Regional Potential for The Development of The Superior Industrial Sector in Musi Banyuasin Regency

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Abstract. Competition between regions is getting tighter. Local governments are obliged to increase the competitiveness of their regions so that the welfare of the community remains stable and even increases. Detecting regional superior sectors in Musi Banyuasin (Muba) Regency is an important topic that must be known immediately, considering that Musi Banyuasin Regency is very serious in realizing a green industrial area. By knowing the superior sectors in Musi Banyuasin (Muba) Regency, the determination of the green industrial area will be more precise and of course the development of Musi Banyuasin (Muba) Regency will be more focused. One of the efforts that local governments can make so that regional development is more focused can be done by detecting the superior sectors of the region. This research aims to find out the superior sectors in Musi Banyuasin (Muba) Regency so that local government will be more focus on developing its region. Analysis of the superior sectors in Musi Banyuasin (Muba) Regency uses the shift share (SS) and location quotient (LQ) approach. So that the conclusion can be obtained, the potential sector and the most superior in Musi Banyuasin (Muba) Regency is the mining & quarrying sector. On the other hand, electricity and gas sector, wholesale and retail trade; repair of motor vehicles and motorcycles sector, become sectors which need to get more attention because they are in underdevelopment sector. As for the manufacturing sector and others are included in the developing sectors. Then, judging by the potential of Musi Banyuasin (Muba) Regency and The Provincial Industrial Development Master Plan (RIPIP) of South Sumatra 2017-2036, the superior commodities of Musi Banyuasin (Muba) Regency are palm oil, corn, rubber, and gambir. The superior industrial sectors in Musi Banyuasin Regency are the gambir processing industry and its derivatives, the feed industry, and the rubber product industry such as liquid smoke for freezing rubber to replace sulfuric acid. The mapping of the region as a place of development of the superior industrial sector is determined based on infrastructure facilities, both existing and to be developed.

Keywords: Musi Banyuasin Regency, superior industrial sector, shift share, location quotient.
1. Introduction

One of the main drivers of national economic development is the industrial sector, because it has been able to make a significant contribution in increasing added value, employment and foreign exchange, as well as being able to make a large contribution to the national power order. Beside that, industrial development is also capable of optimizing land use in accordance with spatial planning, environmental management, and minimizing the potential for social upheaval as a result of development. In this regard, with the direction of development, the importance of industrial development in a region is based on the fact that Indonesia's long-term development is emphasized on economic growth by considering the aspects of equitable development. In order to achieve these goals, there are sectors that are prioritized to be developed, one of which is the industrial sector [1].

The goal of industrial development in the future is an industrial sector that can grow faster so that it can play a bigger role in increasing added value, which leads to the role of the industrial sector in increasing economic growth and employment [2-4]. To achieve increased growth and the role of the industrial sector to overcome various problems, such as [5]:

1. Competitiveness of the national industry is still weak
2. Not yet strong and not yet deep in the national industrial structure
3. Industrial activities are still concentrated in Java Island

The topic of detecting regional superior sectors is very important to do, especially in Musi Banyuasin Regency which is currently establishing regional industrial areas. If the determination of industrial areas is not followed by data on what sectors are prioritized for development, the determination of industrial areas will have an impact on the non-optimal rate of development of industrial areas that are built for the long term. This is closely related to the supply chain or potential raw materials (upstream) in Musi Banyuasin Regency. With data from the superior sectors in a region, the determination of industrial areas will be more precise, and the downstream process will be easier, more directed, and stronger for the long term process.

Researchers are interested in Musi Banyuasin Regency because firstly, Musi Banyuasin Regency is a district that is very abundant in its natural potential, both in the agricultural sector and in the mining sector, the second Musi Banyuasin Regency is very serious in realizing the development of the processing industry. Quoted from the official portal of Musi Banyuasin Regency (mubakab.go.id) that in 2021 there will be a green industrial area located in four locations, namely Bayung Lencir District, Tungkal Jaya District, Sungai Lilin District (there are two locations), and Babat Supat District. Third, Musi Banyuasin Regency will be traversed by the Trans Sumatra toll road, whose toll exit is quite close to the planning location for a green industrial area, approximately 20 km.

In effort to develop industry that will continue to grow and contribute to the regional economy. In order to obtain a clear, integrated, and measurable development direction in the development of the industrial sector, the government of Musi Banyuasin Regency is currently in the process of conducting activities to determine regional industrial development areas, provided that they must pay attention to [6]:

1. Potential regional industrial resources.
2. Provincial Spatial Planning and Regency / City Spatial Layout Plans; and
3. Harmony and balance with socio-economic activities and environmental carrying capacity.

From the explanation above, this study aims to determine the leading sectors in Musi Banyuasin (Muba) Regency. With this study, it is hoped that the local government in this case Musi Banyuasin Regency will be more focused on developing its region.

So that the competitiveness in Musi Banyuasin Regency with other regions in Indonesia will be more competitive. Where, competitiveness is the obligation of local governments to improve it which aims to provide sustainable economic growth and of course to improve the welfare of the people [7]. Looking at the data from the IMD World Competitiveness Ranking 2020, Indonesia's competitiveness has decreased by 8 ranks, namely 32 in 2019 to 40 in 2020 [8, 9]. With the efforts of local governments in increasing regional competitiveness, it will certainly make a big contribution to increasing Indonesia's competitiveness, so that it will give a much better ranking when compared to other countries.

2. Research methodology

The data analysis method used is the shift share (SS) approach and the location quotient (LQ) which is used in analyzing the leading sectors of Musi Banyuasin Regency. Descriptive analysis is used to translate survey data
into a form of information that is easy to understand and be understood. The form of data transformation can be in the form of tables, diagrams, graphs and pictures. Descriptive analysis is used to organize data related to existing conditions and leading sectors.

2.1 Shift share (SS) analysis
Shift share analysis consists of 3 analysis components, namely national growth effect, industry mix share, and differential shifts (10, 11). The calculation uses the following formula:

$$G_{ij} = N_{ij} + P_{ij} + D_{ij} \ldots \ldots \ldots$$

Where
$$G_{ij} = \text{Shift - Share}$$
$$N_{ij} = \text{National Growth Effect}$$
$$P_{ij} = \text{Industriel Mix Share}$$
$$D_{ij} = \text{Differential Shift}$$

2.1.1 National growth effect (Nij)
South Sumatra economic growth = \(\frac{\text{Total GRDP of Sumsel in the highest year}}{\text{Total GRDP of Sumbel in the lowest year}}\) - 1

$$N_{ij} = \text{GRDP of Muba x economic growth}$$
$$\text{GRDP = gross regional domestic product}$$

2.1.2 Industry mix share (Pij)
$$P_{ss} = \frac{\text{GRDP of Sumsel in the highest year}}{\text{GRDP of Sumsel in the lowest year}}$$

$$P_{ij} = \text{GRDP of Muba early x (Pss} - \Sigma P_{ss})$$

Where
$$P_{ss} = \text{South Sumatra sectoral growth}$$
$$\Sigma P_{ss} = \text{Total sectoral growth in South Sumatra}$$

2.1.3 Differential shift (Dij)
$$D_{ij} = \text{GRDP of Muba early x (Psm} - \Sigma P_{sm})$$

Where
$$P_{sm} = \text{Muba sectoral growth}$$
$$\Sigma P_{sm} = \text{Total sectoral growth in Muba}$$

If the yield is (-) then, the sector in Musi Banyuasin grows slower than the sector in South Sumatra, if the yield is (+) then, the Musi Banyuasin sector grows faster than the sector in South Sumatra [12].

2.2 Location quotient (LQ) analysis
2.2.1 Statistic location quotient (SLQ) analysis
$$SLQ = \frac{S_i}{N_i} \times \frac{S}{N} \text{ or } SLQ = \frac{\hat{S_i}}{\hat{S}} \times \frac{S}{N}$$

Information:
$$SLQ = \text{Location Quotient amount}$$
$$S_i = \text{Value added sector at the district level i in the year of observation}$$
$$S = \text{GRDP in regency i in the year of observation}$$
$$N_i = \text{Value added of sector i at the provincial level in the year of observation}$$
$$N = \text{GRDP in the province in the year of observation}$$

2.2.2 Dynamic location quotient (DLQ analysis)
\[ DLQ_{ij} = \frac{IPPS_{ij}}{IPPS_i} \]  
\[ IPPS_{ij} = \frac{(1+g_{ij})}{(1+g_j)} \]  
\[ IPPSi = \frac{(1+Gi)}{(1+G)} \]  

Information:

- \( DLQ_{ij} \) = Potential index for sector \( i \) in the region
- \( g_{ij} \) = The growth rate of sector \( i \) in the region
- \( g_j \) = The average regional growth rate
- \( Gi \) = The growth rate of sector \( i \) in the national
- \( G \) = The average national growth rate
- \( t \) = The difference between the end of the year and the beginning of the year
- \( IPPS_{ij} \) = Sector \( i \) development potential index in the region
- \( IPPSi \) = Sector \( i \) development potential index at the national level

2.2.3 Typology klasen analysis

Typology klasen analysis is an analytical tool that can be used to identify the leading sectors, sub-sectors, businesses or commodities of a region. There are three possible LQ values, namely [13-18]:

a. If \( LQ = 1 \), it means that the sector in the district is comparable to similar sectors at the upper level or province. It can also be interpreted that the sector is only able to meet the needs of its own region.

b. If \( LQ > 1 \), it means that the sector in the district is bigger than the sector at the top or provincial level. It can also be interpreted that this sector is a leading sector and has the potential to be exported.

c. If \( LQ <1 \), it means that the sector in the district is smaller than the sector at the top or provincial level. It can also mean that this sector is not able to meet the needs of its region and even needs imports from other regions.

Typology klasen analysis has the orientation of industrial sector grouping into four clusters in table 1 below:

| A | SLQ>1 | DLQ>1 | Superior Sector | Quadrant 1 |
|---|-------|-------|----------------|-----------|
| B | SLQ>1 | DLQ<1 | Potential Sector | Quadrant 2 |
| C | SLQ<1 | DLQ>1 | Developing Sector | Quadrant 3 |
| D | SLQ<1 | DLQ<1 | Underdeveloped Sector | Quadrant 4 |

3. Result and discussion

3.1 Shift share (SS) Analysis

Data collection was carried out by collecting GRDP data of Musi Banyuasin Regency for the period 2015-2019 based on constant prices for the 2010 base year and GRDP for the Province of South Sumatra for the period 2015-2019 at constant prices for the 2010 base year.

Table 2. GRDP at 2010 constant market prices by industry in Musi Banyuasin Regency (billion rupiahs), 2015-2019

| No | Economic sectors                     | GRDP of Musi Banyuasin Regency |
|----|-------------------------------------|--------------------------------|
|    | 2015      | 2019 | A PDRB |
|    | A         | ...  | E     | E-A   |
| 1  | Agriculture, forestry, and fishing  | 5,304.44 | ...  | 5,723.51 | 419.07 |
| .. | ..        | ..   | ..    | ..    | ..     |

4
1. Agriculture, forestry, and fishing, 2. Mining and quarrying, 3. Manufacturing, 4. Electricity and gas, 5. Water supply; sewerage, waste management, and remediation activities, 6. Construction, 7. Wholesale and retail trade; repair of motor vehicles and motorcycles, 8. Transportation and storage, 9. Accommodation and food service activities, 10. Information and communication, 11. Financial and insurance activities, 12. Real estate activities, 13. Business activities, 14. Public administration and defence; compulsory social security, 15. Education, 16. Human health and social work activities, 17. Other services activities

Source: GRDP of Musi Banyuasin Regency 2015-2019 [19]

Data in table 2 above, there are 17 economic sectors which are the basis for determining which sector is the most superior. There are data for 2015, 2016, 2017, 2018, and 2019. All data is obtained from the statistics of Musi Banyuasin regency in 2020. It can be seen together that, in the agriculture, forestry and fishing sectors, it has increased to 419.07 billion rupiah, where in 2015 it generated 5,304.44 billion rupiah, and in 2019 it generated 5,723.51 billion rupiah.

Meanwhile, GRDP data of South Sumatra Province are as follow:

Table 3. GRDP at 2010 constant market prices by industry in South Sumatra Province (billion rupiahs), 2015-2019

| No | Economic sectors | GRDP of South Sumatra Province | Δ PDRB |
|----|------------------|--------------------------------|--------|
|    |                  | 2015              | 2019   | Δ PDRB |
|    |                  | A      | E      | E-A   |
| 1  | Agriculture, forestry, and fishing | 48,287.68 | 52,215.85 | 3,928.17 |
| ... | Other services activities | 2,041.70 | 2,566.36 | 524.66 |
| 17 | Gross Regional Domestic Product | 254,044.87 | 315,622.62 | 61,577.75 |

Source: GRDP of South Sumatra Province 2015-2019 [20]

From table 3 above, the average income of each sector increases, such as the agriculture, forestry and fishing sectors, which in 2015 only produced 48,287.68 billion rupiah, then in 2019 it generated 52,215.85 billion rupiah, meaning that it increased, amounting to 3,928.17 billion rupiah.

3.1.1 National growth effect (Nij)

National growth effect is an indicator that shows how the province's economic growth affects the regional economy. The results of the calculations can be seen in table 4 below:

Table 4. National growth effect

| No | Economic sectors | GRDP of Muba regency early | South Sumatra economic growth | National share (Nij) |
|----|------------------|----------------------------|-------------------------------|----------------------|
| 1  | Agriculture, forestry, and fishing | 5,304.44 | 0.24 | 1,285.74 |
| ... | Other services activities | 195.95 | 0.24 | 47.50 |
| 17 | Gross Regional Domestic Product | 254,044.87 | 315,622.62 | 61,577.75 |
|    | Total             | 9,520.70 |

Source: GRDP processed

The number 0.24 in table 4 is the economic growth of South Sumatra which is obtained from:

\[
\frac{Total \; GRDP \; of \; Sumsel \; 2019 - \; Total \; GRDP \; of \; Sumsel \; 2015}{Total \; GRDP \; of \; Sumsel \; 2015} = 1 - 0.24
\]
The national share is obtained from:
GRDP of Musi Banyuasin Regency Early x Economic growth.
= 5,304.44 x 0.24 = 1,285.74 (calculation results using excel)
So it can be interpreted that the provincial economic growth still influences the regional economy of Musi Banyuasin Regency.

3.1.2 Industry mix share (Pij)
The industry mix share is an indicator that shows the relative change in the performance of a sector in a certain region against the same sector in a province. The calculation results are shown in table 5.

| No | Economic sectors                  | GRDP of Muba regency early | GRDP sectoral growth in South Sumatra | Total of GRDP sectoral growth in South Sumatra | Industrial mix share (Pij) |
|----|-----------------------------------|----------------------------|--------------------------------------|-----------------------------------------------|---------------------------|
|    |                                   | A                         | B                                    | C                                             | a x (b-c)                  |
| 1  | Agriculture, forestry, and fishing| 5,304.44                  | 1.08                                 | 1.24                                          | -854.23                   |
| ...| ...                               | ...                       | ...                                  | ...                                           | ...                       |
| 17 | Other services activities         | 195.95                    | 1.26                                 | 1.24                                          | 2.86                      |
|    | Total                             |                           |                                      |                                               | 398.62                    |

Source: GRDP processed

The 1.08 figure in table 5 is the sectoral growth of South Sumatra's GRDP which is obtained from:
\[
\frac{GRDP\ of\ Sumsel\ 2019}{GRDP\ of\ Sumsel\ 2015} = \frac{52,215.85}{48,287.68} = 1.08
\]
The figure 1.24 is the total sectoral growth of South Sumatra's GRDP which is obtained from:
\[
\frac{Total\ GRDP\ Sumsel\ 2019}{Total\ GRDP\ Sumbel\ 2015} = \frac{315,622.62}{254,044.87} = 1.24
\]
Meanwhile, the calculation of industrial mix share (Pij) is:
= GRDP of Muba early x (1.08 – 1.24) = 5,304.44 x (1.08 – 1.24) = -854.23 (calculation results using excel)
So it can be interpreted that if the Pij result is (-) then the sectoral growth of South Sumatra's GRDP grows slower than the total sectoral growth of South Sumatra's GRDP. If the Pij result is (+) then the sectoral growth of GRDP of South Sumatra grows faster than the total sectoral growth of GRDP of South Sumatra.

3.1.3 Differential shift (Dij)
Differential shift is an indicator that provides explanations or information in determining how far the regional industrial competitiveness is with the economies at the upper or provincial levels. The results of the calculations can be seen in table 6.

| No | Economic sectors                  | GRDP of Muba regency      | GRDP sectoral growth in Muba Regency | GRDP sectoral growth in South Sumatra | Differential shift (Dij) |
|----|-----------------------------------|---------------------------|--------------------------------------|--------------------------------------|-------------------------|
|    |                                   | A                         | B                                    | C                                    | D                       |
| 1  | Agriculture, forestry, and fishing| 5,304.44                  | 1.08                                 | 1.08                                 | -12.44                  |
| ...| ...                               | ...                       | ...                                  | ...                                  | ...                     |
| 17 | Other services activities         | 195.95                    | 1.24                                 | 1.26                                 | -2.93                   |
|    | Total                             |                           |                                      |                                      | -4,570.60               |
Source: GRDP processed

The 1.24 in table 6 is obtained from
\[
\frac{GRDP \text{ of Muba 2019}}{GRDP \text{ of Muba 2015}} = \frac{243.37}{195.95} = 1.24
\]

The 1.26 in table 6 is obtained from
\[
\frac{GRDP \text{ of Sumsel 2019}}{GRDP \text{ of Sumsel 2015}} = \frac{2,566.36}{2,041.70} = 1.26
\]

While the calculation of Differential Shift (Dij) is:
\[
= GRDP \text{ of Muba } x (1.24 - 1.26) = 195.95 \times (1.24 - 1.26) = -2.93 \quad \text{(calculation results using excel)}
\]

So it can be interpreted that:
If the yield is (-), then the sector in Musi Banyuasin grows slower than the sector in South Sumatra. If the yield is (+) then, the Musi Banyuasin sector grows faster than the sector in South Sumatra.

The value of the Differential Shift in the economic sector of Musi Banyuasin Regency during the 2015-2019 period which is positive is as follows:
(a) Manufacturing sector
(b) Transportation and storage sector
(c) Information and communication sector
(d) Financial and insurance activities sector
(e) Real estate activities sector
(f) Education sector
(g) Human health and social work activities sector

The economic sector that shows the positive value mentioned above means that the economic sector in Musi Banyuasin Regency is growing faster than the same sector at the South Sumatra Province level. Meanwhile, sectors with negative values are sectors that are growing more slowly than the same sector at the upper level or at the provincial level.

The results of the calculation of the national growth effect will illustrate the role of the South Sumatra Province which affects the economic growth of the area below, in this case, the Musi Banyuasin Regency, while the results of the calculations carried out can be shown in table 7 Analysis of Shift and Share of Musi Banyuasin Regency.

| National Growth Share (Nij) | 9,520.70 | 178.00% |
| Industry Mix Share (Pij) | 398.62 | 7.45% |
| Differential Shift (Dij) | -4,570.60 | -85.45% |
| Changes in GRDP (ΣΔGRDP) | 5,348.72 |

Source: GDRP that is processed

The total Nij is 9,520.70, the total Pij is 398.62, and the total Dij is -4,570.60. It can be concluded that the economic growth of Musi Banyuasin Regency is still largely influenced by the economic growth of South Sumatra Province or the economic growth of South Sumatra Province has a major impact on the economy in Musi Banyuasin Regency, this can be seen from the large Nij and the absence of industrial mix shares and local shares that grow on your own.

3.2 Location quotient (LQ) analysis

LQ analysis is used to determine the economic base of a region, especially from the contribution criteria. LQ analysis is basically an analysis to determine the position of an area as a net importer or a net exporter of a particular product or sector by comparing its production and consumption. One aspect of the LQ analysis is as an indicator to determine the leading sectors. The value of the LQ coefficient > 1 means that the sub-sector is a leading sub-sector and is very prospective if it is developed to improve the regional economy. The value of the LQ coefficient <1 indicates that this sub-sector is not a mainstay sub-sector and cannot be exported outside the region so that it is only consumed in the respective sub-district, for this it needs further management so that this sub-sector can develop. The value of the LQ coefficient <1 (close to 1) indicates that this sub-sector is not a mainstay sub-sector and cannot be exported outside the region so that it is only consumed in the region or is not yet developed, for that it needs further management so that this sub-sector can develop [21, 22].
3.2.1 Statistic location quotient (SLQ) analysis

Statistic location quotient (SLQ) is an index used to measure a sector which is a superior sector (basic sector) or not for an area. Based on table 2 GRDP at constant market prices by industry in Musi Banyuasin Regency 2015-2019, the value of sectoral GRDP growth can be seen in figure 1.

![GRDP Growth in Musi Banyuasin Regency](image)

**Source:** GRDP of Musi Banyuasin Regency 2015-2019 processed

**Figure 1.** GRDP growth of Musi Banyuasin Regency per sector

The calculation of sectoral GRDP growth in Musi Banyuasin Regency in figure 1 is as follow:

\[
\frac{\text{GRDP of Muba 2019} - \text{GRDP of Muba 2015}}{\text{GRDP of Muba 2015}} = \frac{5,721,511 - 5,304,44}{5,304,44} = 0.08
\]

Based on table 3 GRDP at 2010 constant market prices by industry in South Sumatra Province 2015-2019, the value of sectoral GRDP growth in South Sumatra Province can be seen in figure 2.

![GRDP Growth of South Sumatra Province](image)

**Source:** GRDP of South Sumatra Province 2015-2019 processed

**Figure 2.** GRDP growth of South Sumatra Province per sector
The calculation of GRDP growth in South Sumatra Province in figure 2 is as follows:

\[
\frac{GRDP\ of\ Sumsel\ 2019 - GRDP\ of\ Sumsel\ 2015}{GRDP\ of\ Sumsel\ 2015} = \frac{52,215.85 - 48,287.68}{48,287.68} = 0.08
\]

From the graph above it can be concluded that the growth of the economic sectors in Musi Banyuasin Regency and South Sumatra Province has experienced identical growth with sectoral growth in Musi Banyuasin Regency.

Following are the results of the SLQ calculation in table 8.

| No | Economic sectors                  | LQ       | Averages of LQ |
|----|-----------------------------------|----------|----------------|
|    |                                   | 2015     | 2016 | 2017 | 2018 | 2019 |
| 1  | Agriculture, forestry, and fishing| 0.71     | 0.74 | 0.77 | 0.80 | 0.78 | 0.759 |
| ...|                                   |          |      |      |      |      |       |
| 17 | Other services activities         | 0.62     | 0.65 | 0.68 | 0.66 | 0.67 | 0.655 |

Source: GRDP of Musi Banyuasin Regency and South Sumatra Province 2015-2019 processed

The calculations detail of table 8 are as follows:

\[
SLQ = \frac{S_{ij}}{S_{j}} = \frac{5,304.44}{59,278.55} = 0.08\text{ for 2015}
\]

As for the average LQ is

\[
\frac{0.71 + 0.74 + 0.77 + 0.80 + 0.78}{5} = 0.759
\]

Where, the results of SLQ calculations will be juxtaposed with the results of DLQ calculations, which will be followed by a typology klassen analysis with the output, namely knowing the superior sectors, potential sectors, developing sectors, and underdeveloped sectors.

3.2.2 Dynamic location quotient (DLQ) analysis

Dynamic location quotient (DLQ) is a modification of the SLQ, by accommodating the growth factor of the output rate of the economic sector from time to time. In this calculation, considering the economic growth factor in the area of observation, in this case is Musi Banyuasin Regency. The difference with the location statistics lies in the consideration of the existing economic growth factors, the location statistics in the calculation do not consider economic growth. The results of the calculations can be seen in table 9.

| No | Economic sectors                  | Musi Banyuasin Regency (IPPSij) | South Sumatra Province (IPPSi) | DLQ  |
|----|-----------------------------------|---------------------------------|-------------------------------|------|
| 1  | Agriculture, forestry, and fishing| 0.95                            | 0.87                          | 1.42 |
| ...|                                   | ...                              | ...                           | ...  |
| 17 | Other services activities         | 1.09                            | 1.01                          | 1.36 |

Source: GRDP of Musi Banyuasin Regency and South Sumatra Province 2015-2019 processed

The calculations detail of table 9 are as follows:

\[
IPPS_{ij} = (1+g_{ij})/(1+g_i) = (1+0.08)/(1+0.14) = 0.95
\]

\[
IPPS_i = (1+G_i)/(1+G) = (1+0.08)/(1+0.24) = 0.87
\]

\[
DLQ_{ij} = (IPPS_{ij}/IPPS_i)^\alpha = \left(\frac{0.95}{0.87}\right)^4 = 1.42
\]

From the SLQ and DLQ calculations, a typology klassen analysis is then performed to determine the regional potential of Musi Banyuasin Regency.
3.2.3 Typology classes analysis

To determine the industrial sector cluster in this observation, the statistical location quotient (SLQ) and dynamic location quotient (DLQ) analysis are used as in table 10 of the typology classes analysis (SLQ and DLQ assessments). From the calculations of SLQ and DLQ, then put into the typology classes quadrant, the results of the entire calculation can be seen in table 10.

Table 10. The results of SLQ and DLQ calculation

| No | Economic sectors                                      | SLQ  | DLQ  | Cluster             |
|----|------------------------------------------------------|------|------|---------------------|
| 1  | Agriculture, forestry, and fishing                   | 0.76 | 1.42 | Developing sector   |
| 2  | Mining and quarrying                                | 2.78 | 0.74 | Potential sector    |
| 3  | Manufacturing                                       | 0.36 | 2.69 | Developing sector   |
| 4  | Electricity and gas                                 | 0.23 | 0.94 | Underdeveloped sector |
| 5  | Water supply; sewerage, waste management, and remediation activities | 0.12 | 1.33 | Developing sector   |
| 6  | Construction                                        | 0.57 | 1.06 | Developing sector   |
| 7  | Wholesale and retail trade; repair of motor vehicles and motorcycles | 0.30 | 0.90 | Underdeveloped sector |
| 8  | Transportation and storage                          | 0.11 | 1.62 | Developing sector   |
| 9  | Accomodation and food service activities             | 0.08 | 1.18 | Developing sector   |
| 10 | Information and communication                        | 0.06 | 2.53 | Developing sector   |
| 11 | Financial and insurance activities                  | 0.68 | 1.82 | Developing sector   |
| 12 | Real estate activities                               | 0.49 | 1.73 | Developing sector   |
| 13 | Business activities                                  | 0.28 | 1.23 | Developing sector   |
| 14 | Public administration and defence; compulsory social security | 0.89 | 1.42 | Developing sector   |
| 15 | Education                                           | 0.64 | 2.36 | Developing sector   |
| 16 | Human health and social work activities              | 0.44 | 2.23 | Developing sector   |
| 17 | Other services activities                            | 0.66 | 1.36 | Developing sector   |

Source: GRDP of Musi Banyuasin Regency and South Sumatra Province 2015-2019 processed

The number 0.76 is obtained from the table of SLQ calculations, while 1.42 is obtained from the table of DLQ calculations that has been calculated previously. So that the results of SLQ and DLQ can be clustered into superior sectors, potential sectors, developing sectors, and underdeveloped sectors.

In accordance with what was formulated earlier, if SLQ is 0.76 and DLQ is 1.42 then it is included in the developing sector cluster. If SLQ is 2.78 and DLQ is 0.74 then it is included in the potential sector cluster and so on. From the results of SLQ and DLQ calculations in table 10, the sector cluster can be described in figure 3 as follows:
DEVELOPING
SECTOR

SUPERIOR
SECTOR

UNDERDEVELOPED
SECTOR

POTENTIAL
SECTOR

Figure 3. The results of typology klasen analysis

From Figure 3 it can be stated that the potential and most superior sector in Musi Banyuasin Regency are the mining and quarrying sector. In fact, the sectors that are underdeveloped and need attention are the sector of electricity and gas procurement, as well as the wholesale and retail trade sector; car and motorcycle repair. The manufacturing sector and others are developing sector.

4. Conclusion

From the analysis and discussion that has been carried out, it can be concluded that the mining and quarrying sector is included in the cluster of potential sector and the most superior. On the other hand, electricity and gas sector, wholesale and retail trade; repair of motor vehicles and motorcycles sector, become sectors which need to get more attention because they are in underdevelop sector. As for the manufacturing sector and others are included in the developing sectors. Thus, judging by the potential of Musi Banyuasin Regency and The Provincial Industrial Development Master Plan (RIPIP) of South Sumatra 2017-2036, the superior commodities of Musi Banyuasin Regency are palm oil, corn, rubber, and gambir [23]. The superior industrial sectors in Musi Banyuasin Regency are the gambir processing industry and its derivatives, the feed industry, and the rubber product industry such as liquid smoke for freezing rubber to replace sulfuric acid. From the explanation above, it can be concluded that the Regency of Musi Banyuasin (Muba) even though it is currently focusing on developing the agricultural-based processing industry sector, however, Musi Banyuasin (Muba) Regency must also focus on maximizing the management of the mining and excavation sector, because this sector is a sector that is superior to other sectors. So, in addition to focusing on the agricultural-based processing industry sector, Musi Banyuasin (Muba) Regency must also develop a mining and quarrying-based sector. The mapping of the region as a place of development of the superior industrial sector is determined based on infrastructure facilities, both existing and to be developed.

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References

[1] Prasnowo M A, Khomearuddin A and Hidayat K 2017 Teknika :Engineering and Sains Journal 1 1
[2] Winardi, Priyarsono D S, Siregar H and Kustanto H 2019 Jurnal Ekonomi dan Pembangunan Indonesia 19 1
[3] Nuraeni Y 2018 Seminar Nasional Edusainstek FMIPA UNIMUS ISBN : 978-602-5614-35-4
[4] Winardi, Priyarsono D S, Siregar H and Kustanto H 2017 Jurnal Manajemen Teknologi 16 3
[5] Basuki M and Budiarto A 2020 Cikal Bakal Industri Unggulan di Kabupaten Musi Banyuasin : Tinjauan Potensi Sektor Industri Unggulan Kabupaten Musi Banyuasin ISBN : 978-602-447-585-7
[6] Kabupaten Musi Banyuasin 2018 Rencana Induk Pembangunan Industri Daerah (RIPIDA) Kabupaten Musi Banyuasin 2018-2037
[7] Hendrawan A 2020 Jurnal Litbang Sukowati 4 1
[8] IMD World Competitiveness Ranking 2019
[9] IMD World Competitiveness Ranking 2020
[10] Basuki M and Mujiraharjo F N 2017 Jurnal Sains, Teknologi dan Industri 15 1
[11] Pratama M P 2020 Jurnal Ilmuiah Akuntansi dan Keuangan 9 1
[12] Yanti T S 2017 Statistika 17 2
[13] Kesuma N L A and Utama I M S 2015 JEKT 8 1
[14] Khasanah N 2018 Jurnal Pertanian Agros 20 2
[15] Tuandali D F N, Engka D S M and Wauran P C Jurnal Berkala Ilmuiah Efisiensi 17 1
[16] Nugroho B A 2017 Jurnal “Gerbang Etam” 11 1
[17] Kusumanto I, Anwardi, Sari P A, Angraini W and Nofirza 2019 Jurnal Rekayasa Sistem Industri 8 2
[18] Hastin M 2021 Jurnal AKRAB JUARA 6 1
[19] BPS 2020 Musi Banyuasin Regency in Figures 2020 (Badan Pusat Statistik: Indonesia) ISBN : 978-623-91497-6-5
[20] BPS 2020 Sumatera Selatan Province in Figures 2020 (Badan Pusat Statistik: Indonesia) ISBN : 978-602-6925-38-1
[21] Nurlina, Andiny P and Sari M 2019 Jurnal Samudra Ekonomi dan Bisnis 10 1
[22] Elysanti S, Hadi, P H T and D H C 2015 Artikel Ilmuiah Mahasiswa
[23] Provinsi Sumatera Selatan 2017 Rencana Induk Pengembangan Industri Provinsi (RIPIP) Provinsi Sumatera Selatan 2017-2036