



## **ANALYSIS OF LEADING SECTORS: STUDY CASE IN MEDAN 2014-2018**

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### ***Abstract***

*The purpose of this research is to determine the leading economic sectors in Medan. This study uses secondary data in the form of time series (time series) from the Gross Regional Domestic Product (GRDP) of Medan. By using GDRP data, then it can be known which sector is prominent sector in that region. Some methods using GDRP data as a decisive prominent sector are Typology Klassen, LQ, and Shift Share. These methods classifying the economic sectors into four groups, they are prominent sector, based on large of contribution and rate of growth. By taking the study Medan area, then by used those methods can be known which sector be prominent Sector in Medan area. Based on the result from analysis methods, they are same result about prominent Sector: Water Supply, Waste Management, Waste and Recycling; Construction and Wholesale and Retail Trade; Car and Motorcycle repair, real estate, education services, health services and social activities, and other services.*

**Keywords:** *Typology Klassen, LQ, Shift Share*

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## INTRODUCTION

Economic development cannot be run without the consistent efforts from all parties to make it well-maintained as required. The success of economic development itself could be identified from the level of economic growth as indicated by the increase in gross regional

domestic product (Rahmawati et al., 2021). The prime condition in its expansion is the existence of government and its people. Countless efforts are delivered from various parties to promote the maximum welfare of the community (Ahsan & Azis, 2018, p. 13).

**Table 1.** Gross Regional Domestic Product of Regency/City Based on the Constant Price (in Billion Rupiah) 2014-2018

Regency/City	Year				
	2014	2015	2016	2017	2018
North Sumatera	419573.31	440955.85	467187.76	491922.92	512762.63
Nias	1991.99	2100.11	2214.15	2325.01	2440.16
Mandailing Natal	7036.90	7474.42	7933.13	8416.50	8904.14
South Tapanuli	7542.78	7921.24	8314.69	8748.18	9201.96
Central Tapanuli	5460.78	5738.32	6032.21	6348.44	6678.25
North Tapanuli	4645.42	4868.95	5070.19	5280.69	5510.19
Toba Samosir	4355.07	4553.17	4767.98	5001.43	5249.25
Labuhan Batu	18164.10	19079.93	20046.02	21048.17	22112.34
Asahan	20004.51	21118.75	22302.70	23525.35	24844.87
Simalungun	21194.28	22305.43	23508.97	24715.67	25996.21
Dairi	5153.83	5413.75	5688.45	5968.81	6267.82
Karo	11314.39	11880.93	12494.87	13145.85	13744.17
Deli Serdang	55793.75	58722.46	61839.67	64991.87	68341.00
Langkat	23157.01	24321.61	25533.81	26822.60	28170.08
South Nias	3356.39	3506.03	3659.77	3826.62	4018.74
Humbang Hasundutan	3249.45	3419.57	3577.05	3756.66	3946.12
Pakpak Bharat	639.29	677.18	717.89	760.55	805.01
Samosir	2367.10	2503.73	2635.77	2776.85	2931.70
Serdang Bedagai	15080.38	15841.75	16656.17	17516.43	18421.38
Batu Bara	19459.38	20259.69	21165.04	22034.26	22998.60
Padang Lawas Utara	6228.35	6598.30	6991.66	7378.98	7791.05
Padang Lawas	5997.31	6341.53	6725.98	7110.25	7534.30
South Labuhanbatu	14547.52	15294.17	16088.42	16907.59	17797.95
North Labuanbatu	13414.53	14109.37	14843.99	15602.05	16413.33
North Nias	1847.62	1948.00	2043.91	2134.49	2228.75
West Nias	970.55	1017.80	1074.48	1126.19	1179.91
Sibolga	2758.57	2914.51	3063.07	3224.58	3393.91
Tanjungbalai	4392.58	4637.50	4904.54	5174.85	5473.63

Pematangsiantar	7594.53	7992.32	8380.77	8750.15	9170.19
Tebing Tinggi	3084.05	3234.05	3400.75	3575.51	3760.50
Medan	117328.08	124277.48	132062.86	139739.34	148007.14
Binjai	6234.29	6571.20	6935.55	7309.57	7708.59
Padangsidempuan	3285.46	3451.08	3636.87	3830.32	4038.93
Gunungsitoli	2565.26	2703.50	2876.34	3049.12	3232.97

From Table 1, it is revealed that the GRDP of North Sumatera in 2014-2018 increased each year. The development of Regency/City in North Sumatera also supports the enhancement. Medan, the city of the province, was identified as the city with the high potency considering its GRDP rate calculated as the highest among all regencies/cities in North Sumatera. It is unseparated from the role of economic sectors.

Thus, this research tries to explain the sector transformation and the pattern of economic growth to identify the key sectors. They will be later used as considerations for defining the policies in terms of development planning. It aligns with the statement (Amalia, 2012) that the method development addressed to regional economic analysis is essential for collecting the data on the regional economy and the growth process. The advancement of this analysis method can be employed to determine the appropriate steps for accelerating economic growth.

## **THEORETICAL BACKGROUND**

### **The Definition of Territory**

The territory is defined as a geographic unit with all elements attached. It is due to a particular consideration scope limitation, either from the planning approach perspective or management limitation (Hardati, 2016).

The territory also can be delineated as a geographical area with the associated elements, limited to a specific observation scope (Kasikoen, 2011).

### **Territory Economic Development**

In developing an area, economic growth is one of the crucial elements. It becomes an important indicator to assess the area's performance in economic activities. Moreover, it is essential to evaluate the result of the economic development of an area. The economy is said to grow once the production of goods and services is escalated from the previous year. Economic growth indicates how far the economic activities could yield additional income or promote people's welfare in a certain period (Febryani, 2017).

### **The Area's Economic Development Planning**

Planning is a process that elaborates the organization's objective and determines the

strategies that meet the organization's goals. Planning is an essential process in all management processes. It is challenging to execute the organizational functions without appropriate planning, such as control and direction (Muhammad, 2017).

Economic development is a multidimensional process. Aside from catching up with economic growth, it also proposed increasing the people's per capita income to alleviate poverty (Rachman, 2019).

### **Gross Regional Domestic Product**

The economic development plan requires various statistics data as the determination basis of political strategies. Hence, the objective of the development could be achieved. Approaches and policies previously taken should be further evaluated. It is necessary to present periodic statistical data on national/regional income to identify the level of growth of people's income (BPS, 2018).

The data of an area's gross domestic product is crucial information to determine the production of the economic sector and confirm the specific area's growth (state/regency/city). With the existence of GRDP data, the leading sector can be later determined.

### **Economic Theory**

The theory of economics, first proposed by Richardson, revealed that the prime factors of economic growth in an area are directly related to the demand for goods and services

outside the designated area. Based on the theory of economics, the industry in the area is classified into two categories, the basic and non-basic sectors (Alhaq, 2017).

The basic sector performs export-oriented activities outside the economic territory of an area. The basic sector plays a primary mover in growth. The more extensive export activities, the more developed an area. While the non-basic sector is explained as the sector that produces the goods and services designated for people inside the economic area (Tumangkeng, 2012)

### **The Leading Sector**

The leading sector is an economic sector that has an essential position and stands out among other sectors in terms of the economy in a particular area. It is also said that the leading sector plays the most significant role in the territory's economy (Andre & Putra, 2017)

The determination of the priority sector must be considered comprehensively, not solely based on the value of the economic multiplier. The sustainability of raw materials, numbers of investments, market opportunity, and social-economy condition are also crucial factors that the policymakers should consider.

Recently, the development of economic policies has been directed to leading economic factors that are highly related to broader communities' interests. It is related to people's potencies and local economic resources. The

role of leading sectors becomes more strategic since they could provide a significant contribution to foreign exchange (Hajeri, 2015).

### **Klassen Typology Analysis**

Klassen Typology is the analysis conducted to classify the products in a sector, sub-sector, company, or area by comparing them to the area economic growth (or a country) by referring to the economic growth in the designated area. The Klassen Typology analysis result shares the regional economic sector classification (Widiarsih, 2020).

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

The Location Question analysis is employed to determine the basic and non-basic classification of economic sectors. It is defined as an analysis used to identify the level of economic factors specialization in a certain area by employing the basic sectors. Location quotient calculates the comparison of sector i output Share at the analyzed area and sector i output Share at the referred area (Jumiyanti, 2018).

### **Shift Share Analysis**

Shift - Share analysis is a method to analyze the regional economic performance, the structure shift, relative position of economic sectors, and identification of the area's leading sector in its correlation with the referred economy (referred area or broader) at two or more time points. From the result of the Shift-

Share analysis, a performance description of activities in a specific area can be explained from 3 available components (Wahyudi, 2014).

### **Previous Research**

A research by Rosita (2013), entitled *Analisis Sektor Unggulan Menggunakan Data PDRB (Studi Kasus BPS Kabupaten Kendal Tahun 2006 - 2010)* (The Analysis of the Leading Sectors Using GRDP Data (Case Study at BPS Kendal Regency in 2006-2010) revealed that agriculture as well as mining and excavation sector are the leading sectors.

The research of Andre (2017) entitled *Analisis Sektor Ekonomi Potensial dan Unggulan dalam Penentuan Kebijakan Pembangunan Daerah: Studi Kasus di Kabupaten Kubu Raya Tahun 2011-2015* (Analysis of Potential and Leading Economic Sector in the Determination of Regional Development Policy: Case Study at Kubu Raya Recency in 2011-2015) resulted that processing sector is considered as a potential sector.

The research by Ircham (2019) entitled *Analisis Sektor Unggulan Dalam Perekonomian Kabupaten Malang* (Analysis of the Economic Leading Sector in Malang Regency). It is suggested that the processing industry sectors, agriculture, forestry, fishery, and other services are referred to as the leading sectors to accelerate the economic growth overall.

Another research also conducted by Widiarsih (2020) entitled *Analisis Sektor*

*Ekonomi Unggulan Kota Dumai Tahun 2014-2018* (Analysis on Leading Economic Sector in Dumai in 2014-2018) presented that the leading economic sectors in Dumai. They are; transportation and warehousing, electricity and gas, accommodation, food and beverage, communication and information, company services, government administration, defense and mandatory social security, and educational services.

Takalumang (2018), in his study entitled *Analisis Sektor Ekonomi Unggulan Dalam mendorong Pertumbuhan Ekonomi Kabupaten/Kepulauan Sangihe* (The Analysis of Leading Economic Sector in its Role to Promote the Economic Growth in Sangihe Regency/Island, suggested the leading sectors found in Sangihe. The leading sectors can be listed as follows; government administration, defense and mandatory social security, agriculture, forestry, fishery, real estate, wholesale and retail, car and motorcycle repair, health services, and social activities.

The reseach by Fazil (2016) entitled *Keterkaitan Sektor Unggulan di Provinsi Aceh: Pengaruhnya Terhadap Pengembangan Perkotaan* (The relevancy of the Leading Sectors in Aceh Province: Its Correlation to Urban Development) also mentioned the close correlation between leading sectors in Sabang city with those in Banda Aceh city, Aceh Besar regency, Aceh Jaya Regency, and Aceh Barat

Regency. While, the leading sectors in Banda Aceh city highly related to those in Sabang city, Aceh Besar regency, and Aceh Barat regency.

Research by Amalia (2014) entitled *Penentuan Sektor Unggulan Perekonomian Wilayah di Indonesia* (The Determination of Leading Economic Sectors in Indonesia) referred to three basic sectors: agriculture, processing industry, and financial, rental services, and company services.

Widiasih (2020) suggested in her research entitled *Analisis Sektor Ekonomi Unggulan Kota Dumai Tahun 2014-2018* (Analysis on the Leading Economic Sector in Dumai in 2014-2018) that the objective of the Klassen Typology method is to showcase the economic sector classification in a certain area.

Later, there is a research conducted by Jumiyaniti (2018) entitled *Analisis Location Quotient dalam Penentuan Sektor Basis dan Non Basis di Kabupaten Gorontalo* (Location Quotient Analysis in the Determination of Basic and Non-basic Sectors in Gorontalo). It is identified that the Location quotient method is addressed to calculate the comparison between sector i share output at the area of analysis with the sector i share output at the area of reference.

Another research was carried out by Wahyudi (2014) entitled *Perencanaan Pembangunan Ekonomi Wilayah Berbasis Sektor Unggulan* (Economic Development Planning based on the Leading Sector). A case

study in Pasaman Regency post regional autonomy reveals that Shift-Share Method is addressed to analyze the regional economic performance, the structure shift, relative position of economic sectors, and identification of the region's leading sectors in its association with the referred economy (a referred area or broader) in two or more time points.

### **Framework**

Analysis of determining factors in economic growth is required as the primary base to formulate future economic development policies. Such existing factors could direct the regional development to more potential sectors that might promote the acceleration of regional development.

## **RESEARCH METHOD**

### **Types of Research**

Quantitative research is a type of research employed since it involves the analysis of secondary data to identify the leading sectors in Medan City.

### **Time and Location of Research**

The research is started on the date of research approval, approximately two months. One first month is allocated for data collection, and another month is allocated for data processing. The research is carried out in Medan. This research was conducted in the selected Location to enable the results, which are leading sectors in the economy, to be

applied as the information and prioritized in the development plan in the designated area.

### **Target/Research Subject**

People's GRDP in Medan is used as the subject for the research entitled The Analysis on the Leading Economic Sectors in Medan City for 2014 – 2018.

### **Procedures**

The following are steps or procedures of the research:

#### **1. Stage of Plan or Preparation**

This stage is defined as the research preparation by exploring the literature, articles, and writings, either directly or indirectly associated with the leading sector analysis in Medan. Later, the research design could be manufactured.

#### **2. Stage of Implementation**

At this stage, the researchers are directly involved in GRDP data collecting in Medan City.

#### **3. Stage of Analysis/The Verification of Research Result**

This stage is considered the last step of the research that covers the process of writing and research report composing, in the form of mini-research. The researcher obtains the result of analysis of the leading sectors in Medan City over the further analysis of several data on people's GRDP in Medan City.

## Data, Instrument, and Technique of Data Collecting

Secondary data is employed in this research, which is the data of GRDP from the perspective of economic sectors. The data contain the GRDP of economic sectors in Medan. The instruments are the documents that originated from Statistics Indonesia (BPS) that contains the GRDP of Medan City. The data are accessed online through the documents published by Statistics Indonesia (BPS), which contains the GRDP Medan city.

## Data Analysis Technique

Several data analysis methods are employed, which are: Klassen Typology Analysis method, Location Quotient (LQ) Analysis method and Shift-Share Analysis method.

### *Klassen Typology Analysis method*

**Table 2.** Klassen Typology Classification of Sectoral Approach

Quadrant I	Quadrant II
The progressive and rapid-growth sector $s_i > s$ ; $s_{ki} > s_k$	Progressive-yet-suppressed Sector $s_i < s$ ; $s_{ki} > s_k$
Quadrant III	Quadrant IV
Potential Sector, still be able to develop rapidly $s_i > s$ ; $s_{ki} < s_k$	Relatively lagging Sector $s_i < s$ ; $s_{ki} < s_k$

Quadrant I is pinpointed as the quadrant in which its specific sectoral growth rate in GRDP ( $s_i$ ) is more significant than the rate of the referred sectoral growth rate of

regional GRDP ( $s$ ), which has the value of sector contribution towards GRDP ( $s_{ki}$ ), which is bigger than the referred contribution of designated sector towards regional GRDP ( $s_k$ ). This classification is denoted  $s_i > s$  and  $s_{ki} > s_k$ .

Quadrant II is illustrated as the quadrant in which the growth rate of a certain sector in GRDP ( $s_i$ ) is lower than the referred sector growth rate in regional GRDP ( $s$ ). Yet, it provides the value of sector contribution towards GRDP ( $s_{ki}$ ), which is bigger than the referred sector contribution towards regional GRDP ( $s_k$ ). This classification is denoted with  $s_i < s$  and  $s_{ki} > s_k$ .

Quadrant III is defined as the quadrant in which a specific sector growth rate in GRDP ( $s_i$ ) is higher than the referred sector growth rate in regional GRDP ( $s$ ). Yet, it shares the value of sector contribution toward GRDP ( $s_{ki}$ ), lower than the referred sector contribution towards regional GRDP ( $s_k$ ). This classification is symbolized with  $s_i > s$  and  $s_{ki} < s_k$ .

Quadrant IV is a quadrant in which the growth rate of a particular sector GRDP ( $s_i$ ) is lower than the referred growth rate of a sector towards regional GRDP ( $s$ ) that also shares a smaller sector contribution value towards GRDP ( $s_{ki}$ ) compared to the referred sector contribution towards regional GRDP ( $s_k$ ). This classification is signified with  $s_i < s$  and  $s_{ki} < s_k$ .

The steps of calculation could be seen as follows:



1. Calculating the level of sector i GRDP growth by using the following formulation:

$$Si = \frac{PDRB_t - PDRB_{t-1}}{PDRB_{t-1}} \times 100\% \quad \text{..... (1)}$$

Description:

Si = Level of GRDP growth for sector i (in percentage)

t = Year

2. Calculating the average growth of GRDP in the analyzed area and referred area:

$$S = \frac{\sum Si}{n} \quad \text{..... (2)}$$

Description :

S = The average of sector i GRDP growth level in the analyzed area (%)

n = Numbers of year

3. Calculating the level of contribution of GRDP Menghitung tingkat kontribusi PDRB per economic sector, by applying the following formula:

$$Ki = \frac{PDRB \text{ sektor } i}{\text{Total PDRB}} \times 100\% \quad \text{..... (3)}$$

Description:

Ki = Level of GRDP contribution (in percentage)

T = Year

i = Economy Sector

4. Calculating the average GRDP contribution level per economic sector by using the following formula:

$$SKi = \frac{\sum K}{N} \times 100\% \quad \text{..... (4)}$$

Description:

Ski = The Average GRDP contribution rate per analysis economic sector (%)

n = Number of years

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

LQ can be calculated by using the following formula:

$$LQ = \frac{X_i^r / X^r}{X_i^n / X^n} \quad \text{..... (5)}$$

Description:

$X_i^r$  = The value of sector i GRDP at the area of analysis

$X^r$  = Total of GRDP at the area of analysis

$X_i^n$  = The value of sector i GRDP at the referred area

$X^n$  = Total of GRDP at the referred area

From the calculation of LQ, the conclusion could be drawn as follows:

- 1) If the value of  $LQ > 1$ , the sectors are classified as basic sectors. It could fulfill not only the internal requirements but also the external needs. Therefore this sector is potential for development.
- 2) If the value of  $LQ < 1$ , the sectors are classified as non-basic. Imports are required, making these sectors less potential for further development.

### **Shift-Share Analysis method**

Steps that must be carried out in Shift Share Analysis are:

1. To determine the area that will be analyzed. In this research, Medan is determined as the designated area.

2. To determine the indicators of economic activities and period of analysis. In this research, the indicators involve the revenue as demonstrated by the value of GRDP of regencies/cities and GRDP of North Sumatera Province. The period of the research is determined from 2014 to 2018.
3. To calculate the alteration of economic indicators:

The change in GRDP is calculated as follows:

$$\Delta Y_{ij} = Y'_{ij} - Y_{ij} \quad \dots\dots\dots (1)$$

The percentage of GRDP change

$$\Delta Y_{ij} = Y'_{ij} - Y_{ij} \quad \dots\dots\dots (2)$$

In which:

$Y_{ij}$  = GRDP of Sector i in Regencies/Cities at the year of analysis

$Y'_{ij}$  = GRDP of Sector i in Regencies/Cities at the end of the year of analysis

4. Calculating the ratio of GRDP

$$r_i = (Y'_{ij} - Y_{ij})/Y_{ij} \quad \dots\dots\dots (1)$$

Description:

$r_i$  = GRDP Ratio of sector i in Regencies/Cities

$Y_{ij}$  = GRDP of Sector i in Regencies/City at the analysis year

$Y'_{ij}$  = GRDP of Sector i in Regencies/City at the end of the year of analysis

$$R_i = (Y'_{ij} - Y_{ij})/Y_{ij} \quad \dots\dots\dots (2)$$

Description:

$R_i$  = Province GRDP ratio from sector i

$Y_{ij}$  = Province GRDP of Sector i at the year of analysis

$Y'_{ij}$  = Province GRDP of Sector i at the end of the year of analysis

$$R_a = (Y'_{ij} - Y_{ij})/Y_{ij} \quad \dots\dots\dots (3)$$

$R_a$  = Province GRDP ratio

$Y_i$  = Province GRDP at the year of analysis

$Y'_i$  = Province GRDP at the end of the year of analysis

5. To calculate an area's growth (Budiharsono, 2001). The component of regional's growth (PR)

$$PR_{ij} = (R_a) Y_{ij} \quad \dots\dots\dots (1)$$

Description:

$PR_{ij}$  = The component of regional growth of sector i for the area of Regencies/Cities

$R_a$  = The ratio of the Province's GRDP

$Y_{ij}$  = The GRDP of Sector i in Regencies/Cities in the basic year of analysis of Proportional Growth (PP) components

$$PP_{ij} = (R_i - R_a) Y_{ij} \quad \dots\dots\dots (2)$$

Description:

$PP_{ij}$  = The proportional growth component of sector i in Regencies/Cities

$R_i$  = GRDP ratio of sector i in Province

$R_a$  = GRDP ratio of Province

$Y_{ij}$  = GRDP of Sector i in Regencies/Cities at the basic year of analysis for the area share growth component (PPW)

$$PPW_{ij} = (r_i - R_i) Y_{ij} \quad \dots\dots\dots (3)$$

Description:

PPW<sub>ij</sub> = The area share growth component of sector i in Regencies/Cities  
 $r_i$  = GRDP ratio of sector i in Regencies/Cities

$R_i$  = GRDP ratio of sector i in Province

$Y_{ij}$  = GRDP of Sector i in Regencies/Cities at the year of analysis

## THE RESULT OF RESEARCH AND DISCUSSION

Table 1 verifies the sectors that provide the averagely high contribution to GRDP in

Medan: Wholesale and Retail sectors; Car and Motorcycle Repair, Construction, and Processing Industry. Averagely speaking, the higher contribution is provided by the sectors of Health Service and Social Activity, Information and Communication, as well as Construction. While the sectors that contribute the slightest average growth, or even negative, are Mining and Excavation.

**Table 3.** The Growth Rate and Sector's Contribution to GRDP in Medan City 2014-2018

No	Sector	Medan City	
		Growth Average (Si) %	Contribution Average (Ski) %
1	Agriculture, Forestry, and Fishery	4,78	1,08
2	Mining and Excavation	-2,54	0,00
3	Processing Industry	3,16	14,71
4	Electricity and Gas	3,54	0,11
5	Water Supply, Waste Management, Waste and Recycle	7,37	0,17
6	Construction	7,54	19,34
7	Wholesale and Retail; Car and Motorcycle Repair	6,94	25,86
8	Transportation and Warehousing	2,52	6,09
9	Acommodation, Food and Average	7,53	2,52
10	Information and Communication	7,66	6,35
11	Financial Services and Insurance	3,39	6,63
12	Real Estate	7,36	7,64
13	Company Services	6,61	2,33
14	Government Administration, Defense, and Mandatory Social Security	4,75	1,69
15	Education Services	6,85	2,94
16	Health Services and Social Activities	9,53	1,48
17	Others	7,33	1,06

Table 3 demonstrates the classification of sectors, GRDP of Medan City in 2014-2018, based on the Klassen Typology. The sectors are included in the category of progressive and rapid growth: Water Supply, Waste Management, Waste and Recycle, Construction, Wholesale and Retail, Car and Motorcycle Repair, Accommodation and Food Beverage, Financial and Insurance Services,

Real Estate, Health Service and Social Activities, Other Services and Educational Services. None is included in quadrant II. Meanwhile, the relatively lagging sectors are Agriculture, Forestry and Fishery, Mining and Excavation, Processing Industry, Electricity and Gas, Government Administration, Defence, and Mandatory Social Security.

**Table 4.** Classification of sectors on GRDP Sectors of Medan in 2014 – 2018 based on Klassen Typology

Quadrant I	Quadrant II
<p>Progressive and Rapid Growth Sector  <math>si &gt; s</math> ; <math>ski &gt; sk</math>                      - Water Supply, Waste Management, Waste and Recycle                      - Konstruksi                      - Wholesale and Retail; Car and Motorcycle Repair                      - Accommodation, Food, and Beverage                      - Financial Service and Assurance – Real Estate – Health Service and Others</p>	<p>Progressive yet Suppressed Sector  <math>si &lt; s</math> ; <math>ski &gt; sk</math>                      - Transportation and Warehousing                      - Information and Communication                      - Company Services</p>
Quadrant III	Quadrant IV
<p>The potential sector that could still develop  <math>si &gt; s</math> rapidly; <math>ski &lt; sk</math></p>	<p>Relatively lagging sector  <math>si &lt; s</math> ; <math>ski &lt; sk</math>                      - Agriculture, Forestry, and Fishery                      - Mining and Excavation                      - Processing Industry                      - Pengadaan Listrik dan Gas                      - Government Administration, defense, and mandatory social security</p>

Based on Table 4 about the classification of sectors on GRDP of Medan city period of 2014 – 2018, the sectors that are included in the category of progressive and rapid growth are Water Supply, Waste Management, Waste and Recycle, Construction, Wholesale and Retail, Car and Motorcycle Repair, Accommodation, food and beverage, Financial and Insurance Services, Real Estate, Health Service and Social Activities, Other Services, and Educational Services. None is included in quadrant II.

While the sectors included in the category of relatively lagging sectors are: Agriculture, Forestry and Fishery, Mining and Excavation, Processing Industry, Electricity and Gas, Government administration, Defense, and Mandatory Social Security.

#### **Basic and Non-Basic Sectors of Area's Economy**

Anytime the calculation indicates  $LQ > 1$ , it means that the basic sector has the potential to export. In contrast,  $LQ < 1$

indicates the excluded sectors from basic sectors (local/import sectors).

Table 1 on the analysis of Location Quotient reveals the result of sector classification of basic and non-basic sectors in Medan from 2014 to 2018. The analysis found

that the basic sector in Medan recorded an average LQ of 2,63 in the sector of Company Services. While for non-basic, the sector with the least average of 0,00 is the Mining Excavation.

**Table 5.** The Result of LQ Analysis on GRDP of Medan City based on the result of Employment Data of 2014-2018

No	Sector	North Sumatera		Medan City	
		Growth Average (S) / %	Contribution Average (Sk) / %	Growth Average (Si) / %	Contribution Average (Ski) / %
1	Agriculture, Forestry, and Fishery	4,95	24,87	3,92	57 ,45
2	Mining and Excavation	5,44	1,32	4,42	0 ,25
3	Processing Industry	3,59	19,34	6,57	3 ,10
4	Electricity and Gas	5,54	0,14	6,02	0 ,09
5	Water Supply, Waste Management, Waste and Recycle	5,55	0,10	5,43	0 ,08
6	Construction	6,03	12,41	5,62	6 ,58
7	Wholesale and Retail; Car and Motorcycle Repair	5,61	17,52	7,60	9 ,60
8	Transportation and Warehousing	6,16	4,64	6,00	4 ,49
9	Accommodation, Food and Beverage	6,97	2,28	7,33	2 ,42
10	Information and Communication	7,82	2,58	5,63	0 ,93
11	Financial Services and Insurance	3,22	3,06	5,14	1 ,25
12	Real Estate	6,23	4,16	6,91	3 ,09
13	Company Services	6,63%	0,88	5,20%	0 ,19
14	Government Administration, Defense, and Mandatory Social Security	4,88	3,25	5,49	5 ,60
15	Education Services	5,51	2,02	6,09	2 ,47
16	Health Services and Social Activities	6,97	0,94	10,02	1 ,17
17	Others	6,75	0,50	8,17	1 ,25

#### Analysis of Area Growth Component

As shown in Table 1, the most considerable sectoral improvement exists in the sectors of Wholesale and Retail, Car Repair, and 56 Motorcycles for Rp. 6687709,18. The lowest PR component is recorded in the sector of Mining and Excavation for Rp. 451,40 million. It can be underlined that several sectors are decreased in contribution toward the GRDP of Medan. The sector that owns the highest PP value ( $PP_{ij} > 0$ ) is the Information

and Communication sector. It is recommended for development since the growth is considered as good. The sector that is recorded with the lowest PP ( $PP_{ij} < 0$ ) is the processing industry. If  $PP_{Wij} > 0$ , sector i is classified with proper competitiveness, but if the  $PP_{Wij} < 0$ , then sector i is classified with poor competitiveness. The sectors that are included with a positive value of  $PP_{Wij}$  are other services, Health Services, Social Activities, Educational services, Company

services, Real Estate, Wholesale and Retail, Recycle. It is stated that these sectors have Car and Motorcycle Repair, Construction, and good competitiveness compared to other Water Supply, Waste Treatment, Waste and areas in North Sumatera Province.

**Table 6.** Shift Share Analysis in Medan City in 2014-2028

No	Sector	PRij Million (Rp)	PPij Million Rp)	PPWij Million (Rp)
1	Agriculture, Forestry, and Fishery	289280,9	(2725,93)	(43.809,82)
2	Mining and Excavation	451,40	35,00	(640,11)
3	Processing Industry	4061748,89	(1176684,34)	(318.699,49)
4	Electricity and Gas	31546,81	(3697,52)	(7.188,80)
5	Water Supply, Waste Management, Waste and Recycle	43618,49	2539,33	20.081,95
6	Construction	4888846,05	717828,52	1.431.907,04
7	Wholesale and Retail; Car and Motorcycle Repair	6687709,18	181717,60	1.519.221,69
8	Transportation and Warehousing	1599412,65	397023,99	(65.610,93)
9	Accommodation, Food and Beverage	640755,92	268061,13	(11.407,33)
10	Information and Communication	1644039,46	1011562,24	(294.564,96)
11	Financial Services and Insurance	1803032,78	(662269,11)	(110.570,15)
12	Real Estate	1958467,89	413040,89	378.815,82
13	Company Services	604869,69	187124,52	981,50
14	Government Administration, Defense, and Mandatory Social Security	464318,31	(75451,48)	(21.643,09)
15	Education Services	752374,13	22918,39	197.560,82
16	Health Services and Social Activities	363852,33	147369,41	158.922,21
17	Others	269415,86	88298,00	28.290,37

#### Area Priority Sector

Based on the analysis of Klassen Typology, Location Quotient, and Shift Share, the sectors which own the potential superiority in Medan can be further developed. The values of Klassen Typology,

Location Quotient, and Shift Share for each sector are presented as follows:

**Table 7.** Potential Sectors for Development in Medan City Based on the GRDP data in 2014-2018, Employing Klassen Typology, Location Quotient, and Shif Share Methods

No	Sector	Klassen Typology	Growth Rate	
			Location Quotient	Shift Share
1	Agriculture, Forestry, and Fishery	Relatively Lagging	Non-Basic	Low Competitiveness
2	Mining and Excavation	Relatively Lagging	Non-Basic	Low Competitiveness
3	Processing Industry	Relatively Lagging	Non-Basic	Low Competitiveness
4	Electricity and Gas	Relatively Lagging	Non-Basic	Low Competitiveness
5	Water Supply, Waste Management, Waste and Recycle	Progressive	Basic	High Competitiveness
6	Construction	Progressive	Basic	High Competitiveness
7	Wholesale and Retail; Car and Motorcycle Repair	Progressive	Basic	High Competitiveness
8	Transportation and Warehousing	Progressive yet suppressed	Basic	Low Competitiveness
9	Accommodation, Food, and Beverage	Progressive	Basic	Low Competitiveness
10	Information and Communication	Progressive yet suppressed	Basic	Low Competitiveness
11	Financial Services and Insurance	Progressive	Basic	Low Competitiveness
12	Real Estate	Progressive	Basic	High Competitiveness
13	Company Services	Progressive yet suppressed	Basic	High Competitiveness
14	Government Administration, Defense, and Mandatory Social Security	Relatively Lagging	Non-Basic	Low Competitiveness
15	Education Services	Progressive	Basic	High Competitiveness
16	Health Services and Social Activities	Progressive	Basic	High Competitiveness
17	Others	Progressive	Basic	High Competitiveness

It is shown in Table 7, based on the calculation of three analysis tools, the leading sectors in Medan are notified by the criteria of progressive and rapid growth, basic, and competitive. Those sectors that meet the classification requirement are Water Supply, Waste Management, Waste and Recycle, Construction, Wholesale and Retail, Car and Motorcycle Repair, Real Estate, Educational

Services, Health Services and Social Activities, and others

## CONCLUSION AND SUGGESTION

### Conclusion

Several conclusions can be drawn from the research on the determination analysis of the leading economic sectors in Medan from 2014 to 2018. By employing analysis of Klassen Typology, Location

Quotient, and Shift Share, the sectors that meet the competitiveness classification are Water Supply, Waste Management, Waste and Recycle, Construction, Wholesale and Retail, Car and Motorcycle Repair, Accommodation, Food and Beverage, Financial and Insurance Services, Real Estate, Health Services, and Social Activities, Transportation and Warehousing, Information and Communication, Company Services, Educational Services, and others.

### **Suggestion**

Based on the discussion above, several suggestions are delivered, first, in this case, the government of the Medan area is expected to contribute more with efforts to improve the GRDP by focusing on the development of the leading sectors without ignoring other sectors and sub-sectors in terms of development planning and implementation. Second, This research is only limited to small parts of North Sumatera Province's area (Fazil, 2016). Hence, other researchers could carry out the research on different areas in North Sumatera Province to establish the comprehensive inputs for the development of North Sumatera.

### **Implication and Limitation**

The analysis of determining factors of regional economic growth is crucial as the primary base to formulate future policies on

territorial economic development. Therefore, through the factor identification, the development could be directed to sectors that potentially lead to regional development acceleration.

This research only reaches a part of the North Sumatera area, which is Medan. It is due to the researchers' limitation to span the entire area of North Sumatera in the objective to analyze the leading factors in every area of North Sumatera.

### **REFERENCES**

- Ahsan, M., & Azis, M. (2018). *Pembangunan Ekonomi & Pemberdayaan Masyarakat: Strategi Pembangunan Manusia dalam Perspektif Ekonomi Lokal* (2nd ed.). CV. Nur Lina Bekerjasama dengan Pustaka Taman Ilmu.
- Alhaq. (2017). Sektor Basis Ekonomi Pertanian Di Provinsi Riau (Periode 1997-2015). *Jurnal Online Mahasiswa Fakultas Ekonomi Universitas Riau*, 4(1), 226-239.
- Andre, G., & Putra, K. (2017). Analisis Sektor Ekonomi Potensial dan Unggulan dalam Penentuan Kebijakan Pembangunan Daerah : Studi Kasus di Kabupaten Kubu Raya Tahun 2011-2015. *Journal of Economics Research and Social Sciences*, 1(22), 130-143.
- Fazil, M. M. I. S. (2016). Keterkaitan Sektor Unggulan di Provinsi Aceh: Pengaruhnya Terhadap Pengembangan Perkotaan. *Jurnal Ilmiah Mahasiswa (JIM) Ekonomi Pembangunan Fakultas Ekonomi Dan Bisnis Unsyiahkonomi Pembangunan Fakultas Ekonomi Dan Bisnis Unsyiah*, 1(1), 117-129.
- Febryani, T. (2017). Determinan Pertumbuhan Ekonomi di 4 Negara ASEAN. *Jurnal Ilmu Ekonomi Terapan*, 2(1), 10-20. <https://doi.org/10.20473/jiet.v2i1.5501>
- Hajeri. (2015). Analisis Penentuan Sektor Unggulan Perekonomian di Kabupaten Kubu Raya. *Jurnal Ekonomi Bisnis Dan*



- Kewirausahaan*, 4(2), 253.  
<https://doi.org/10.26418/jebik.v4i2.12485>
- Hardati, P. (2016). *Ierarki pusat pelayanan di kecamatan ungaran barat dan ungaran timur kabupaten semarang*.
- Jumiyanti. (2018). *Analisis Location Quotient dalam Penentuan Sektor Basis dan Non Basis di Kabupaten Gorontalo*.
- Kasikoen, K. M. (2011). Keterkaitan Antar Wilayah (Studi Kasus: Kabupaten Cilacap). *Jurnal Planesa*, 2(2), 146–153.
- Muhammad, M. (2017). *Perencanaan Pembangunan*. CV. Dua Bersaudara.
- Rachman, I. A. N. (2019). Analisis Sektor Unggulan Dalam Perekonomian Kabupaten Malang. *Jurnal Ilmiah Mahasiswa FEB Universitas Brawijaya*, 7(2).
- Rahmawati, F., Aini, A. N., & Camila, E. M. (2021). Analysis of the Gender Development Index in East Java Regency/City in 2017-2019. *Jurnal REP (Riset Ekonomi Pembangunan)*, 6(1), 61–72. <https://doi.org/10.31002/rep.v6i1.3356>
- Rosita. (2013). *Analisis Sektor Unggulan Menggunakan Data Pdrb*. 2, 219–228.
- Tumangkeng, S. (2012). *Jurnal Berkala Ilmiah Efisiensi Volume 18 No . 01 Tahun 2018 Analisi Potensi Ekonomi Di Sektor Dan Sub Sektor Jurnal Berkala Ilmiah Efisiensi Volume 18 No . 01 Tahun 2018*. 18(01), 127–138.
- Wahyudi. (2014). Perencanaan Pembangunan Ekonomi Wilayah Berbasis Sektor Unggulan, Kasus : Kabupaten Pasaman Pasca Otonomi Daerah. *Jurnal Agribisnis Indonesia*, 2(2), 159. <https://doi.org/10.29244/jai.2014.2.2.159-176>
- Widiarsih. (2020). *Analisis Sektor Ekonomi Unggulan Kota Dumai Tahun 2014-2018 Analysis*. 5(1), 18–32.