Analysis of Determination of Base and Non-Base Sectors in Sleman Regency, Yogyakarta Using the Location Quotient Method

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Abstract

GRDP is the amount of added value produced by all business units in a certain area, or the total value of goods and final services produced by all economic units in a region. This value can represent the economic development of a region. The calculation of the Location Quotient (LQ) value is needed to identify the basic and non-base sectors in an area. The process of collecting data in this study was carried out using secondary data sourced from the Central Statistics Agency of Sleman Regency and the Central Statistics Agency of Yogyakarta Province. The analytical technique used in this research is to identify the leading sector in Sleman Regency with Location Quotient analysis. The results of this study are in the calculation of LQ during the analysis period (years 2018-2019) the base sectors of Sleman Regency are the management, construction, transportation and warehousing, real estate, corporate services and educational services industries.

Keywords: base sector, Location Quotient, GRDP, Regency Sleman

1. Introduction

The development of procedures for analyzing the economy of a region is very useful as a facility to collect information about the economy of the region concerned and its growth process. The development of this analysis method can then be used as a guide to determine what actions must be taken to accelerate the pace of development that occurs. On the other hand, it must be acknowledged that analyzing the economy of a region is very difficult (Arsyad, 1999). Some aspects that often become obstacles in carrying out economic analysis include: Information on areas is very limited, especially if the regions are differentiated based on the interpretation of nodal areas (based on their use). Some of the results of research and empirical research on the analysis of regional potential have been tried by many researchers. Analysis tools that can be used include Location Quotient (LQ) analysis, shift-share analysis or Klassen typology. Research conducted by Marhayanie (2003), showing donations per zone, linkage analysis, multiplier analysis is obtained if the potential economic zone in the development planning of Medan City is a processing industry zone.

The results obtained by Supangkat (2002) show that the agricultural and

processing industry zones have the opportunity to be used as priority zones for increased development in the Asahan Regency area, especially the plantation, fishery and large industrial sub-sectors. Tampubolon's research (2001), with the title Development and Regional Inequality of the West Seaside and East Seaside of North Sumatra, formulates if regional characteristics influence income inequality between regions. The ability of regional sectors is affected by changes in the economic structure. The economic structure of the western seaside area leads to the agricultural product processing industry and the eastern seaside area's economic structure leads to the finished goods processing industry.

Gross Regional Domestic Product (GDP) is one of the tools of economic information that can be used to evaluate the economic development performance of a region in a certain period, both above and below current prices or above and below constant prices.

GRDP is basically the amount of added value produced by all business units in a certain area, or is the total value of final goods and services produced by all economic units in a region. The value of GRDP can represent the economic development of a region. As one example in this review, we tried to calculate and analyze the GRDP of Sleman Regency from 2018 to 2019 which is facing an increase every year. The increase in the value of GRDP in Sleman Regency indicates that there is an increase in economic development. Economic development is an important and inseparable part of achieving regional development. Therefore, an analysis of the area that is the mainstay of the superior zone is needed to push for economic growth in Sleman Regency. So that economic development planning can be realized in a structured manner based on sectoral capabilities. If viewed from the value of the regional GRDP zone, the agricultural zone has a large position in increasing the GRDP of Sleman Regency. However, it has not been determined if the agricultural zone is the basis of Sleman Regency, because comparisons with a wider area are needed. In this case, the Province of Yogyakarta is the comparison of the value of the GRDP zone of Sleman Regency. The calculation of the Location Quotient (LQ) value is needed to identify the basic and non-base sectors owned by Sleman Regency.

2. Theoretical Framework

According to Azhar (2014) LQ analysis is a way to measure the ability of a region in a particular sector of activity that does not provide a final conclusion but already gives an overview of the region's ability in a particular sector. This technique is used to identify the internal potential of an area, namely which sectors are the basic sectors and which sectors are not the basic sectors. Basically, this technique provides a relative comparison between the capabilities of one sector between the investigated areas and the capabilities of the same sector in a wider area. The mathematical formula used to compare the capabilities of the sectors of the region is as follows:

$$LQ = \frac{Si/S}{Ni/N}$$

Information:
LQ : Location Quotient Value
Si : GRDP Sector i in Sleman Regency
S : Total GRDP in Sleman Regency

Ni : GRDP Sector i in Yogyakarta D.I Province
N : total GRDP in D.I Yogyakarta Province

If the calculation results above produce:
1) LQ > 1 means that the commodity is the basis or source of growth. Commodities have a comparative advantage, the results can not only meet the needs of the region concerned but can also be exported outside the region.
2) LQ = 1 commodity is classified as non-basic, does not have a comparative advantage. Its production is only sufficient to meet the needs of its own region and cannot be exported.
3) LQ < 1 this commodity also includes non-base. Commodity production in a region cannot meet its own needs, so it needs to be supplied or imported from outside.

   In short, the normative standard in the base sector is when LQ > 1. If in the analysis there are many LQ > 1, then the highest LQ index can be determined as the base/leading sector in the region. The higher the LQ value index in an area, the higher the potential for the superiority of the commodity.

3. Research Methodology
The process of collecting data in this study was carried out using secondary data sourced from the Central Statistics Agency for Sleman Regency and the Central Statistics Agency for Yogyakarta Province on the basis of 2010 constant prices according to business field (Million Rupiah) which was accessed online. The analytical technique used in this research is to identify the leading sectors in Sleman Regency with Location Quotient analysis. This method in analyzing superior commodities is done simply using software (Microsoft Excel) or can also be calculated manually.

4. Results and Discussion

a. Study Object
The object of study in this research is the location that is the focus of the research, namely Sleman Regency, Yogyakarta Province, Indonesia.
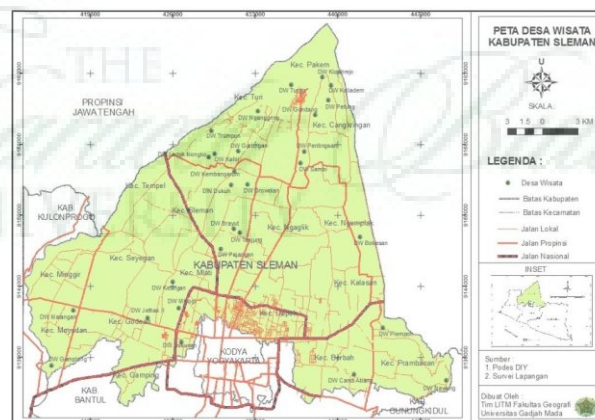

Figure 1 Administrative Map of Sleman Regency

a. Data Types and Sources

The types and sources of data in this study are described as follows:

a. Data Type

The data used in this study is secondary data, in the form of Gross Regional Domestic Product (GRDP) at Constant Prices (ADHK) according to the Sleman Regency business field and ADHK GRDP according to the Yogyakarta Province business field in 2019-2020.

b. Data source

The sources of data used in this study are secondary data originating from the Central Statistics Agency (BPS) of Sleman Regency and the Central Statistics Agency (BPS) of Yogyakarta Province which are accessed online.

5. Discussion

This study uses data in the form of GRDP on the basis of constant prices according to business fields for the period 2019-2020. As a comparison to determine the LQ index, ADHK GRDP is used according to the Yogyakarta Province business field in the same time span. The following are the results of the analysis carried out using Microsoft Excel software in the 2019-2020 time range in million rupiah.

a) GRDP data based on 2010 constant prices by business field (million rupiah) in Sleman Regency and Yogyakarta Province using secondary data accessed at the Central Statistics Agency (BPS).

NO	Business field	Kabupaten Sleman		Yogyakarta D.I Province	
		2018	2019	2018	2019
1	Agriculture, Forestry, and Fisheries	2.071.604,20	2.105.980,90	8.101.233,30	8.183.689,40
2	Mining and digging	126.231,20	133.527,60	541.183,60	557.653,50
3	Processing industry	4.203.118,30	4.455.255,00	12.486.855,40	13.201.737,10
4	Electricity and Gas Supply	42.353,10	44.822,40	156.706,50	165.217,40
5	Water Supply, Waste Management, Waste and Recycling Repeat	14.887,20	16.075,00	94.923,30	103.372,60
6	Construction	3.936.807,40	4.430.767,70	9.984.760,00	11.420.640,10
7	Wholesale and Retail Trade; Car Repair and Motorcycle	2.517.080,00	2.649.325,50	8.219.289,30	8.643.437,90
8	Transportation and Warehousing	2.171.673,70	2.136.569,20	5.304.843,60	5.493.402,20
9	Provision of Accommodation and Drinks	3.275.256,30	3.573.630,60	9.383.603,30	10.217.676,90

10	Information and Communication	3.560.299,50	3.841.352,60	10.884.532,60	11.694.991,80
11	Financial Services and Insurance	977.150,90	1.061.895,90	3.506.587,60	3.805.386,00
12	Real Estate	2.713.511,70	2.873.693,70	7.079.839,30	7.499.627,40
13	Company Services	636.152,60	680.371,40	1.146.811,60	1.224.235,00
14	Government Administration, Defense and Social Security	1.953.565,10	2.018.630,70	7.239.151,90	7.477.921,50
15	Education Services	3.351.494,90	3.579.032,00	8.583.073,60	9.146.783,80
16	Health Services and Social activities	810.809,00	866.476,40	2.593.233,40	2.764.571,40
17	Other services	777.210,00	822.401,90	2.717.386,10	2.887.199,80
Gross Regional Domestic Product		**33.139.205,10**	**35.289.808,50**	**98.024.014,40**	**104.487.543,80**

b) Calculation of the LQ of each economic sector in Sleman Regency for a period of 2 years. Calculation of the location quotient index (LQ) for each economic sector in the Sleman Regency area of the economic sector in Yogyakarta Province for a period of 2 years. Based on the results of the above calculations, it can be concluded that the location quotient (LQ) is as in the table below:

NO	Description	Location Quotient LQ	
		2018	**2019**
1	Agriculture, Forestry and Fisheries	0,76	0,76
2	Mining and excavation	0,69	0,71
3	Processing industry	1,00	1,00
4	Electricity and Gas Supply	0,80	0,80
5	Water Supply, Waste Management, Waste and Recycling Repeat	0,46	0,46
6	Construction	1,17	1,15
7	Wholesale and Retail Trade; Car and Bike Repair Motorcycle	0,91	0,91
8	Transportasi danPergudangan	1,21	1,15
9	Provision of Accommodation and Drinks	1,03	1,04
10	Information and Communication	0,97	0,97
11	Financial Services and Insurance	0,82	0,83
12	Real Estat	1,13	1,13
13	Company Services	1,64	1,65
14	Government Administration, Defense and Social Security Must	0,80	0,80
15	Education Services	1,16	1,16
16	Health Services and Social Activities	0,92	0,93
17	Other Services	0,85	0,84

Si/S LQ = Ni/N

$$LQ = \frac{2.071.604,20/33.139.205,10}{8.101.233,30/98.024.014,40} = 0,76$$

Information:
LQ > 1 (base sector / leading sector)

Based on the above calculation results, it can be seen that several economic sectors in Sleman Regency are the base sector or leading sector because they have an LQ value > 1. The leading sector (base sector) in Sleman Regency is the construction sector; transportation and warehousing sector; the accommodation and food and drink supply sector in the real estate sector; the corporate service sector and the education service sector. Meanwhile, commodities that are classified as non-basic, do not have a comparative advantage whose production is only sufficient to meet the needs of their own region and cannot be exported, namely the Processing Industry sector because the value of LQ = 1.

Meanwhile, commodities that are classified as non-basic where the production of commodities in an area cannot meet their own needs, so they need supplies or imports from outside, namely the agricultural, forestry and fishery sectors; mining and quarrying sector; electricity and gas procurement sector; water supply, waste management, waste and recycling sectors; wholesale and retail trade sectors such as car and motorcycle repair; the sector of providing accommodation and food and drink; information and communication sector; financial services and insurance sector; the government administration sector, defense and mandatory social security; health services sector and social activities; and other service sectors.

5. Conclusion

The conclusion in the research on the base sector and non-base sector in Sleman Regency based on the results of the LQ calculation during the analysis period (2018-2019) shows that the leading sector is the construction sector; transportation and warehousing sector; the sector of providing accommodation and food and drink; real estate sector; the corporate service sector and the education service sector. Meanwhile, the highest base sector based on the LQ value is found in the corporate services sector with an average LQ value of 1,645 and the lowest base sector is the accommodation and food and beverage supply sector with an average LQ value of 1,035.

References

BPS Kabupaten Sleman. (2021). *Produk Domestik Regional Bruto Kabupaten Sleman Menurut Lapangan Usaha 2019-2020*. Kabupaten Sleman: Badan Pusat Statistik Kabupaten Sleman.

BPS Provinsi Yogyakarya (2021). *Produk Domestik Regional Bruto Privinsi Yogyakarta Menurut Lapangan Usaha 2019-2020*. Yogyakarta; Badan Pusat Statistik Provinsi Yogyakarta

Hendayana, R. (2003). Aplikasi Metode Location Quotient (LQ) dalam Penentuan Komoditas Unggulan Nasional. *Jurnal Informatika Pertanian*, *12*(Desember 2003), 1–21. http://www.litbang.pertanian.go.id/warta-ip/pdf-file/rahmadi-12.pdf

Nugraha, A. A. (2019). Analisis Sektor Unggulan untuk Mendorong Pembangunan di Provinsi Daerah Istimewa Yogyakarta. *Proyek Akhir(D3).* Semarang; Prodi D3 perencanaan Wilayah dan Kota, Departemen Sipil dan Perencanaan, SV Undip

R. Jumiyanti, K. (2018). Analisis Location Quotient dalam Penentuan Sektor Basis dan Non Basis di Kabupaten Gorontalo. *Gorontalo Development Review*, *1*(1), 29. https://doi.org/10.32662/golder.v1i1.112