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ANALYSIS OF THE ECONOMIC POTENTIAL OF INDRAGIRI HULU DISTRICT USING LOCATION QUOTIENT AND KLASSEN TYPOLOGY METHODS

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Abstract

This study aims to determine the leading sectors or basic sectors in the economy of Indragiri Hulu Regency. The type of data in this study is quantitative data. The data source used is secondary data in the form of periodic data (Time Series) on the Gross Regional Domestic Product (GRDP) of Indragiri Hulu Regency and Riau Province in 2016-2023. The analysis tools used are Location Quotient Analysis and Klassen Typology. The results of the Location Quotient analysis show that there are 10 basic sectors in Indragiri Hulu Regency, namely agriculture, forestry and fisheries; processing industry; water supply, waste management, waste, and recycling; construction; wholesale and retail trade, car and motorcycle repair; transportation and warehousing; provision of accommodation and food and beverage; real estate; educational services and other services. There are 7 non-basic sectors in Indragiri Hulu Regency, namely mining and excavation; electricity and gas supply; information and communication; financial services and insurance; corporate services; government administration, defense, and Compulsory Social Security and health services and social activities. Based on the results of the Klassen Typology analysis, the sectors in the advanced and fast-growing category are the provision of accommodation and food and beverages; education services, and other services. The advanced but depressed sector categories are agriculture, forestry, and fisheries; processing industry; water supply, waste management, waste and recycling; construction; wholesale and retail trade of car and motorcycle repairs; transportation and warehousing, and real estate. The potential sector categories are mining and excavation and the relatively lagging categories are electricity and gas supply; information and communication; financial services and insurance; corporate services; government administration, defense and mandatory social security; and health services and social activities

Keywords: Location Quotient Analysis, Klassen Typology, GRDP

INTRODUCTION

The economic progress of a region can be measured from the aggregate economic growth (overall) by looking at the Gross Regional Domestic Product (GRDP) value from its sectoral growth. If a sector has a large contribution and its growth is fast, it can increase aggregate economic growth. Aggregative economic growth can also experience obstacles if a sector makes a large contribution but its growth is prolonged. The implementation of regional autonomy is a form of hope that regional governments can identify regional

potential and allocate funding to targeted sectors. With the authority given to regional governments to regulate the development of leading sectors, economic growth will be good. The growth and development of regional development must be in accordance with the potential conditions and aspirations of the community. The utilization of resources in a region will be less than optimal if the implementation of regional development priorities is not in accordance with the existing potential. This will cause slow economic growth in the region.

Table 1: GRDP Growth of Indragiri Hulu Regency 2016-2023 Based on the 2010 Constant Price Index

No	Year	Total GRDP (Million Rupiah)	Growth
1	2016	26.742.942,27	-
2	2017	27.807.308,81	3,98%
3	2018	28.778.035,54	3,49%
4	2019	29.866.425,07	3,78%
5	2020	29.831.955,35	-0,12%
6	2021	31.102.981,12	4,26%
7	2022	32.543.674,73	4,63%
8	2023	33.971.007,54	4,39%

Source: BPS, 2024

Based on the 2010 GRDP data of Indragiri Hulu Regency at Constant Prices (ADHK) According to Business Fields in 2016-2023 (Million Rupiah), it can be seen that the overall value of GRDP generally fluctuates. There are 5 main dominant sectors in the formation of GRDP in Indragiri Hulu Regency during the last 8 years of the 2016-2023 period, namely the agriculture, forestry and fisheries sector; mining and quarrying sector; processing industry sector; construction sector and wholesale and retail trade sector: car and motorcycle repair.

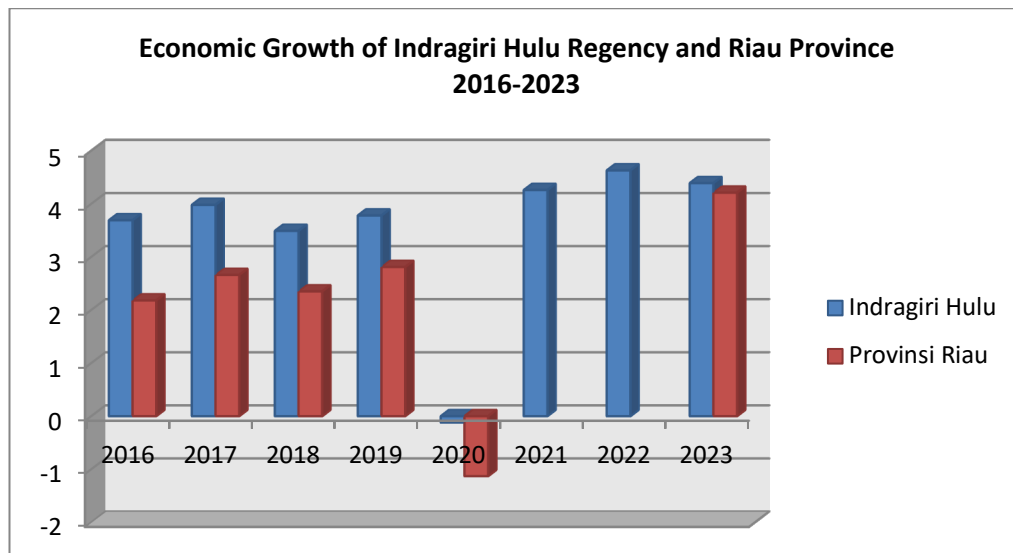
The economy of Indragiri Hulu Regency in 2016-2023 can be said to be in good condition, but there are still potential economic sectors that have not been optimally utilized. It can be seen that the 2 main sectors that form the GRDP value are the processing industry sector and the agriculture, forestry and fisheries sector. The local government can maximize the added value in each business field in order to accelerate economic growth.

**Table 2: Growth of Riau Province's GRDP 2016-2023 Based on the 2010
Constant Price Index**

No	Year	Total GRDP (Million Rupiah)	Growth
1	2016	458.769.340	-
2	2017	470.983.512	2,66%
3	2018	482.064.629	2,35%
4	2019	495.607.055	2,81%
5	2020	489.995.750	-1,13%
6	2021	506.471.907	3,36%
7	2022	529.532.979	4,55%
8	2023	551.828.486	4,21%

Source: BPS, 2024

The value of Riau Province's GRDP during 2016-2023 also generally experienced good growth. Indragiri Hulu Regency is one of the regencies that makes a significant contribution to the economy of Riau Province. Similar to Indragiri Hulu Regency, there are 5 dominant sectors in the formation of Riau Province's GRDP for the 2016-2023 period, namely the agriculture, forestry and fisheries sector; mining and quarrying sector; processing industry sector; construction sector and wholesale and retail trade sector: car and motorcycle repair.



Source: BPS, 2024

GRDP growth is highly dependent on the role of each economic sector in a region. The greater the contribution given by each sector to the total GRDP of a region, the better the regional economic growth will be. Based on the background above, the author is interested in knowing the potential sectors in Indragiri Hulu Regency using the Location Quotient (LQ) and Klassen Typology methods.

LITERATURE REVIEW

LEADING ECONOMIC SECTOR

Leading sectors are usually related to a comparison between regional, national and international scales. Leading sectors can be interpreted as an advantage in a commodity that has its own quality in a particular country or region compared to similar commodities in other regions. It is said to be a leading sector if it has competitiveness in a certain period of time and is assumed to provide prospects in the future.

The growth and development of a region is largely determined by the economic sector that develops in that region. The level of regional economic growth can be measured from the level of regional income from production, product processing and marketing systems, and population characteristics based on livelihoods. Therefore, to increase the economic growth of a region, it is very necessary to develop economic sectors so that they can have a major impact on economic development.

Mahmudi (2010) stated that the prime sector or leading sector is the sector that has the most dominant contribution to the regional economy. A sector is categorized as a leading sector if the sector has a high growth rate and is able to contribute to GRDP. While the potential sector is a sector that also makes a high contribution to the regional economy but the growth of the sector is slow and tends to decline. The developing sector is a sector that is experiencing an increase, indicated by high growth but its contribution is still low. Meanwhile, the underdeveloped sector is a sector that is a regional weakness indicated by slow growth and low contribution to GRDP.

Mahmudi (2010) further stated that the leading sector needs to be maintained by the government because it is the strength and competitiveness of the region (core competence). If this leading sector is not managed properly, it can shift to become a potential sector. For the developing sector, the government needs to optimize it through intensification. This developing sector is a prospect for the region because it is still possible to increase its contribution so that it can become a leading sector. Meanwhile, the potential sector needs coaching and improvement because it basically still contributes to the regional economy but its growth is declining. For the underdeveloped sector, the government tries as much as possible to increase the contribution of the sector even though this sector is quite difficult to be used as a competitiveness for the region concerned.

According to Adisasmita (2006) there are several criteria regarding the leading economic sector, including:

- 1) The leading sector has strong forward and backward linkages, both among leading sectors and other sectors.
- 2) Leading sectors are able to compete (Competitiveness) with similar sectors from other regions, both regionally and internationally.
- 3) Leading sectors must be able to become the main driver (Prime Mover) of economic development. This means that the leading sector can provide a significant contribution to increasing production, other sectors and community income.
- 4) Development of leading sectors is oriented towards environmental sustainability

RESEARCH METHODS

This research was conducted in Indragiri Hulu Regency, Riau Province using published data from the Central Statistics Agency of Indragiri Hulu Regency and Riau Province. The data used is GRDP at constant prices with a base year of 2010 according to the business sector in Indragiri Hulu Regency and Riau Province in 2016 - 2023. The data analysis techniques used are Location Quotient (LQ) Analysis and Klassen Typology Analysis

1. Location Quotient (LQ) analysis is a comparison of the magnitude of the role of a sector in a region to the magnitude of the role of the sector nationally. LQ is a method for calculating the relative comparison of the contribution of the added value of a sector in a region (district/city) to the contribution of the added value of the relevant sector on a provincial or national scale (Tarigan: 2015). The Location Quotient analysis used to find the leading sector is by using the formula:

$$LQ = \frac{PDRB_{IH} / \sum PDRB_{IH}}{PDRB / \sum PDRB}$$

Description:

LQ	=	Amount of Economic Sector Location Coefficient
$PDRB_{IH}$	=	Sector i in Regency in a Certain Year
$\sum PDRB_{IH}$	=	Total PDRB in Regency in a Certain Year
PDRB	=	Sector i in Province in a Certain Year
$\sum PDRB$	=	Total PDRB in Province in a Certain Year

The classification criteria are as follows:

- a. If $LQ > 1$, it shows that the sector in the area is a base sector (potential/superior sector) that is able to export its industrial products to other areas.
 - b. If $LQ < 1$, it shows that the sector in the area is not a base sector and tends to import from other areas.
 - c. If $LQ = 1$, it shows that the role of the sector owned by the area is consumed by the area.
2. Klassen Typology Analysis divides regions based on two main indicators, namely regional economic growth and regional per capita income by determining the average economic growth as the vertical axis and the average per capita income

as the horizontal axis.

Klassen Typology Analysis provides the following benefits:

- a. Can prioritize regional policies based on the superiority of sectors, sub-sectors, businesses, or regional commodities which are the results of the Klassen Typology analysis.
- b. Can determine the priority of a region's policies based on the economic position it has in relation to the national economy or the region it refers to.
- c. Can assess a region both in terms of regions and sectors.

To find out the picture of the pattern and structure of economic growth in each region with Klassen Typology Analysis, there are 4 categories, namely:

- a. Leading sector, namely a sector that is rapidly advancing and growing rapidly.
- b. Advanced but depressed sector.
- c. Potential sector or can still develop rapidly.
- d. Relatively lagging sector.

Table 3: Classification According to Klassen Typology Analysis

Sectoral Contribution to GRDP	Sectoral Growth Rate	
	$g_i > g$	$g_i < g$
$s_i > s$	Advanced and fast-growing sectors (leading)	Advanced but depressed sectors
$s_i < s$	Potential sectors or can still develop quickly	Relatively lagging sectors

Description:

- g_i = Average growth rate of the sector in the district area
 g = Average growth rate of the sector in the province area
 s_i = Average contribution of the sector in the district area
 s = Average contribution of the sector in the province area

RESULTS AND DISCUSSION

a. Location Quotient (LQ) Analysis

By using the Location Quotient analysis, the basic and non-basic sectors can be determined and identified by comparing the GRDP of Indragiri Hulu Regency with the GRDP of Riau Province. The table below is the result of the calculation of the Location Quotient (LQ) value of Indragiri Hulu Regency from 2016 to 2023.

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Table 4: Results of the Calculation of LQ of Indragiri Hulu Regency and Riau Province in 2016 - 2023

Non-Oil and Gas GRDP	LOCATION QUOTIENT								Average LQ
	2016	2017	2018	2019	2020	2021	2022	2023	
A. Agriculture, Forestry, and Fisheries	1,189	1,152	1,131	1,121	1,111	1,104	1,107	1,113	1,129
B. Mining and Quarrying	0,420	0,433	0,447	0,471	0,495	0,522	0,542	0,544	0,484
C. Processing Industry	1,064	1,059	1,049	1,026	1,008	0,990	0,981	0,968	1,018
D. Procurement of Electricity and Gas	0,900	0,909	0,918	0,832	0,746	0,728	0,669	0,711	0,802
E. Water Procurement, Waste Management, Waste and Recycling	3,917	3,758	3,774	3,729	3,750	3,671	3,640	3,614	3,732
F. Construction	1,601	1,554	1,511	1,464	1,450	1,464	1,451	1,455	1,494
G. Wholesale and Retail Trade; Car and Motorcycle Repair	1,068	1,047	1,030	1,014	1,037	1,009	1,000	1,000	1,026
H. Transportation and Warehousing	1,317	1,276	1,259	1,269	1,354	1,318	1,287	1,263	1,293
I. Provision of Accommodation and Food and Drink	1,710	1,690	1,676	1,696	1,694	1,663	1,658	1,664	1,681
J. Information and Communication	0,833	0,836	0,840	0,818	0,783	0,763	0,758	0,753	0,798
K. Financial Services and Insurance	0,946	0,954	0,929	0,924	0,909	0,890	0,889	0,875	0,915
L. Real Estate	1,405	1,378	1,354	1,314	1,298	1,287	1,286	1,285	1,326
M. Company Services	0,641	0,626	0,603	0,592	0,607	0,601	0,558	0,535	0,595
N. Government Administration, Defense, and Compulsory Social Security	1,007	0,999	0,985	0,959	0,968	0,997	0,936	0,912	0,971
O. Educational Services	1,471	1,464	1,452	1,421	1,404	1,378	1,378	1,393	1,420
P. Health Services and Social Activities	1,053	1,033	1,025	1,004	0,954	0,877	0,876	0,865	0,961
Q. Other Services	1,510	1,473	1,441	1,406	1,481	1,466	1,459	1,463	1,462

Based on the table of Location Quotient calculation results above, it can be seen the basic sectors (potential sectors or leading sectors) in Indragiri Hulu Regency in 2016-2023. There are 10 basic sectors, namely the agriculture, forestry and fisheries sector with an average LQ value of 1.129; the processing industry sector with an average LQ value of 1.018; the water supply, waste management, waste and recycling sector with an average LQ value of 3.732; the construction sector with an average LQ value of 1.494; the wholesale and retail trade sector, car and motorcycle repair with an average LQ value of 1.026; the transportation and warehousing sector with an average LQ value of 1.293; the accommodation and food and beverage provision sector with an average LQ value of 1.681; the real estate sector with an average LQ value of 1.326; education services sector with an average LQ value of 1.420 and other services sectors with an average LQ value of 1.462. These basic sectors can certainly describe the economic potential that has a major influence on economic growth in Indragiri Hulu Regency. These sectors have been able to meet the needs in their regions and can export

to other regions. If this basic sector can continue to be developed, it will affect the growth of other sectors.

Based on the results of the LQ calculation above, there are 7 non-basic sectors in Indragiri Hulu Regency, namely the mining and excavation sector; electricity and gas procurement sector; information and communication sector; financial services and insurance sector; corporate services sector; government administration, defense and Compulsory Social Security sector and health services and social activities sector. This non-basic sector shows that Indragiri Hulu Regency has not been able to meet the needs in its region and allows imports from outside its region in order to be able to meet regional needs properly.

b. Tipologi Klassen Analysis

Klassen Typology Analysis is used to determine the classification of economic sectors in Indragiri Hulu Regency in 2016-2023 according to its growth structure. There are 3 sectors that have the largest contribution to the growth of GRDP in Indragiri Hulu Regency, namely the manufacturing industry sector at 31.46%; the agriculture, forestry and fisheries sector at 29.85%; and the construction sector at 12.53%. While the smallest contribution to GRDP is the corporate services sector at 0.003%.

Table 5: Growth Rate and Contribution of GRDP Sectors at Constant 2010 Prices in Indragiri Hulu Regency and Riau Province 2016-2023

Non-Oil and Gas GRDP	INDRAGIRI HULU REGENCY		RIAU PROVINCE	
	Average Growth (%)	Average Contribution (%)	Average Growth (%)	Average Contribution (%)
A. Agriculture, Forestry, and Fisheries	0,039	29,85	0,040308	26,47
B. Mining and Quarrying	0,009	8,41	-0,03481	17,61
C. Processing Industry	0,036	31,46	0,041679	30,93
D. Procurement of Electricity and Gas	0,046	0,06	0,075062	0,07
E. Water Procurement, Waste Management, Waste and Recycling	0,028	0,05	0,031627	0,01
F. Construction	0,038	12,53	0,044359	8,40
G. Wholesale and Retail Trade; Car and Motorcycle Repair	0,046	9,65	0,048338	9,41
H. Transportation and Warehousing	0,021	1,01	0,022498	0,79
I. Provision of Accommodation and Food and Drink	0,036	0,75	0,03264	0,45
J. Information and Communication	0,071	0,81	0,078038	1,01
K. Financial Services and Insurance	0,026	0,88	0,029825	0,97
L. Real Estate	0,033	1,24	0,038071	0,93
M. Company Services	0,006	0,003	0,026994	0,01
N. Government Administration, Defense, and Compulsory Social Security	0,013	1,67	0,019363	1,72
O. Educational Services	0,040412	0,72	0,040404	0,51

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P. Health Services and Social Activities	0,062	0,21	0,084288	0,22
Q. Other Services	0,039	0,71	0,037598	0,48

The average value of growth and contribution of GRDP of Indragiri Hulu Regency and Riau Province in 2016-2023 can be classified into sectors included in quadrant I, quadrant II, quadrant III and quadrant IV.

Table 6: Classification of Klassen Typology Analysis

<p style="text-align: center;">Quadrant I Advanced and fast-growing sectors (leading)</p> <ul style="list-style-type: none"> ▪ Accommodation and Food and Beverage Provision ▪ Educational Services • Other Services 	<p style="text-align: center;">Quadrant II Advanced but depressed sectors</p> <ul style="list-style-type: none"> ▪ Agriculture, Forestry and Fisheries ▪ Manufacturing Industry ▪ Water Supply, Waste Management, Waste and Recycling ▪ Construction ▪ Wholesale and Retail Trade; Car and Motorcycle Repair ▪ Transportation and Warehousing • Real Estate
<p style="text-align: center;">Quadrant III Potential Sectors or still able to grow rapidly</p> <ul style="list-style-type: none"> • Mining and Quarrying 	<p style="text-align: center;">Quadrant IV Relatively underdeveloped sectors</p> <ul style="list-style-type: none"> ▪ Electricity and Gas Provision ▪ Information and Communication ▪ Financial and Insurance Services ▪ Corporate Services ▪ Government Administration, Defense and Compulsory Social Security • Health Services and Social Activities

Based on the Klassen Typology analysis classification table above, there are 6 sectors in quadrant IV where the average growth rate of sector i in Indragiri Hulu Regency is smaller than the growth rate of Riau Province and the average contribution of GRDP of sector i is smaller than the contribution of GRDP of Riau Province in 2016-2023. The advanced and fast-growing sectors and at the same time becoming leading sectors are expected to continue to be developed so that they can have a major influence on the growth of other sectors.

CLOSING

CONCLUSION

The conclusions of this study are as follows:

1. Based on the results of the Location Quotient (LQ) analysis, there are 10 basic sectors in Indragiri Hulu Regency, namely agriculture, forestry and fisheries; processing industry; water supply, waste management, waste and recycling; construction; wholesale and retail trade, car and motorcycle repair; transportation and warehousing; provision of accommodation and food and beverages; real estate; educational services

and other services. And there are 7 non-basic sectors in Indragiri Hulu Regency, namely mining and excavation; electricity and gas supply; information and communication; financial services and insurance; corporate services; government administration, defense and Compulsory Social Security and health services and social activities.

2. Based on the results of the Klassen Typology analysis of Indragiri Hulu Regency, the sectors in Quadrant I are provision of accommodation and food and beverages; educational services and other services. Quadrant II agriculture, forestry and fisheries; processing industry; water supply, waste management, waste and recycling; construction; wholesale and retail trade, car and motorcycle repair; transportation and warehousing and real estate. Quadrant III mining and excavation and quadrant IV electricity and gas supply; information and communication; financial services and insurance; corporate services; government administration, defense and compulsory social security; and health services and social activities

SUGGESTION

The suggestions that can be given in the study are as follows:

1. The regional government of Indragiri Hulu Regency should strive to maintain and continue to increase GRDP growth, especially in the basic sector or leading sector while still paying attention to the development of other sectors in every regional development plan.
2. The Regional Government of Indragiri Hulu Regency is expected to always provide full support to relatively lagging sectors, advanced but depressed sectors and can maintain advanced and fast-growing and potential sectors so that they can help other sectors in accelerating regional development.

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