Sectoral Potential Analysis for Development Planning in Binjai, Deli Serdang, Karo (Bidangro) Metropolitan Area

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Abstract

The economic potential is the ability of the local economy that is feasible and can be developed so that it becomes a source of livelihood for the community in the local area. Thus, it is necessary to know the superior sectors owned by the region so that their potential can be increased and can effectively support economic development. This study aims to determine the potential sector; progressive, has a comparative advantage, and stands out to be developed in Binjai, Deli Serdang, and Karo Regency. The data collection method is non-participant observation based on secondary data published by Central Bureau of Statistics. The analytical tools used in this research are Location Quotient (LQ), Shift and Share, Growth Ratio Model, and Overlay. The results of this study are: (1) provision of electricity and gas sector is the potential sector in Binjai, Deli Serdang, and Karo Regencies/Cities; (2) Binjai City has seven potential sectors, Karo Regency has seven potential sectors, and Deli Serdang Regency has two potential sectors; (3) in Binjai City and Deli Serdang Regency there are four sectors which have sluggish growth but have a prominent and comparative advantage. Furthermore, there are eight sectors in Karo regency. The role of Medan as the main area, is slowly being taken over by the city of Binjai which does not excel in the agricultural or mining sectors. Furthermore, the position of Deli Serdang Regency which is close to two cities is considered very strategic. The limited land area in urban areas has encouraged increased construction activities in Deli Serdang district. Otherwise, Residents of urban and surrounding areas spend a lot of time on vacation and relaxing in Karo regency. This condition encourages many potential sectors in this district.

Keywords: comparative advantage; potential sector; regional development

1. Introduction

Development has a broad meaning, namely a multi-dimensional process that includes essential changes in the acceleration of economic growth, social structure, inequality, unemployment, and poverty alleviation (Todaro, 2000). Changes in the economic structure or structural transformation are marked by an adjustment in the percentage of the contribution of various sectors in economic development (Sanusi, 2013). Socioeconomic development is a process that can be measured by indicators such as GDP, GRDP, and life expectancy (Nowak & Dahal, 2016).

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Economic development is an increase in production and income. Production is an area product with economic value that can be sold into regional income (Lely et al., 2013). The economy's standard of living to achieve the community's economic welfare. Welfare can be achieved through development (Warsita & Marhaeni, 2015). Economic development aims to achieve better economic growth and absorb a larger workforce. The implementation of development must realize an equitable distribution of income for the entire community.

Indonesia is a country that adopts a unitary state, where government activities are not at the level of the center. In Indonesia, the region is a driver of regional development by preparing regional development plans (Lukiswara, 2016). The regional development planning process is essential. So, each region will minimize errors so that regional development is expected to run more effectively and efficiently. Planning for economic development should be based on a solid analytical framework that accurately depicts the local economy (Dorado, 2014).

Local governments play an essential role in the strategic approach to consolidating Indonesia's decentralization (Fitria et al., 2005). In this regard, the autonomy policy implemented in Indonesia currently provides an excellent opportunity for all provincial and regency/city governments in Indonesia to regulate their regions following statutory regulations (Kesuma et al., 2015). The implementation of regional autonomy is in the hands of local governments.

The first activity carried out in regional development planning is to conduct a review of conditions, problems, and development potential. According to Arsyad (2005), the main problem in development lies in emphasizing development policies based on the peculiarities of the area concerned by using the potential of human resources, institutions, and regional physical resources. Regional economic development refers to the potential sector in addition to having an impact on accelerating economic growth, it will also affect the economic structure.

The potential sector is a sector or economic activity that has better lead, performance, and prospects than other sectors so it is expected to be able to drive other derivative business activities, In order to create regional development independence (Hasbiullah, 2015; Ratnasari, 2014). Potential sectors can also be interpreted as sectors that can drive economic growth in the surrounding area as indicated by the parameters: 1) the contribution of the economic sector to the regional economy is quite high; 2) sectors that have a high multiplier effect; 3) sectors with abundant deposits; and 4) has good added value potential.

Determination of the potential sector is important as the basis for regional development planning in accordance with the era of regional autonomy. Regions have the opportunity and authority to make policies that are in accordance with regional potential in order to accelerate regional economic development to increase people's prosperity. According to Rachbini in Safwadi & Rangkuti (2019), there are several requirements for a particular sector to become a potential sector, namely: 1) Must produce products that have a large enough demand, so that the growth rate develops rapidly as a result of the demand effect, 2) Due to technological changes that are adopted creatively, the new production function shifts with the development of a wider capacity, 3) There must be an increase in re-investment of the results of the production of the priority sector, both the private sector and the government must develop, so that they are able to influence other sectors, and 4) The sector must develop, so that it is able to give effect to other sectors. The Mebidangro Metropolitan Area has been established based on Presidential Regulation no. 62 of 2011 concerning Spatial Planning for Medan, Binjai, Deli Serdang, and Karo (Mebidangro) urban areas. The Presidential Regulation regulates the role and function of the Mebidangro Urban Spatial Plan, scope, objectives, policies, strategies, spatial structure plans, spatial pattern plans, spatial use directions, and spatial use control directions, as well as the role of the community in spatial planning of the Mebidangro Urban Area. In addition, the Presidential Regulation also contains a Map of the Spatial Structure Plan for the Mebidangro Urban Area, the Map of the Spatial Pattern for the Mebidangro Urban Area, and the indications for the Five-Yearly Main Program Directive for Spatial Utilization of the Mebidangro Urban Area.

The National Spatial Planning Policy places the Mebidangro Urban Area as National Activity Centre (PKN) and a National Strategic Area (KSN). The position of the Mebidangro Urban Area as KSN is the Rehabilitation/Revitalization of the Area with an Economic Interest point of view (Appendix X PP 13/2017: Determination of National Strategic Areas). Based on it, spatial planning policies for the Mebidangro Urban Area include:

1. development and strengthening of the function of the Mebidangro Urban Area as a national economical center that is productive and efficient and able to compete internationally, especially in the subregional economic cooperation of the Indonesia-Malaysia-Thailand Growth Triangle;
2. increasing access to services for the urban activity centers of Mebidangro as the shaper of the urban spatial structure and the main driving force for the development of the northern part of Sumatra;
3. improving the quality and service coverage of the transportation, energy, telecommunications, water resources, and urban infrastructure network infrastructure in the Mebidangro Urban Area that is evenly distributed and integrated internationally, nationally, and regionally;
4. increasing the integration between cultivation activities and the balance between urban and rural areas following the carrying capacity and capacity of the environment;
5. increasing the function, quantity, and quality of green open space and other protected areas in the Mebidangro Urban Area;
6. increasing the functions and facilities of state defense and security in the Mebidangro Urban Area; and
7. increasing coordination, integration, and synchronization of the development of the Mebidangro Urban Area through inter-regional cooperation, stakeholder partnerships, and strengthening the role of the community.

The Mebidangro Metropolitan Area consists of two cities and two regencies, namely Medan City, Binjai City, Deli Serdang Regency, and part of the Karo Regency area. The number of sub-regencies members of Metropolitan Mebidangro is as many as 52 sub-regencies from 2 regencies and two cities. Details of the number of sub-regencies per regency and city are Medan City consisting of 21 sub-regencies, Binjai City consisting of 5 sub-regencies, Deli Serdang Regency consisting of 22 sub-regencies, and Karo Regency consisting of 4 sub-regencies (Dolat Rakyat Regency, Merdeka Regency, Berastagi Regency, Barusjahe Regency). The area of Metropolitan area of Mebidangro in 2015 was 314,662 hectares (Basis Data Pusat Pengembangan Kawasan Perkotaan, 2021a).

The research of Simamora et al. explained that based on Klassen's typology, only Medan City was in the category of "developed and fast-growing regions" with a higher level of economic growth and per capita income than North Sumatra. Binjai City, Karo Regency, and Deli Serdang Regency are "relatively underdeveloped areas" with lower growth rates and per capita income compared to North Sumatra (Simamora & Purba, 2019) As the capital city of North Sumatra province, Medan is surrounded by satellite cities or what can be called *hinterland*. Among these regencies/cities are Deli Serdang, Binjai, and Karo, which have been established together with the city of Medan to become a metropolitan area. These regencies/cities have similar performance patterns, but hinterland areas tend to have smaller economies of scale, not as complex as the city of Medan. Economically, *hinterland* areas can run the economy independently, although some goods and services still depend on big cities (Febriyani et al., 2014). Nevertheless, *hinterland* areas can fulfill urban facilities, providing employment opportunities for the community or suburban residents (Yunus, 2005).

As a metropolitan area and a *hinterland* of Medan city, the regency/city governments of Deli Serdang, Binjai, and Karo are required to be creative in preparing regional plans to suit the region's characteristics. In addition, local government policies are indispensable in developing the region's potential. Various sector economies affect economic growth differently. Thus, the comparative advantage of these economic sectors becomes very important in regional development decisions (Herath, 2010). Thus, it is necessary to know the superior sectors owned by the region so that their potential can be increased and can effectively support economic development.

The economic potential is an economic capacity of the region that may be feasible. It can be developed so that it becomes a source of livelihood for people in the local area (Erawati & Yasa, 2012). This research aims to analyze the leading sectors that become economic potential in the Regencies/Cities of Binjai, Deli Serdang, and Karo, which can spur economic growth in some of these areas. By knowing the leading sector that is the basis of an area, a strategy, and policy can be drawn up as a direction for development. The leading sector development policy strategy is essential in improving the regional economy.

What makes this research different from previous research is that this research was conducted using data during a pandemic. This is very interesting to know, because the pandemic has an impact on the economy, especially when a number of policies are implemented such as restrictions on community activities and national economic recovery. It is hoped that this research can contribute to post-pandemic conditions that make the economy recover faster and rise stronger in Binjai, Karo, and Deli Serdang areas.

2.   Research Methods

This research was conducted in 3 regencies/cities in North Sumatra Province, namely the regencies/cities of Binjai, Deli Serdang, and Karo. By considering the determination of the area as a metropolitan area with the city of Medan based on Presidential Regulation No 62 of 2011 concerning Spatial Planning for Medan, Binjai, Deli Serdang, and Karo Urban Areas (Mebidangro).

The data collection method in this study used non-participant observation methods. This method is carried out by observing secondary data, especially Gross Regional Domestic Product (GDRP) published by Badan Pusat Statistik (BPS) of Sumatera Utara Province, Binjai City, Deli Serdang Regency, and Karo Regency in 2019 and 2020. The data analysis techniques used are:

2.1.   Location Quotient (LQ) analysis

Location Quotient is an analytical tool to compare the types of local economic areas to regional or national economic activities (Gemechis et al., 2008). In addition, Location Quotient analysis is also used to determine the relative ability of a sector of a region to the same sector to a broader area (province) of which the area under study is a part (Wiwekananda & Utama, 2016). The LQ analysis formula is shown in Equation 1.

$$LQ = \frac{ps/pl}{Ps/Pl} \tag{1}$$

Description: LQ= Location Quotient; Ps= GRDP sector-i, at the regency/city level; pl = total GRDP, at Regency/City level; Ps = GRDP sector-i, at the provincial level; Pl = total GRDP, at the Provincial level

Criteria:
1) if LQ > 1; superior / base, the sector is the leading sector to meet the needs of the region and is exported to other regions
2) if LQ < 1; not superior/non-basic, the sector is not a leading sector and is not sufficient to meet the needs of the region so that assistance from other regions is needed to be exported to the region

3) if LQ = 1, the sector can only meet the needs of its region but cannot export to other regions or import to other regions

2.2. Shift and Share Method

The Shift and Share (SAS) approach determines which sector is dominating in a given region. This method can be used to compare a region's total sector performance to that of other regions. A shift-share analysis is a technique for comparing the performance of sectors in an area to the performance of national economic sectors. As a result, if the region progresses slower or faster than the rest of the country, there is a shift in the results of regional economic growth. If the processed value of shift-share is positive, a sector is said to be developing, and vice versa. A region with a greater scope is a shift-share analysis that compares disparities in the growth rate of sectors (industries) in a small area (Priyarsono & Sahara, 2007).

Shift-Share analysis aims to determine the performance or productivity of the region's economy by comparing it with the top area level. (Martadona & Leovita, 2018). The equation of the shift-share analysis and its components are shown in Equation 2.

$$Nj= Yjo (Yt / Yo) – Yjo; \quad Pj= \textstyle\sum I [(Yit/Yio) – (Yt / Yo)] Yijo; \quad Dj= \textstyle\sum t [Yijt – (Yit / Yio) Yijo]$$ (2)

Description: Nj= National Share in Regency/City Area; Pj= Proportional Shift Regency/City Area; Dj= Differential Shift Regency/City Area; Yj= Total GRDP of Regency/City Area; Y= total GRDP of the Province; o,t= Initial Period and End Period of Calculation; i= Subsector (subsector) in GRDP

Net Shift (PB) is one way in Shift Share analysis to see the development of an economic sector in a region. A sector has a positive value in a region; this shows that the sector is included in a sector with progressive (advanced) growth. If the PB sector is negative in a region, this indicates that the sector is included in a sector with slow growth. The PB value is obtained by adding Pj and Dj (Bangun & Setyono, 2020).

2.3. Growth Ratio Model (MRP) Analysis

MRP is a tool used to compare the GRDP of a sector in a smaller area with a larger area. The Growth Ratio model has a value less than, greater than, or equal to one. This tool is divided into two, namely Study Area Growth Ratio (RPs) and Reference Area Growth Ratio (Kesuma et al., 2015).

a) Study Area Growth Ratio (RPs)
Comparison between the rate of GRDP sector-i in the study area with the rate of GRDP of sector-i in the reference area (see Equation 3).

$$RPr = \frac{\Delta Yij/Yij(t)}{\Delta Yin/Yin(t)}$$ (3)

Description: Yij= Change in sector-i in the study area; Yij (t) = GRDP of sector-i in the study area at the beginning of the study; Yin = Change in sector-i of GRDP in the reference area; Yin(t) = GRDP of sector-i in the reference area at the beginning of the period; RPs = Study Area Growth Ratio

b) Reference Area Growth Ratio
Comparison between the growth rate pf GRDP sector-i in the reference area with the total GDP in the region of the reference (see Equation 4).

$$RPr = \frac{\Delta Yin/Yin(t)}{\Delta Yn/Yn(t)}$$ (4)

Description: ΔYn = Changes in the GDP in the reference area; Yn(t) = GRDP of the reference area at the beginning of the study-n; RPr = Reference Area Growth Ratio
Criteria:
1) If the RPr and RPs are both positive (+), the sector is a leading sector both at the provincial and regency/city levels because it has a prominent growth compared to other sectors.
2) If the RPr is positive (+) and the RPs are negative (-), the sector is a leading sector at the provincial level but not at the regency/city level.
3) If the RPr is negative (-) and the RPs is positive (+), it means that the sector is the leading sector in the regency/city but not at the provincial level.

2.4. Overlay Analysis

The overlay analysis aims to see a description of potential economic sector activities based on the analysis that has been made (Kadek et al., 2019). According to the need of research and overlay analysis, the results are categorized into eight sectors typology through LQ, SAS, and MRP analysis, namely :
1) Sector 1 = LQ (>1), PB (+), and RPs (+) indicate the activities of a progressive sector and are very prominent both in terms of growth ratio and comparative advantage
2) Sector 2 = LQ (>1), PB (+), and RPs (-) indicates the activity of a progressive sector and has a comparative advantage but has a small growth

3) Sector 3 = LQ (>1), PB (-), and RPs (+) indicates the activity of a sector is slow but very prominent both in terms of growth ratio and comparative advantage
4) Sector 4 = LQ (>1), PB (-), and RPs (-) indicate the activity of a sector is slow and has small growth, but is a comparative advantage
5) Sector 5 = LQ (<1), PB (+), and RPs (+) indicate the activities of a sector are progressive and have prominent growth but no comparative advantage
6) Sector 6 = LQ (<1), PB (+), and RPs (-) indicate the activities of a progressive sector but have small growth and not a comparative advantage
7) Sector 7 = LQ (<1), PB (-), and RPs (+) indicate that the activity of a sector is sluggish and not comparative advantage but has prominent growth
8) Sector 8 = LQ (<1), PB (-), and RPs (-) a sector that is not potential

3. Result and Discussion
3.1. Potential Sector Analysis in Binjai City

Overall, in the 2020 observation period in Binjai, Deli Serdang, and Karo Regencies/Cities, only the electricity and gas procurement sector was included in the first typology sector, both in terms of growth ratio and comparative advantage. In particular, based on Table 1, in the city of Binjai, seven sectors are included in the typology of sector 1, namely electricity and gas procurement; Water supply, waste management, waste, and recycling; Wholesale and retail trade, repair of cars and motorcycles; information and communication; financial and insurance services; real estate; and educational services. According to BPS data, the population growth rate of the city of Binjai shows an increase for one year (2019-2020) which is 1.67%, with a population of 279,302 people, 64,677 households, and a density of 3,095/km^2 (Badan Pusat Statistik Kota Binjai, 2020). The increase in the Binjai population is due to fertility or births and migration. The city of Binjai causes migration is a city in North Sumatra province with the classification of size of the city is being assigned as National Activity Centers (PKN) and is located in a strategic position track *International Shipping Conference* so that it can be the door to the development of the economy (Basis Data Pusat Pengembangan Kawasan Perkotaan, 2021b). This increase in population has contributed to an increase in transactions in various sectors, such as electricity and gas procurement; Water supply, waste management, waste, and recycling; Wholesale and retail trade, repair of cars and motorcycles; information and communication; financial and insurance services; real estate and educational services.

Table 1: Sector Typology Analysis in Binjai City

Field of Business/Sector	Binjai City						Sector Typology
	LQ	PB	RPs	LQ	PB	RPs	
A. Agriculture, forestry, and fisheries	0.12	3.66	0.20	<1	(+)	(+)	5
B. Mining and quarrying	2.28	-0.50	0.55	>1	(-)	(+)	3
C. Processing industry	0.59	-18.53	3.81	<1	(-)	(+)	7
D. Procurement of electricity and gas	1.21	0.88	1.79	>1	(+)	(+)	1
E. Water supply, waste management, waste, and recycling	1.23	0.33	0.63	>1	(+)	(+)	1
F. Construction	0.93	-32.89	1.30	<1	(-)	(+)	7
G. Wholesale and retail trade; car and motorcycle repair	1.69	1.16	0.53	>1	(+)	(+)	1
H. Transportation and warehousing	1.83	-36.00	0.50	>1	(-)	(+)	3
I. Provision of accommodation and food and drink	2.49	-33.40	0.85	>1	(-)	(+)	3
J. Information and communication	1.12	21.59	1.19	>1	(+)	(+)	1
K. Financial and insurance services	1.13	7.02	1.30	>1	(+)	(+)	1
L. Real estate	1.68	15,16	1.00	>1	(+)	(+)	1
M, N . Company services	0.82	-2.22	1.00	<1	(-)	(+)	7
O. Government administration, defense, and compulsory social security	1.86	2.03	-0.91	>1	(+)	(-)	2
P. Education services	2.31	9.80	1.00	>1	(+)	(+)	1
Q. Health services and social activities	1.03	-0.11	0.49	>1	(-)	(+)	3
R, S, T, U . Other services	0.99	-0.10	0.35	<1	(-)	(+)	7

Binjai City must increase the amount of production and quality of goods/services to serve the demands of the community. This is a consequence of a city that has taken part the role of Medan. Binjai will slowly continue

to lead to become a big city which is characterized by a lack of activity in the agricultural sector, but not in the real estate and education sectors. Furthermore, there are four sectors that show very prominent activities both in terms of growth ratios and comparative advantages but are slower than the province in Binjai City, namely the mining and quarrying sector, transportation and warehousing, and the provision of food and drink accommodation and health services. social activity. In Binjai the excavation sector is dominated by excavated materials for building construction. Mining and quarrying have increased due to increased construction activity in Binjai, Medan, and Deli Serdang, requiring piles of gravel, gravel, sand, and soil. the increasing construction activity in Binjai, Medan, and Deli Serdang requires piles of gravel, gravel, sand and soil.

Meanwhile, health services have also been boosted due to the pandemic conditions so that people are increasingly in need of health services. This is related to the increasing public awareness of health and building construction in the city of Medan and real estate in the city of Binjai. For this reason, it is necessary to prepare a number of regulations and strategies to support the mining and quarrying sector, transportation and warehousing, and the provision of food and drink accommodation and health services and social activities in the city of Binjai.

3.2. Potential Sector Analysis in Deli Serdang Regency

There are two progressive and very prominent sectors both in terms of growth ratio and comparative advantage In Deli Serdang Regency, namely; the Electricity and Gas Procurement and Construction sector. Deli Serdang Regency, which often surrounds two major cities in North Sumatra, Binjai and Medan, has caused the construction sector to develop rapidly. This condition is also caused by the existence of a vital object in Deli Serdang, namely Kualanamu International Airport, and the availability of more vacant land in Deli Serdang Regency compared to the cities of Binjai and Medan.

In addition, it should be suspected that this condition is due to the increase in the population growth rate in Deli Serdang Regency which reached 0.74% and the increase in industrial activity due to the limited land in the city of Medan (BPS, 2021). It is estimated that these two sectors will continue to increase as a result of mining population and industrial activities. Therefore, proper mapping of industrial and residential locations is necessary.

In addition, in Deli Serdang there are also 4 sectors that show very prominent activities both in terms of growth ratios and comparative advantages but are slower than the province, namely the manufacturing, transportation and warehousing sectors, the provision of food and drink accommodation, and social services. and social activities. Industrial locations continue to increase in Deli Serdang Regency because industrial locations in the city of Medan have been limited, so that new industries generally take up locations in Deli Serdang (Tarigan, 2015) . Like the city of Binjai, health services have also been pushed up due to the pandemic, so people are increasingly in need of health services.

Table 2: Sector Typology Analysis in Deli Serdang Regency

Field of Business/Sector	Deli Serdang						Sector Typology
	LQ	PB	RPs	LQ	PB	RPs	
A. Agriculture, forestry, and fisheries	0.48	154.49	0.38	<1	(+)	(+)	5
B. Mining and quarrying	0.62	2.89	0.25	<1	(+)	(+)	5
C. Processing industry	1.70	-187.24	2.29	>1	(-)	(+)	3
D. Procurement of electricity and gas	1.15	6.72	1.59	>1	(+)	(+)	1
E. Water supply, waste management, waste, and recycling	0.46	1.48	0.97	<1	(+)	(+)	5
F. Construction	1.21	36.24	0.22	>1	(+)	(+)	1
G. Wholesale and retail trade; car and motorcycle repair	0.96	0.71	0.55	<1	(+)	(+)	5
H. Transportation and warehousing	1.73	-649.33	0.95	>1	(-)	(+)	3
I. Provision of accommodation and food and drink	1.18	-152.60	0.91	>1	(-)	(+)	3
J. Information and communication	0.56	111.52	1.43	<1	(+)	(+)	5
K. Financial and insurance services	0.90	57.68	1.64	<1	(+)	(+)	5
L. Real estate	0.85	67.76	1.00	<1	(+)	(+)	5
M, N . Company services	0.51	-2.07	0.36	<1	(-)	(+)	7
O. Government administration, defense and compulsory social security	0.55	12.78	-0.12	<1	(+)	(-)	6
P. Education services	0.86	32.50	1.00	<1	(+)	(+)	5
Q. Health services and social activities	1.02	-1.73	0.54	>1	(-)	(+)	3
R, S, T, U . Other services	0.53	-5.25	1.00	<1	(-)	(+)	7

Furthermore, the transportation and warehousing sector experienced growth, this was due to the relatively high mobility of the people of Deli Serdang to cross to and from Medan City, whether for work or distribution of people/goods/services. Likewise, the food and drink accommodation sector, as well as the social service sector and social activities. The existence of the Kualanamu International Airport, as well as various large campuses in Deli Serdang, has made this district some of its areas grow rapidly towards becoming urban areas. For this reason, it is necessary to prepare a number of regulations and strategies to support the manufacturing sector, transportation and warehousing, provision of food and drink accommodation, and social services and social activities so that they can thrive. More clearly, see Table 2.

3.3. Potential Sector Analysis in Karo Regency

Based on research data processing, all sectors fall into typologies 1-3 in Karo Regency. This is a potential that must be managed properly, for example continuing to improve the quality of products/services, expanding export markets, encouraging investment, and providing ease of licensing for business actors. Electricity and gas supply, Water supply, waste management, waste and recycling. Information and communication, financial and insurance services, real estate, educational services, and health services and social activities are among the sectors that are progressive and very prominent both in terms of growth ratios and comparative advantages.

A surprising thing happened in the agricultural sector. Agricultural products that are often exported to various regions in North Sumatra and nationally and even abroad can only be included in the typology of sector 2 along with the forestry and fisheries sector. The sector shows that the sector is progressive and has a comparative advantage but the growth is small. The slow growth compared to this province is thought to be caused by the catastrophic eruption of Mount Sinabung which has lasted for ten years, and the pandemic conditions that have occurred for almost two years, resulting in decreased production and distribution.

In Karo Regency, there are eight sectors included in the third typology, namely: mining and quarrying; processing industry; construction; Wholesale and retail trade; repair of cars, and motorcycles; transportation, and warehousing; Provision of accommodation, as well as food and drink; company services; and other services. And there is one sector which is a typology of sector 2, namely governance, defense, and mandatory social security. Transportation and warehousing is a potential sector due to the high traffic to Karo Regency. In addition, the provision of accommodation, as well as food and beverages, is one of the prospects because Karo Regency is a tourist destination and supplier of urban drinking water. More clearly, see Table 3.

Table 3: Sector Typology Analysis in Karo Regency

Field of Business/Sector	Karo						Sector Typology
	LQ	PB	RPs	LQ	PB	RPs	
A. Agriculture, forestry, and fisheries	2.19	77.57	-0.04	>1	(+)	(-)	2
B. Mining and quarrying	0.18	-3.26	4.37	>1	(-)	(+)	3
C. Processing industry	0.18	-8.15	3.31	>1	(-)	(+)	3
D. Procurement of electricity and gas	0.69	0.64	1.19	>1	(+)	(+)	1
E. Water supply, waste management, waste and recycling	0.86	0.28	0.33	>1	(+)	(+)	1
F. Construction	0.54	-29.68	1.18	>1	(-)	(+)	3
G. Wholesale and retail trade; car and motorcycle repair	0.57	-10.41	0.91	>1	(-)	(+)	3
H. Transportation and warehousing	1.04	-16.21	0.27	>1	(-)	(+)	3
I. Provision of accommodation and food and drink	1.11	-1.38	0.16	>1	(-)	(+)	3
J. Information and communication	0.34	8.20	0.76	>1	(+)	(+)	1
K. Financial and insurance services	0.45	2.02	0.02	>1	(+)	(+)	1
L. Real estate	0.77	10,10	0.69	>1	(+)	(+)	1
M, N . Company services	0.22	-0.71	0.76	>1	(-)	(+)	3
O. Government administration, defense and compulsory social security	1.75	3.94	-0.82	>1	(+)	(-)	2
P. Education services	1.27	4.04	0.01	>1	(+)	(+)	1
Q. Health services and social activities	1.33	1.90	0.01	>1	(+)	(+)	1
R, S, T, U . Other services	2.59	-0.03	0.29	>1	(-)	(+)	3

4. Discussion

There is a link or attraction of economic potential between Deli Serdang Regency and the surrounding districts, namely Medan, Karo, Bedagai Serdang, and the city of Binjai (Mahdalena et al., 2015) . The interaction

between these areas is influenced by population traffic and distance. The rapid development of the city of Medan is accompanied by the growth of urban activities that reach the surrounding area. These developments have shaped the metropolitan area.

Overall, in the 2020 observation period in Binjai, Deli Serdang, and Karo Regencies/Cities, only the electricity and gas procurement sector was included in the first typology sector, both in terms of growth ratio and comparative advantage. And in three regions, there is not a sector included in the typology of sector eight or a sector with no potential at all.

Damanik's research (Damanik, 2020) conducted in 2014-2018 stated that the city of Binjai has a potential sector with the criteria of a developed and growing rapidly, base, and competitive sector, namely; the electricity and gas procurement, water supply, waste management, waste, and recycling sectors; information and communication; wholesale and retail of car and motorcycle repair; transportation and warehousing; and real estate. This is slightly different from this study, where the wholesale and retail sectors of car and motorcycle repair; Transportation and Warehousing are in typical sector 3. This means that these sectors experience slow growth towards 2020.

In contrast, the education services, insurance, and financial services sectors experienced rapid growth in Binjai. The development of the electricity and gas procurement, water supply, waste management, waste, and recycling sectors; Information and Communication interspersed with the Wholesale and Retail sector of Car and Motorcycle Repair; Transportation and Warehousing; and Real Estate is able to develop financial institutions, insurance, and even education. The development of these sectors increases the demand for financial management, until the formation of small cooperatives helps investors and workers to continue to grow (Putra et al., 2017).

Back to the research conducted by Damanik (2020) which found that in Deli Serdang district there are 3 potential sectors, namely the Processing Industry, Procurement of Electricity and Gas and Provision of Accommodation and Food and Drink. This is slightly different from this study, where there are only two potential sectors in Deli Serdang, namely construction and electricity and gas supply. The accommodation and drinking water supply sector will no longer be the basic sector in 2020, while the manufacturing sector will experience a slowdown in growth.

Construction services are experiencing rapid growth in the city of Binjai as developments are underway in the city. Binjai as a city adjacent to the city of Medan carries out many design activities of various types of social and economic infrastructure, such as buildings for education and culture, health and social services, sports and recreation, government offices, factories, warehouses, and shops, as well as public works infrastructure and transportation such as roads. In 2020 there were 72 permits issued by the city government of Binjai (Badan Pusat Statistik Kota Binjai, 2020).

The sector for providing accommodation and food and drink, government administration, defense and compulsory social security, education services, health services and social activities and other services is a potential sector in Karo district based on Damanik's research (2020). There is a slight difference with this research, namely the Electricity and gas supply, Information and communication, financial services, real estate sectors are potential sectors. Meanwhile, Government Administration experienced a decline in competitiveness. The emergence of various tourist destinations in Karo district has had a multiplier effect that has also spurred the growth of various economic sectors so this study found more potential sectors than the previous study.

To achieve sustainable economic development, government intervention is required in policy matters. The government needs to improve infrastructure as basic support for the creation of an economic growth process through the development of potential sectors in the Regencies/Cities of Binjai, Deli Serdang, and Karo. And the government needs to conduct more training to empower human resources or the general public in order to optimize economic growth.

Furthermore, the government needs to optimize the regulation of the development planning process. The objectives of the vision and mission can be achieved, and directed without obstacles that affect the economic growth of a region. From the results above, domestic electricity and gas procurement is a sector that has growth potential in the study area. The role of the government is very much needed to pay more attention to the sector, and other sectors included in typologies two and three so as to be able to support development.

The local community is expected to be able to develop sectors that have become district/city icons in the study area, for example by utilizing developing technology and seeking new knowledge in development; wholesale and retail trade; repair of cars and motorcycles; transportation and warehousing; provision of accommodation and food and beverages; education services; company services and other services.

5. Conclusions

From a development planning perspective, the Binjai, Deli Serdang, and Karo city/regency are fast-growing areas. This is indicated by the increase in population, relatively large land area, the presence of mining and excavated goods, the increase in large and small trade, and the increase in the use of vehicles. Not only that, Medan as the main area currently has limited land and space so that industrial development, real estate, settlements, and other construction have moved to the surrounding area; Binjai, Deli Serdang, and Karo city/regency. This movement has resulted in increased mobility of people/goods/services which also means an increase in regional economic transactions.

As a city, Binjai has seven sectors that are progressive and very prominent both in terms of growth ratios and comparative advantages. The seven sectors are sectors that should excel in urban areas. The seven sectors are the provision of electricity and gas; Water supply, waste management, waste and recycling; Wholesale and

retail trade, repair of cars and motorcycles; information and Communication; financial and insurance services; real estate; and educational services. Binjai as a city does not excel in the agricultural or mining sectors. The role of Medan as the main area is slowly being taken over by the city of Binjai. This can be seen from the emergence of various problems in the city of Binjai that arise both in terms of physical and social aspects, as a characteristic of the city.

Deli Regency is surrounded by the city of Medan and in the west is bordered by the city of Binjai. The district, which consists of 22 sub-districts and 394 villages with an area of 2,497.72 km, has 2 sectors that are progressive and very prominent both in terms of growth ratios and comparative advantages, namely: procurement of electricity and gas and construction. The position of Deli Serdang Regency which is close to two cities is considered very strategic. Thus making the traffic of people/goods/services to and from Deli Serdang Regency very high. The limited land area in urban areas has encouraged increased construction activities in Deli Serdang district. Not only that, the four electric customer service units in Galang, Tanjung Morawa, Lubuk Pakam, and Deli Tua also increase every year, as a consequence of the increasing number and activity of the population.

In addition to these two sectors, there are three sectors that also need special attention, namely the Processing industry, Transportation and warehousing, and Provision of accommodation and food and drink sectors. Because these sectors are prominent both in terms of growth ratio and comparative advantage. These three sectors deserve special attention because they are predicted to continue growing. Because at the same time in urban areas, there is limited land for industrial and warehousing activities. In addition, the emergence of various accommodation and restaurant businesses is good news, considering the position of Deli Serdang Regency which is in a strategic area.

Karo Regency has characteristics of highland, cold climate, and in it there is Lake Toba, making Karo known as a tourist area. Residents of urban and surrounding areas spend a lot of time on vacation and relaxing in this district. This condition encourages many potential sectors in Karo district. there are seven sectors that are included in the type 1 sectors that are progressive and very prominent both in terms of growth ratios and comparative advantages. While other sectors are included in typologies 2 and 3. Tourism has a tremendous effect on increasing economic activity. Currently, there is only one route to Karo Regency. To support economic activity in various crowded sectors, it is necessary to support alternative routes to Karo Regency from various regions. This need is becoming increasingly urgent because Karo Regency also supplies water and agricultural products to urban and surrounding areas.

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