High GDP has a positive effect on regional development activities. Economic development policies set by regional governments will increase economic growth. High economic growth will indicate structural transformation changes which will not only have an impact on the regional economy but will also have an impact on poverty alleviation, which is characterized by improving the distribution of community income, increasing tax contributions from the economic sector, creating a better investment climate, and opening up opportunities. new jobs, which will increase competitiveness both on a national and international scale.

The existence of high economic growth is an indication of the success of economic development in a region which is marked by structural transformation changes. The economic structure occurs as a result of economic development policies implemented by the government, which basically means that the economic structure will change along with economic conditions in the region. Changes determined by the government in economic policy will be clearly reflected in the resulting economic structure. Development that is carried out appropriately and consistently will have a direct impact on economic growth which is expected to continue continuously. In order for this hope to be created and realized, there is a need for government policy and participation in managing existing natural resources by carrying out various innovations and appropriate planning in accordance with the advantages of the regional economic sector.

## Method

### Types of Research and Data Sources

The research used is descriptive research using a quantitative approach. Quantitative research methods are research methods that describe phenomena, events, symptoms and occurrences that occur factually, systemically and accurately. Phenomena can take the form of forms, activities, relationships, characteristics as well as similarities and differences between phenomena (Sugiyono, 2017). This research uses secondary data. Secondary data is data obtained from collecting various sources. The data in this research comes from the Central Statistics Agency. The data used in this research include Gross Regional Domestic Product Data at Constant Prices in five large cities on the island of Sumatra (Medan, Pekanbaru, Palembang, Bandar Lampung, and Batam); Economic Sector Distribution Data Based on Prices Applicable to five major cities on the island of Sumatra; Data on the Economic Growth Rate of five major cities on the island of Sumatra; as well as Gross Regional Domestic Product data for the five related provinces, namely North Sumatra, Riau, South Sumatra, Lampung and the Riau Islands in the form of time series data for 2017-2022.

### Data analysis method

The analytical method used in this research is the structural transformation analysis method, location quotient analysis, and class typology analysis which is analyzed using the Microsoft Excel program. The choice of this method is in accordance with the objectives of this research, namely to analyze shifts in economic structure, analyze basic and non-basic economic sectors, and classify them based on four economic quadrants consisting of Quadrant I as economic sectors that are classified as fast advancing and

fast growing; Quadrant II is an economic sector that is classified as a developed but depressed sector; Quadrant III is classified as a potential economic sector; and Quadrant IV as a relatively underdeveloped economic sector.

### **Structural Transformation Analysis**

Structural transformation can also be said to be a change in the economic structure. This analysis is used to see a process of change in economic sectors that are related to one another. The transformation/shift is shifting from the agricultural sector to economic sectors that provide higher income, so that they can support the economy in a region (Kuncoro, 2003:59). The speed of structural change or structural transformation can be found using the Hill et al (2008) formula as follows:

$$\text{Structural Changes} = \sum_i |\text{share}_{i,t} - \text{share}_{i,t0}|$$

Where  $i$  is the activity of 17 economic sectors in the income component, which includes; SectorAgriculture, Forestry and Fisheries;SectorMining and excavation;SectorProcessing industry;SectorProcurement of Electricity and Gas;SectorWater Supply and Waste Management;SectorConstruction;SectorWholesale and Retail Trade;SectorTransportation and Warehousing;SectorProvision of Accommodation and Food and Drink;SectorInformation and Communication;SectorFinancial and Insurance Services;SectorReal Estate;SectorCorporate Services;SectorGovernment administration;SectorEducation Services;SectorHealth Services and Social Activities,as well as; SectorOther Services.*Share*Economic activity per sector is the difference in year  $t$  and year  $t_0$  or the initial year which is considered as a comparison.

### **Location Quotient (LQ) Analysis**

This analysis is used to identify potential sectors in five large cities on the island of Sumatra which are included in the base and non-base sectors. With LQ analysis, it can be seen how much level of specialization the base sector has in the area of analysis, withThe calculation formulation is as follows:

$$LQ = (X_{ij}/X_j)/(Y_i/Y)$$

Where :

- $X_{ij}$  : Sector  $i$  income in the analysis area
- $X_j$  : Total revenue in the analysis area
- $Y_i$  : Sector  $i$  income in the reference area is higher
- $Y$  : Total income in the reference area is higher
- LQ : Mark*Location Quotient*

There are three possible LQ values that can be obtained, namely:

- 1) If  $LQ > 1$  it is categorized as a base sector. The growth rate of the sector concerned moreheight from the reference area.
- 2) If  $LQ = 1$  stillcategorized as the base sector. This sector has the same sector growth rate in the analysis area and the reference area.
- 3) If  $LQ < 1$  means the sector is a non-base sector. The growth rate of this sector is smaller in the analysis area compared to the growth rate in the reference area.

## Klassen Typological Analysis

Klassen typology is an analytical method used to determine the pattern and structure of regional sectoral growth. Analysis of the class typology is based on two main indicators, namely regional economic growth and regional per capita income. Classification of economic sectors by looking at the growth and contribution of the economic sector to total GDP. This analysis is used with the aim of determining which economic sectors are classified as more advanced and superior and which sectors are classified as lagging behind.

**Figure 2.** The Klassen typology quadrant indicators are based on four classifications.

<p style="text-align: center;"><b>Quadrant I</b></p> <p style="text-align: center;">The sector is fast developing and growing fast</p>	<p style="text-align: center;"><b>Quadrant II</b></p> <p style="text-align: center;">The sector is advanced but depressed</p>
<p style="text-align: center;"><b>Quadrant III</b></p> <p style="text-align: center;">The sector has potential or can still develop rapidly</p>	<p style="text-align: center;"><b>Quadrant IV</b></p> <p style="text-align: center;">The sector is relatively underdeveloped</p>

In grouping regional economic sectors, class analysis divides regions into two main indicators which are then divided into four classifications, namely:

1. Quadrant I as a developed and rapidly growing sector;
2. Quadrant II as a developed but depressed sector;
3. Quadrant III as a potential sector or one that can still develop rapidly;
4. Quadrant IV is a relatively underdeveloped sector.

## Results and Discussion

### Structural Transformation Analysis

The following are the results of the structural transformation analysis in 5 analysis areas (Medan, Pekanbaru, Palembang, Bandar Lampung, and Batam) in 2017-2022:

**Table 2.** Results Structural Calculations In 5 Big Cities on the Island of Sumatra (Medan, Pekanbaru, Palembang, Bandar Lampung, and Batam) 2017-2022

Economic Sector	Sector Shift Results				
	Medan	Pekanbaru	Palembang	Bandar Lampung	Batam
<b>Primary</b>					
A, Agriculture, Forestry and Fisheries	-0.29	-0.05	-0.13	-0.57	-0.05
B, Mining and Quarrying	0.00	0.00	-0.02	-0.21	-0.02
<b>Total</b>	<b>-0.29</b>	<b>-0.05</b>	<b>-0.15</b>	<b>-0.78</b>	<b>-0.07</b>
<b>Secondary</b>					
C, Processing Industry	-0.67	1.23	-0.80	-1.28	3.43
D, Procurement of Electricity and Gas	-0.01	0.02	0.00	0.00	-0.19

E, Water Supply, Waste Management, Waste and Recycling	-0.01	-0.01	-0.02	0.00	-0.02
F, Construction	-0.13	-0.56	-2.43	0.57	0.75
<b>Total</b>	<b>-0.82</b>	<b>0.68</b>	<b>-3.25</b>	<b>-0.72</b>	<b>3.97</b>
<b>Tertiary</b>					
G, Wholesale and Retail Trade, Car and Motorcycle Repair	1.61	0.29	1.80	0.69	-0.59
H, Transportation and Warehousing	-0.49	-0.27	0.03	1.52	-1.73
I, Provision of Accommodation and Food and Drink	-0.41	-0.39	0.38	-0.22	-0.78
J, Information and Communication	0.73	0.46	0.70	0.12	0.45
K, Financial Services and Insurance	-0.65	0.19	-0.27	-0.48	-0.19
L, Real Estate	0.28	-0.23	-0.08	-0.02	-0.49
M,N, Corporate Services	0.30	-0.01	0.00	0.01	0.00
O, Government Administration, Defense and Mandatory Social Security	-0.14	-0.57	-0.78	-0.46	-0.02
P, Education Services	-0.16	-0.08	0.08	0.28	-0.22
Q, Health Services and Social Activities	0.02	0.22	0.13	0.09	-0.06
R,S,T,U, Other Services	0.02	-0.25	0.02	-0.02	-0.26
<b>Total</b>	<b>1.11</b>	<b>-0.64</b>	<b>2.02</b>	<b>1.50</b>	<b>-3.89</b>

The results of calculating the economic structure in the city of Medan show a visible shift in the economic sector of -0.29 percent throughout 2017-2022. The shift in the secondary economic sector was -0.82 percent. This negative shift in the primary and secondary sectors was accompanied by an increase in contribution to the tertiary economic sector. Medan City focuses more on regional income by carrying out industrial activities and services (tertiary sector) with a total contribution of 1.11 percent throughout 2017-2022. Next is a discussion of the results of the structural transformation analysis carried out in Pekanbaru City in 2017-2022.

The results of calculating the economic structure in the city of Pekanbaru show that the primary sector experienced a negative economic shift with a shift value of -0.05 percent. In the secondary sector there was a positive shift in the economic sector with a shift value of 0.68 percent. This positive shift was supported by a significant increase in the Processing Industry sector which increased by 1.23 percent. The tertiary economic sector had a negative shift of 0.64 percent. In this case it can be seen that economic growth in Pekanbaru City is dominated by the contribution of the secondary sector. Next is a discussion of the results of the structural transformation analysis carried out in Palembang City in 2017-2022.

The results of calculating the economic structure in the city of Palembang show that the primary and secondary sectors have a negative shift. In the primary economic sector there was a shift in the economic sector of -0.15 percent, at the same time the secondary economic sector also showed a negative economic shift value with a contribution value of -3.25 percent. The contribution to economic growth in Palembang City is dominated by the contribution of the tertiary sector which is higher than the other two sectors with a total contribution of 2.02 percent. Next is a discussion of the results of the structural transformation analysis carried out in Bandar Lampung City in 2017-2022.

The results of calculating the economic structure in the city of Bandar Lampung show that in the primary and secondary economic sectors the total contribution shows a negative shift. In the primary economic sector the shift value occurred at -0.78 percent, the secondary economic sector had a total negative shift of -0.72 percent. Meanwhile, in the tertiary economic sector, the total shift occurred by 1.50

percent. Next is a discussion of the results of the structural transformation analysis carried out in Batam City in 2017-2022.

The results of calculating the economic structure in the city of Batam show a shift value in the primary economic sector of -0.07 percent. In the secondary economic sector there was a fairly high positive shift of 3.97 percent. Meanwhile, the tertiary economic sector experienced a fairly high negative shift value of -3.89 percent. In this case, it can be seen that economic growth in Batam City is dominated by the contribution of the industrial economic sector.

### *Location Quotient Analysis*

The following are the results of the structural transformation analysis in 5 analysis areas (Medan, Pekanbaru, Palembang, Bandar Lampung, and Batam) in 2017-2022:

**Table 3.** Results Structural Calculations In 5 Big Cities on the Island of Sumatra (Medan, Pekanbaru, Palembang, Bandar Lampung, and Batam) 2017-2022

No	Location Quotient Analysis Results					
	Economic Sector	Medan	Pekanbaru	Palembang	Baandar Lampung	Batam
1	Agriculture, Forestry and Fisheries	Non Base	Non Base	Non Base	Non Base	Non Base
2	Mining and excavation	Non Base	Non Base	Non Base	Non Base	Non Base
3	Processing industry	Non Base	Non Base	Base	Base	Base
4	Procurement of Electricity and Gas	Non Base	Base	Base	Non Base	Base
5	Water Supply, Waste Management, Waste and Recycling	Base	Base	Base	Base	Base
6	Construction	Base	Base	Base	Base	Non Base
7	Wholesale and Retail Trade; Car and Motorcycle Repair	Base	Base	Base	Base	Non Base
8	Transportation and Warehousing	Base	Base	Base	Base	Non Base
9	Provision of accommodation and food and drink	Base	Base	Base	Base	Non Base
10	Information and Communication	Base	Base	Base	Base	Base
11	Financial Services and Insurance	Base	Base	Base	Base	Base
12	Real Estate	Base	Base	Base	Base	Non Base
13	Company Services	Base	Base	Base	Base	Non Base
14	Government Administration, Defense, and Mandatory Social Security	Non Base	Base	Non Base	Base	Non Base
15	Education Services	Base	Base	Base	Base	Non Base



16	Health Services and Social Activities	Base	Base	Base	Base	Non Base
17	Other Services	Base	Base	Base	Base	Non Base

Based on the results of calculating the location quotient in the city of Medan in 2017-2022, it can be seen that 12 economic sectors in the city of Medan have an LQ value  $> 1$ , which means that the economic sector is a base sector, where the sector is a sector that is able to meet regional needs and is capable of carry out export activities to other regions. Meanwhile, the 5 sectors that have the smallest LQ value are LQ  $< 1$ , which means that the sector is a non-based sector, where the sector is a sector that has no potential to be developed or become a regional superior sector. Next is a discussion of the results of the LQ value calculations carried out in Pekanbaru City in 2017-2022.

Based on the results of calculating the location quotient in the city of Pekanbaru in 2017-2022, it can be seen that there are 14 other economic sectors, namely basic sectors originating from the secondary and tertiary economic sectors with LQ values  $> 1$  and there are 3 sectors that have the smallest LQ values, namely LQ  $< 1$  which means that the sector is a non-based sector, where the sector is a sector that has no potential to be developed or become a regional superior sector. Next is a discussion of the results of the LQ value calculations carried out in Palembang City in 2017-2022.

Based on the results of calculating the location quotient in the city of Palembang in 2017-2022, there are 14 economic sectors in the city of Palembang that have an LQ value  $> 1$ , which means that the economic sector is a base sector, where the sector is a sector that is able to meet regional needs and is able to do export activities to other regions. Meanwhile, the other 3 economic sectors are the sectors that have the smallest LQ value, namely LQ  $< 1$ , which means that the sector is a non-based sector, where the sector is a sector that has no potential to be developed or become a regional superior sector. Next is a discussion of the results of the LQ value calculations carried out in Bandar Lampung City in 2017-2022.

Based on the results of calculating the location quotient in the city of Bandar Lampung in 2017-2022, it can be seen that most of the economic sectors in the city of Bandar Lampung are economic sectors with an LQ value  $> 1$ , which means that the sector is a base sector where the sector is a sector that is able to meet regional needs. and able to carry out export activities to other regions. And there are 3 sectors that have the smallest LQ value, namely LQ  $< 1$ , which means that the sector is a non-base sector, where the sector is a sector that has no potential to be developed or become a regional superior sector. Next is a discussion of the results of the LQ value calculations carried out in Batam City in 2017-2022.

Based on the results of calculating the location quotient in the city of Batam in 2017-2022, there are only 5 economic sectors in the city of Batam that have an LQ value  $> 1$ , which means that the economic sector is a base sector, where the sector is a sector that is able to meet regional needs and is capable of carry out export activities to other regions. Meanwhile, some other sectors are sectors that have an LQ value  $< 1$ , which means that the sector is a non-base sector, where the sector is a sector that has no potential to be developed or become a regional superior sector.

### Analysis Klassen Typology

The following are the results of the klassen typology analysis in 5 analysis areas (Medan, Pekanbaru, Palembang, Bandar Lampung, and Batam) in 2017-2022:

No	Results of Klassen Typology Analysis
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	Economic Sector	Medan	Pekanbaru	Palembang	Bandar Lampung	Batam
1	Agriculture, Forestry and Fisheries	IV	IV	IV	IV	II
2	Mining and excavation	IV	III	IV	III	III
3	Processing industry	III	IV	I	II	I
4	Procurement of Electricity and Gas	III	II	II	III	I
5	Water Supply, Waste Management, Waste and Recycling	II	II	II	II	I
6	Construction	I	I	I	II	IV
7	Wholesale and Retail Trade; Car and Motorcycle Repair	II	I	II	II	IV
8	Transportation and Warehousing	I	II	I	II	IV
9	Provision of accommodation and food and drink	I	II	II	II	IV
10	Information and Communication	I	I	II	I	IV
11	Financial Services and Insurance	II	I	I	II	I
12	Real Estate	I	I	II	I	IV
13	Company Services	I	I	II	II	IV
14	Government Administration, Defense, and Mandatory Social Security	III	II	IV	II	III
15	Education Services	II	I	I	I	IV
16	Health Services and Social Activities	I	I	IV	II	III
17	Other Services	II	II	II	II	IV

Based on the results of the *klassen* typology analysis in Medan City in 2017-2022, there are seven economic sectors which constitute quadrant one and are interpreted as being classified as fast advancing and fast growing, consisting of the Construction Sector; Transportation and Warehousing Sector; Accommodation and Food and Drink Provision Sector; Information and Communication Sector; Real Estate Sector; Corporate Services Sector; and the Health Services and Social Activities Sector, where these sectors have a higher average contribution and average GRDP growth than North Sumatra Province. There are five sectors in the second quadrant which are developed sectors but whose growth is starting to slow down or are under pressure. There are three sectors in the third quadrant category which are potential sectors or can develop. There are two sectors in the fourth quadrant category which are relatively underdeveloped sectors, namely the Agriculture, Forestry and Fisheries Sectors; and the Mining and Quarrying Sector. Next, there is a discussion regarding the results of the *Classes* typology analysis calculations carried out in Pekanbaru City in 2017-2022.

Based on the results of the *klassen* typology analysis in Pekanbaru in 2017-2022, there are seven economic sectors which constitute quadrant one and are defined as fast-growing and fast-growing, consisting of the Construction Sector; Wholesale and Retail Trade Sector; Information and Communication Sector; Financial Services and Insurance Sector; Real Estate Sector; Corporate Services Sector; Education Services Sector; and the Health Services and Social Activities Sector, where these sectors have a higher average contribution and average GRDP growth than Riau Province. There are six sectors in the second quadrant which are advanced sectors but whose growth is starting to be slow or depressed. There are two sectors in the fourth quadrant category which are relatively underdeveloped sectors, namely the Agriculture,

Forestry and Fisheries Sectors; as well as the Processing Industry Sector. Next is a discussion of the results of the Klassen typology analysis calculations carried out in Palembang City in 2017-2022.

Based on the results of the Klassen typology analysis in Palembang in 2017-2022, there are five economic sectors which constitute quadrant one and are defined as fast-growing and fast-growing, consisting of the Processing Industry Sector; Construction Sector; Transportation and Warehousing Sector; Financial Services and Insurance Sector; as well as the Education Services Sector; where these sectors have a higher average contribution and average GRDP growth than South Sumatra Province. There are eight sectors in the second quadrant which are advanced sectors but whose growth is starting to be slow or depressed, and there are four sectors in the fourth quadrant category which are relatively underdeveloped sectors, namely the Agriculture, Forestry and Fisheries Sectors; Mining and Quarrying Sector; Government Administration Sector; as well as the Health Services and Social Activities Sector. Next, there is a discussion regarding the results of the Klassen typology analysis calculations carried out in Bandar Lampung City in 2017-2022.

Based on the results of the klassen typology analysis in Bandar Lampung in 2017-2022, there are three economic sectors which constitute quadrant one and are defined as fast-growing and fast-growing, consisting of the Information and Communication Sector; Real Estate Sector; and the Education Services Sector, where these sectors have a higher average contribution and average GRDP growth than Lampung Province. There are eleven sectors in the second quadrant which are advanced sectors but whose growth is starting to be slow or depressed, there are two sectors in the third quadrant category which are potential sectors or can develop and there is one sector in the fourth quadrant category which is a relatively underdeveloped sector, namely the Agriculture Sector, Forestry, and Fisheries. Next is a discussion of the results of the Classsen typology analysis calculations carried out in Batam City in 2017-2022.

Based on the results of the Klassen typology analysis in Batam in 2017-2022, there are four economic sectors which constitute quadrant one and are defined as fast-advancing and fast-growing, consisting of the Processing Industry Sector; Electricity and Gas Procurement Sector; Water Supply and Waste Management Sector; and the Financial Services and Insurance Sector where these sectors have a higher average contribution and average GRDP growth than the Riau Islands Province. There is one sector in the second quadrant which is an advanced sector but its growth is starting to slow down or is under pressure, there are three sectors in the third quadrant category which are potential sectors or can develop and there are nine sectors in the fourth quadrant category which are relatively underdeveloped sectors, namely the Construction Sector; Wholesale and Retail Trade Sector; Transportation and Warehousing Sector; Accommodation and Food and Drink Provision Sector; Information and Communication Sector; Real Estate Sector; Corporate Services Sector; Education Services Sector; as well as other services sectors.

## Conclusion

From the three analytical tools, it is concluded that the economy in Medan City is dominated by the tertiary economic sector or the service economic sector. There are five economic sectors that are classified as non-basic economic sectors. There are three economic sectors that have the potential to be developed in the future. It is recommended that the Medan City Government pay attention to these three economic sectors which have the potential to be developed into leading sectors and continue to pay attention to the economic sectors in quadrant II of the class typology which are advanced economic sectors but are moving slowly. By paying attention to these potential economic sectors proportionally and determining policies that lead

to the development of these sectors, the economy in Medan City will certainly increase more quickly and not experience gaps or increases in only a few sectors.

From the three analytical tools, it is concluded that the economy in Pekanbaru City is dominated by the tertiary economic sector or the service economic sector. There are three economic sectors that are classified as non-based economic sectors, namely economic sectors that have the potential to be developed in the future. It is recommended that the Pekanbaru City Government stimulate the regional economy by focusing on leading sectors, especially sectors in the second quadrant of the class typology analysis, which are the sectors with the largest multiplier contributors in order to attract private investment which will absorb more workers and advance the regional economy. .

From the three analytical tools, it is concluded that the economy in Palembang City is dominated by the tertiary economic sector or the service economic sector. There are three economic sectors that are classified as non-basic economic sectors. There are four economic sectors included in the fourth quadrant of the Klassen typology, which means that these sectors are sectors that are relatively underdeveloped. It is recommended that the Palembang City Government pay special attention to the economic sectors in the second quadrant of the Klassen typology analysis, by paying attention to and increasing the budget for leading economic sectors which will encourage other sectors to develop as well.

From the three analysis tools, it is concluded that the economy in Bandar Lampung City is dominated by the tertiary economic sector or the service economic sector. There are three economic sectors that are classified as non-basic economic sectors. There are two economic sectors that have the potential to be developed in the future. In the Klassen typology analysis, most of the economic sectors in the city of Bandar Lampung are in the second quadrant, which means that the economic sector in the city of Bandar Lampung is classified as superior but needs more attention. It is recommended that the Bandar Lampung City Government give top priority to leading sectors that have the potential both in terms of contribution and in terms of growth to be developed as drivers of economic growth in the City of Bandar Lampung. Apart from that, the City of Bandar Lampung must also prioritize all service sectors which basically have a high level of specialization in the City of Bandar Lampung.

From the three analysis tools, it is concluded that the economy in Batam City is dominated by the tertiary economic sector or the service economic sector. Most of the economic sectors in Batam City are still classified as non-based economic sectors. In the Klassen typology analysis, most of the economic sectors in the city of Batam are in the fourth quadrant, which means that these sectors are relatively lagging behind compared to other economic sectors. It is recommended that the Batam City Government determine a sustainable economic strategy and prioritize the development of these economic sectors through appropriate economic development strategies not only in the secondary economic sector but also in the tertiary economic sector while still prioritizing leading sectors so that the economic potential in Batam City can grow and growing more rapidly.

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