


## Analysis Of Leading Economic Sectors In Sidoarjo Regency

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Article Info	ABSTRACT
<b>Keywords:</b> Leading Sector, Location Quotient Analysis, Shift Share Analysis	This study aims to determine the leading economic sectors in Sidoarjo Regency. This study uses secondary data in the form of time series data from the Gross Regional Domestic Product (GRDP) of Sidoarjo Regency and East Java Province in 2014-2023. The analytical tools used in this study are: 1). Location Quotient (LQ) analysis is used to determine the basic and non-basic sectors in the economy of Sidoarjo Regency. 2). Shift Share analysis is used to determine changes and shifts in the economic structure of Sidoarjo Regency. The results of the study show that from the calculation of the LQ analysis, the basic or leading sectors in Sidoarjo Regency are three sectors, namely Electricity and Gas Procurement, Transportation and Warehousing, and the Manufacturing Industry sector. The results of the analysis show that the economic sector that has rapid growth and has a competitive advantage with rapid growth so that it has the potential to increase competitiveness is the manufacturing industry sector. Therefore, the Manufacturing Industry sector is a top priority in supporting the economic development of Sidoarjo Regency in the future.
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### INTRODUCTION

According to (Mahyudi, 2004) Economic growth is closely related to economic development. When economic development develops rapidly, economic growth will also increase, and vice versa. Economic development refers to economic growth accompanied by significant changes, especially a decrease in population growth rates and transformation of economic structures. These changes involve the role of economic sectors in the formation of national income and their contribution to creating jobs.

Regional economic development aims to improve people's welfare and their quality of life through planned and balanced development, both between sectors and between regions. This effort is carried out through effective planning in order to achieve regional independence and equal progress in various regions. The potential of a region can be identified by determining the leading sector based on analysis and studies of economic activities that reflect their distribution in various regions.

Leading sectors as an important component in regional economic development, do not solely depend on geographical location. This sector involves activities spread across various economic paths, so that it can become the main driver of overall economic growth. Sidoarjo Regency is located in the southern part of East Java Province and has a strategic location because it directly borders Surabaya City, the center of economy and

government in East Java, giving Sidoarjo Regency a competitive advantage. This drives rapid growth through intense economic interaction with industrial areas in Surabaya and its surroundings, coupled with adequate infrastructure support, such as toll roads, ports, and Juanda International Airport.

Gross Regional Domestic Product (GRDP) is the main indicator for analyzing the economic dynamics of a region. Through this data, the contribution of each economic sector to the total GRDP can be known, as well as identifying key sectors that have the largest role in driving economic growth during a certain period.

**Table 1.** GRDP at Constant Prices of Sidoarjo Regency in 2022-2023

Business Field	[2010 Series] GRDP at Constant Prices by Field of Business (Million Rupiah)	
	2022	2023
Agriculture, Forestry and Fisheries	2,686,059.30	2,730,833.35
Mining and Quarrying	53,150.52	42,919.34
Processing industry	80,337,558.29	83,869,013.22
Electricity and Gas Procurement	1,162,841.20	1,553,231.15
Water Supply, Waste Management, Waste	118,128.79	122,152.19
Construction	11,903,427.88	12,543,434.93
Wholesale and Retail Trade, Repair	24,427,437.42	25,886,017.72
Transportation and Warehousing	9,697,067.21	11,843,892.61
Provision of Accommodation and Food and Beverages	5,529,768.00	5,942,852.18
Information and Communication	7,385,981.31	7,844,824.94
Financial Services and Insurance	1,654,719.32	1,728,973.49
Real Estate	1,486,243.73	1,546,345.12
Corporate Services	213,973.09	235,169.27
Government Administration, Defense and Compulsory Social Security	2,222,564.21	2,215,418.46
Educational Services	1,699,486.04	1,783,647.93
Health Services and Social Activities	526,637.86	536,059.84
Other Services	508,836.21	525,991.64
GRDP	151,613,880.39	160,950,777.38

Data source: BPS Sidoarjo Regency

Based on constant 2010 prices, the GRDP of Sidoarjo Regency shows an increase, from 151.57 trillion rupiah in 2022 to 160.95 trillion rupiah in 2023. The manufacturing industry sector is the largest contributor to economic growth, with a value of 80,337,558.29 billion rupiah in 2022 and increasing to 83,869,013.22 billion rupiah in 2023. Therefore, infrastructure development is very necessary to create a healthy and conducive business climate and improve the quality of human resources to support the success of industrialization in Sidoarjo. The Wholesale and Retail Trade, Repair sector is in second place in terms of contribution to GRDP, with a figure of 24,427,437.42 billion rupiah in 2022 which increased to 25,886,017.72 billion rupiah in 2023.

Along with the development of various economic sectors in Sidoarjo Regency, each

sector has a different contribution in driving economic growth. To face the challenges of sustainable regional development, the local government focuses on optimizing leading economic sectors that have great potential to improve community welfare. This basic economic sector plays an important role in increasing regional income, which will then spur the growth of non-basic sectors and increase demand for these sectors. This positive impact will make a significant contribution to the Gross Regional Domestic Product (GRDP), as the main indicator of regional economic growth.

## METHOD

This research was conducted in Sidoarjo Regency, East Java Province. Secondary data collection was sourced from documents owned by the Central Statistics Agency of Sidoarjo Regency and the Central Statistics Agency of East Java Province. The type of data used in this study is quantitative data, namely the GRDP data of Sidoarjo Regency for the period 2014-2023 and the GRDP of East Java Province for the period 2014-2023. The data analysis method used is quantitative and statistical using Location Quotient (LQ) and Shift Share analysis.

### Location Quotient (LQ) Analysis

Location Quotient (LQ) is an analysis method used to measure the concentration or relative advantage of an economic sector in a region compared to the national or regional average. The way to measure the LQ of a sector in a regional economy is through the added value or GRDP approach. The calculation of the Location Quotient (LQ) uses the formula:

$$LQ = \frac{V_i/V_t}{Y_i/Y_t}$$

Information :

- LQ = Location Question Value
- $V_i$  = Value of GRDP of sector  $i$  at lower regional level
- $V_t$  = Total GRDP at lower regional level
- $Y_i$  = GRDP value of sector  $i$  at a higher regional level
- $Y_t$  = Total GRDP at the higher regional level

The results of the calculations obtained can be interpreted into several categories, namely:

- a. LQ value  $> 1$   
This means that the growth rate of sector  $i$  in Sidoarjo Regency is greater than the growth rate of the same sector in the economy of East Java Province. Thus, sector  $i$  is a leading sector as well as an economic base to be further developed by Sidoarjo Regency.
- b. LQ value  $< 1$   
This means that the growth rate of sector  $i$  in Sidoarjo Regency is smaller than the growth rate of the same sector in the economy of East Java Province. Thus, sector  $i$  is not a leading sector of Sidoarjo Regency and is not an economic base and is not prospective for further development by Sidoarjo Regency.
- c. LQ value = 1

This means that the growth rate of the sector in Sidoarjo Regency is the same as the growth rate of the same sector in the economy of East Java Province.

### Shift Share Analysis

According to (R. Jumiyanti, 2018) Shift share analysis is an analysis to compare the rate of economic growth of a region with a wider scope of the region. The components used in the analysis of the relative potential of the regional economy are only the influence of sectors that develop in the wider region and locational factors are the competitive advantages of a region. According to (Sjafrizal, 2014) Shift Share Analysis can be known by adding up the Regional Share, Proportional Shift, and Differential Shift values in the area. Calculation of Shift Share and its components using the formula:

$$D_{ij} = N_{ij} + M_{ij} + C_{ij}$$

Information :

i : Economic sector being researched

j : Area studied

D<sub>ij</sub>: Changes in GRDP of sector and sub-sector i in the research area

N<sub>ij</sub>: Growth of GRDP sector i in the studied area

M<sub>ij</sub> : Industrial mix of sector i in the studied area

C<sub>ij</sub>: Competitive advantage of sector i in the studied area

Each component in the Shift Share formula has its own formula, namely:

$$\text{This} = Y_{ij} \times rn$$

$$M_{ij} = Y_{ij} \times (rin - rn)$$

$$C_{ij} = Y_{ij} \times (rij - rin)$$

rij, rin and rn represent the growth rates which are respectively defined as follows:

Measures the overall growth rate in a reference area.

$$rn = \frac{Y^*n - Y_n}{Y_n}$$

Measures the growth rate of sector i in the reference area.

$$rin = \frac{Y^*in - Y_{in}}{Y_{in}}$$

Measuring the growth rate of sector i in the analysis area.

$$rij = \frac{Y^*ij - Y_{ij}}{Y_{ij}}$$

Information :

Y<sub>ij</sub> : GRDP of sector/subsector i in the analysis area (district) in the initial year of the research.

rij: Growth rate of sector i in the analysis area

rin: Growth rate of sector i in the reference area

rn : Overall growth rate in the reference area

Y<sup>\*</sup>n : GRDP of reference area at the end of the research year.

Y<sub>n</sub> : GRDP of the reference area at the beginning of the research year.

Y<sup>\*</sup>in : GRDP of sector i in the reference area at the end of the research year.

Y<sub>in</sub> : GRDP of sector i in the reference area at the beginning of the research year.

Y<sup>\*</sup>ij : GRDP of sector i at the analysis area level at the end of the year

Study

$Y_{ij}$  : GRDP of sector  $i$  of the analysis area at the beginning of the research year.

The results of the calculations obtained can be interpreted into several categories, namely:

$M_{ij} > 0$  then the growth of sector  $i$  is faster compared to other sectors in the area studied.

$C_{ij} > 0$  then the competitiveness of sector  $i$  in the studied area is greater than the competitiveness of sector  $i$  in the reference area.

$D_{ij} > 0$  then there is an increase in economic performance in sector  $i$  in the area studied.

## DISCUSSION

### Location Quotient (LQ) Analysis

This study uses the Location Quotient (LQ) analysis tool to determine the basic and non-basic sectors in Sidoarjo Regency.

**Table 2** Results of Location Quotient Analysis of Sidoarjo Regency 2014-2023

NO	Business Field	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average
1	Agriculture, Forestry and Fisheries	0.18	0.19	0.19	0.19	0.19	0.18	0.19	0.18	0.18	0.18	0.18
2	Mining and Quarrying	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02
3	Processing industry	1.68	1.69	1.69	1.68	1.68	1.69	1.77	1.78	1.74	1.72	1.71
4	Electricity and Gas Procurement	3.09	3.05	2.98	2.96	2.84	2.74	2.72	2.71	2.66	2.84	2.86
5	Water supply, waste management, sewage and recycling	0.81	0.80	0.79	0.79	0.08	0.78	0.79	0.79	0.76	0.76	0.71
6	Construction	1.00	1.00	1.01	1.00	1.03	0.99	0.98	0.88	0.85	0.84	0.96
7	Wholesale and retail trade; repair of cars and motorbikes	0.88	0.88	0.88	0.88	0.90	0.87	0.85	0.86	0.85	0.84	0.87
8	Transportation and Warehousing	2.83	2.80	2.84	2.81	2.84	2.36	1.77	1.77	2.11	2.25	2.43
9	Provision of accommodation and food and drink	0.65	0.65	0.65	0.65	0.67	0.64	0.66	0.68	0.68	0.67	0.66
10	Information and communication	0.76	0.77	0.77	0.77	0.79	0.76	0.75	0.73	0.72	0.71	0.75

11	Financial and insurance services	0.46	0.46	0.46	0.46	0.48	0.46	0.46	0.45	0.45	0.44	0.46
12	Real estate	0.55	0.56	0.57	0.56	0.58	0.56	0.56	0.55	0.54	0.55	0.56
13	Company services	0.20	0.20	0.20	0.20	0.21	0.20	0.20	0.20	0.19	0.19	0.20
14	Government administration, defense and compulsory social security	0.80	0.78	0.78	0.78	0.80	0.77	0.77	0.78	0.74	0.72	0.77
15	Educational services	0.44	0.45	0.45	0.44	0.45	0.44	0.44	0.43	0.42	0.42	0.44
16	health services and social activities	0.50	0.50	0.50	0.50	0.50	0.48	0.48	0.48	0.46	0.45	0.49
17	Other services	0.27	0.27	0.27	0.27	0.27	0.26	0.26	0.25	0.24	0.23	0.26

Source: BPS Sidoarjo Regency and BPS East Java Province (processed)

From the results of the analysis using the Location Quotient (LQ) method, it is known that there are three basic sectors in Sidoarjo Regency that have an LQ value > 1. Therefore, the economic sector becomes the basic economic sector in Sidoarjo Regency for 10 years from 2014-2023 is the sector that has the highest average LQ value for 10 years is the Electricity and Gas Procurement sector, which is 2.86, then the Transportation and Warehousing sector has an average LQ value of 2.43 and continued with the Manufacturing Industry sector has an average LQ value of 1.71. which means that the sector is able to meet the needs in Sidoarjo Regency and can export to other regions.

### Shift Share Analysis

The calculation results of the Shift Share analysis are presented in the table below.

**Table 3.** Results of Shift Share Analysis for Sidoarjo Regency 2014-2023

Business Field	Components of Change			Dij	Net Shift
	Nij	Mij	Cij		
Agriculture, Forestry and Fisheries	1,104,976.53	-768,831.57	-2,111.90	334,033.09	-770,943.44
Mining and Quarrying	69,969.24	-39,65,901	-139,161.00	-108,850.66	-178,819.90
Processing industry	24,321,889.4	2,053,230.8	4,737,377.8	31,112,498.1	6,790,608.6
Electricity and Gas Procurement	545,542.17	-97,608.92	-78,035.49	369,897.76	-175,644.41
Water supply, waste management,	38,665.99	3,419.33	-3,803.36	38,281.95	-384.04

Business Field	Components of Change			Dij	Net Shift
	Nij	Mij	Cij		
sewage and recycling					
Construction	4,511,597.15	14,261.13	- 1,768,511.0 4	2,757,347.24	- 1,754,249.9 1
Wholesale and retail trade; repair of cars and motorbikes	7.902.992.21	1,218,040.4 3	-378,273.33	8,743,668.31	840,676.10
Transportation and Warehousing	4,007,040.41	1,678,814.3 5	- 2,533,617.7 8	3,152,236.98	-854,803.43
Provision of accommodation and food and drink	1,576,073.99	542,597.51	405,524.78	2,524,196.28	948,122.29
Information and communication	2,046,297.98	1,664,080.6 6	-304,170.62	3,406,208.02	1,359,910.0 4
Financial and insurance services	580,645.92	-101,082.55	-10,066.67	469,496.70	-111,149.22
Real estate	470,817.18	15,274.40	39,005.85	525,097.43	54,280.25
Company services	77,953.27	-2,463.30	-9,408.83	66,081.14	-11,872.13
Government administration, defense and compulsory social security	890,998.02	-465,540.44	-142,699.43	282,758.15	-608,239.87
Educational services	569,590.28	15,541.89	-36,980.28	548,151.89	-21,438.39
health services and social activities	160,670.26	69,876.78	-42,996.41	187,550.62	26,880.36
Other services	192,777.05	-11,278.87	-73,658.50	107,839.69	-84,937.36
Total	49,068,497.1 1	5,789,581.8 2	(341,586.19)	54,516,492.7 4	5,447,995.6 3

Source: Analysis Results. 2024

Based on the results of the shift share analysis calculation in table 2 above, it can be seen that there has been a change or total increase in performance of 49,068,497.11 million rupiah in the economy of Sidoarjo Regency during 2014-2023. The total value of the regional

share component shows that there is a positive influence on the economic growth of East Java Province of 49,068,497.11 million rupiah on the regional economy of Sidoarjo Regency.

The proportional shift component shows that there are negative and positive values in each economic sector with a total Mij value of 5,789,581.82 million rupiah, so if the Mij value is positive, it means that Sidoarjo Regency is specialized in sectors that are growing rapidly at the East Java Province level.

Meanwhile, the differential shift components of the economic sector of Sidoarjo Regency during the period 2014-2024 are positive and negative with a total Clj value of -341,586.19, so if the Cij value is negative, it means that the contribution of special potential to the economic growth of the Sidoarjo Regency region is very minimal and has a negative impact on regional economic growth because its growth is slower.

The growth of an economic sector in a region can be analyzed through the calculation of the net shift of the sector. Overall, economic growth in Sidoarjo Regency over the past ten years, namely from 2014 to 2023, has shown rapid growth. This is reflected in the results of the calculation of the total net shift of Sidoarjo Regency which has a positive value, which is 5,447,995.63 million rupiah.

### **Leading sectors**

Leading sectors are sectors that have the ability to drive the growth or development of other sectors in a region. This sector contributes both by providing inputs for other sectors and by producing outputs that are used as inputs in the production process of these sectors. From the calculation of LQ analysis, the basic or leading sectors in Sidoarjo Regency are three sectors, namely Electricity and Gas Procurement, Transportation and Warehousing, and the Manufacturing Industry sector. However, after calculating the shift share by calculating several components of change, it was obtained that the electricity and gas procurement sector had a change component value in the shift share method of 369,897.76 which indicated rapid growth and high competitiveness. However, the net shift of this sector was -175,644.41 so that this sector was categorized as a sector that did not have a competitive advantage with slow growth. The transportation and warehousing sector had a change component value in the shift share method of 3,152,236.98 which indicated rapid and high competitiveness. However, the net shift of this sector was -854,803.43 so that this sector was categorized as a sector that did not have a competitive advantage with slow growth. And the manufacturing industry sector has a component change value in the shift share method of 31,112,498.15 which indicates rapid growth and high competitiveness. The net shift value of this sector is 6,790,608.67 so that this sector is categorized as a sector that has a competitive advantage with progressive/rapid growth.

The results of the analysis show that the economic sector that has rapid growth and has a competitive advantage with rapid growth so that it has the potential to increase competitiveness is the manufacturing industry sector. This sector is also included in the base sector with an LQ value of 1.71 although the LQ value of the sector is smaller than the electricity and gas procurement sector and the transportation and warehousing sector. So this sector is categorized as a progressive sector with the potential for sustainable growth. Therefore, the Manufacturing Industry sector is a top priority in supporting the economic



development of Sidoarjo Regency in the future.

## CONCLUSION

Based on the results of the analysis and discussion, the conclusions obtained from this study are as follows: The basic economic sector in Sidoarjo Regency for 10 years from 2014-2023 is the Electricity and Gas Procurement Sector with an average LQ value of 2.86, then the Transportation and Warehousing sector has an average LQ value of 2.43 and continued with the Manufacturing Industry sector has an average LQ value of 1.71. The leading sector in Sidoarjo Regency is the Manufacturing Industry sector. Based on the Location Quotient (LQ) analysis, this sector has a value of 1.71, indicating that its growth is greater than the same sector in East Java Province. In addition, the Shift Share method shows a change component value of Rp 31,112,498.15, indicating that this sector is growing rapidly and has high competitiveness. With a positive net shift value of Rp 6,790,608.67, this sector is also considered progressive, reflecting sustainable growth. Thus, this sector has the potential to be developed so that it can support the economic growth of Sidoarjo Regency in the future.

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