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Identification of Leading Sectors in Regional Economic Development in Kapuas Hulu District

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Abstract:

This research was conducted in Kapuas Hulu District which is located in West Kalimantan Province and borders with Malaysia. The purpose of this research was conducted to determine the right strategy to see the base sector which has the potential to become a leading sector and the productivity of the leading sector which can provide a reference for regional development of Kapuas Hulu Regency to the local government. government. This study also uses a quantitative descriptive method with Location Quotient analysis, Shift Share analysis and Tipologi klassen analysis. The research data used is time series data in the form of PDRB of Kapuas Hulu Regency and West Kalimantan Province from 2015 to 2019 based on constant base prices. The research found that in the LQ analysis there were 6 sectors based on the second analysis there were 7 sectors that had positive values and had comparative advantages and in the final analysis there were 2 sectors that experienced advanced and fast growth. Leading sector and economic potential in Kapuas Hulu Regency is the construction sector which has a positive value in each technical analysis.

Keywords: *Competitive sector; Kapuas Hulu Regency; Leading sector*

1. Introduction

Regional development is inseparable from the regional economy because the process of regional growth and development does not occur by itself but requires consistent efforts from various parties aimed at providing the greatest possible prosperity for mankind (Sugarmansyah et al., 2022). Each region has unique characteristics and economic potentials, including resources, human capital, and community institutions, which influence how development planning is carried out (Sahya & Sumantri, 2016). The specificity of these differences determines the approach needed for effective regional development.

The phenomenon of regional economic disparities is pronounced in many parts of the world, and Indonesia is no exception. Regions differ significantly in their economic potential, resources, and developmental needs, leading to uneven growth

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and prosperity (Wen & Wang 2019). For instance, while some areas may be resource-rich and economically vibrant, others may struggle with limited resources and poor infrastructure. This disparity necessitates tailored development strategies that consider the unique conditions of each region (Fadhilah 2023).

Despite extensive research on regional development, there is a significant gap in understanding the specific economic dynamics and leading sectors in less studied regions like Kapuas Hulu Regency. Existing studies often focus on more prominent areas or regions with readily available data, leaving out smaller or less accessible regions. This gap is particularly critical in the context of economic planning and development strategies, as a lack of detailed regional data can lead to ineffective or misdirected policies.

This research aims to fill this gap by focusing on Kapuas Hulu Regency, a relatively under-researched area in West Kalimantan Province. By identifying the leading sectors of Gross Regional Domestic Product (GRDP) according to business fields, this study provides novel insights into the economic structure of the region. The emphasis on GRDP as a macro measure of regional economic growth allows for a comprehensive understanding of the economic performance and potential of Kapuas Hulu Regency. This approach not only highlights the unique economic landscape of the region but also provides a reference for targeted economic planning and development.

The urgency of this research is underscored by the significant economic challenges posed by the COVID-19 pandemic. The year 2020 saw a global economic downturn, with Indonesia experiencing a decline in economic growth. West Kalimantan, including Kapuas Hulu Regency, was notably affected, with economic growth rates plummeting. Kapuas Hulu, covering 20 percent of West Kalimantan's area and directly bordering Malaysia, saw a -2.43 percent economic growth rate in 2020, highlighting the urgent need for effective economic strategies. The uneven population distribution, with some districts densely populated and others sparsely, further complicates economic planning. Identifying potential leading sectors is crucial to revitalizing the economy and ensuring sustainable development in Kapuas Hulu Regency.

This study aims to address these urgent needs by providing a detailed analysis of the leading sectors within Kapuas Hulu's GRDP. By doing so, it seeks to offer a foundation for informed economic planning and development strategies that can help mitigate the adverse effects of economic downturns and promote regional prosperity.

2. Theoretical Background

Regional economic growth is the increase in the income of the community as a whole that occurs in the region, namely all the added value that occurs (M. Jhingan,

2016). Economic Development According to (M. L. Jhingan, 2010), economic development arises due to problems with developments that occur in underdeveloped countries. Economic development is defined into three categories: economic development as measured by national income in the long term, an increase in per capita income in the long term, and economic development in terms of economic welfare. Underdeveloped countries need accelerated economic development in order to improve the balance of development. According to (Arsyad, 2010), economic development is the process of increasing the real per capita income of a country through a process of improvement of the institutional system over the long term. Economic development is often equated with economic growth. Though the two terms have different meanings in the economic field (Rohmana & Utami 2017).

A leading sector is one that has high resilience and capability so that it can be used as a foundation for economic development expectations (Kharisma et al., 2021). The criteria for leading sectors will vary greatly. This is based on how big the sector's role is in the regional economy, including: first, the leading sector has a high growth rate; second, the sector has a relatively large employment absorption rate; third, the sector has high inter-sector linkages both forward and backward; and fourth, it can also be interpreted as a sector capable of creating high added value (Sambodo in (Usya, 2006).

Relevant studies have previously been carried out; there are several leading sectors in various regions in Indonesia, namely, according to Irmansyah (2019), related to Mojokerto Regency GRDP data in 2015-2016, which shows that there are leading sectors that must be prioritized in Mojokerto Regency, namely the real estate sector and the industrial sector. processing. In addition, there is also (Hakim, 2019) as the leading sector in Gresik Regency in 2011–2017, which has three sectors, namely the manufacturing industry sector, the mining and quarrying sector, and the electricity and gas procurement sector.

3. Methodology

This research uses a qualitative method with data obtained from the Central Bureau of Statistics in the form of time series data for 2015–2019. With the analysis methods of Location Quetiont (LQ) analysis and Shift Share (SS) analysis.

Location Quotient Analysis

Location Quotien, commonly abbreviated as LQ, is a data analysis tool for a comparison of the size of the role of a sector or industry in a region against the size of that role nationally. This method is one of the most well-known measurements of the basic economic model to determine basic or non-base sectors, which can be determined by the following formula: (Sihombing, 2018)

$$LQ = \frac{X_r/R_r}{X_n/R_n} \qquad (1)$$

Description: Xr: the value of sector X in the subregion (Melawi)
Xn: X sector value in Region (West Kalimantan)
Rr : total sector value in subregion (Melawi)
Rn : total sector value in the region (West Kalimantan)
Based on the results of the LQ calculation from the formula, it can be concluded that the basis sector is using the following parameters:
LQ > 1 is a base sector, meaning that the district level of specialization is higher than the province level. So that the sector can do
LQ = 1 means that the district level of specialization is the same as at the province level
LQ <1 is a non-base sector, namely a sector with a district level of specialization that is lower than the province level.

Shift Share analysis
Shift-Share (SS) analysis is a technique for describing the economic growth of a region as a change or increase in the value of a variable or indicator of economic growth in a region within a certain period of time. It is dynamic and raises growth rates in a time series or over a period of time. The formula for calculating shift share is as follows (Niniek, 2015). In this analysis, there are 3 components that can be identified, namely:

1. Regional economic growth (N) or provincial share is the number of regional jobs if the ratio of changes is the same as the national growth rate at a certain time.
2. Industry mix (M) Proportional Shift is a positive component of a region that specializes in fast-growing national sectors while specializing in slow-growing national sectors.
3. Competitive Advantage (C) or Differential Shift Component to measure the magnitude of the net regional shift with certain sectors so that growth is faster or slower in the region concerned at the national level, which is caused by internal locational factors.

$$\mathbf{D_{ij}} = \mathbf{N}\ ij + \mathbf{M}\ ij + \mathbf{C}_{ij} \quad \textbf{(2)}$$

$$\mathbf{D_{ij}} = E\ ij^{*} - \mathbf{E}_{ij} \quad \textbf{(3)}$$

$$\mathbf{N_{ij}} = \mathbf{E_{ij}}\ \mathbf{x}\ \mathbf{r}_{n} \quad \textbf{(4)}$$

$$\mathbf{M_{ij}} = \mathbf{E_{ij}}\ (r_{dalam} - \mathbf{r}_{n}) \quad \textbf{(5)}$$

Pergeseran Diferensial

$$\mathbf{C_{ij}} = \mathbf{E}\ ij\ (r_{ij} - \mathbf{r}_{in}) \quad \textbf{(6)}$$

$$\mathbf{r_{ij}} = (\ E^{*}ij\ - E\ ij\ )/\ \mathbf{E}_{ij} \quad \textbf{(7)}$$

Information:

- Dij = Regional Growth
- Nij = Broader regional economic growth
- Mij = Proportional Shift (industry mix)
- Cij= Differential Shift

- Eij* = GRDP or labor in sector i region j last year
- Eij=GRDP or labor in sector i region j in the initial year
- E ij is the added value (labor) of sector i in region j
- Ein is the added value (labor) of the national sector i
- En is the national GRDP (total workforce).
- Superscript * indicates year-end analysis

Klassen's typology

Klassen topology analysis is carried out by looking at the average sectoral contribution and average growth, which is useful for seeing the structure and growth pattern of each sector of the area studied and the more macroregional sectors (Imelia, 2006). Through this analysis, four characteristic patterns are obtained: structure and economic contribution that vary in each sector. The following is the classification of the Klasen typology.

1. If yi>ydan ri>r, the classification is a fast-growing advanced sector (high growth and high income).
2. If yiydan ri>r, then the classification is a fast-growing sector.
3. If yi>ydan rir, then the classification is a developed but depressed sector.
4. If yiy and rir, then the classification is a relatively lagging sector (low growth and low income).

Table 1. Klassen Typology Classification

Contribution GRDP(y) / **Growth rate GRDP (R)**	**Yi>y**	**Yi<y**
Ri>r	Fast growing forward	Fast growing
Ri<r	Forward but depressed	Relatively lagging

Description: yi = Average GRDP contribution of sector i in Kapuas Hulu District
y = Average GRDP contribution in West Kalimantan Province
ri = Average growth rate of sector i in Kapuas Hulu District
r = Average GRDP growth rate of West Kalimantan Province

Table 2. Example of table numbering

Coloumn 1	**Coloumn 1**	**Coloumn 2**	**Countries**
1.	Armenia	Israel	Pakistan
2.	Azerbaijan	Japan	Philippines
3.	China	Jordan	Sri Lanka
4.	Georgia	Kazakhstan	Singapore
5.	Hong Kong	Korea, Rep.	Thailand
6.	India	Kyrgyz	Turkey
7.	Indonesia	Malaysia	Vietnam

Source: Processed Data (2019)

4. Empirical Findings/Result and Discussion

Optimizing the process of economic growth is needed by looking at the leading sectors and also understanding the characteristics of the regional economy based on gross regional domestic product (GDP). The following is the result of Location Quetiont (LQ) analysis and shift share (SS) analysis, as well as Klassen typology analysis.

Table 3. Results of the Location Quotient analysis for Kapuas Hulu Regency in 2015-2019

Business field (million Rupiah)	LQ (Tahun)					LQ average	Information
	2015	2016	2017	2018	2019		
(A) Agriculture, Forestry and Fisheries	1,14	1,12	1,10	1,09	1,10	1,11	Base
(B) Mining and excavation	1,63	1,42	1,49	1,40	1,36	1,46	Base
(C) Processing industry	0,69	0,68	0,69	0,70	0,69	0,69	Non Base
(D) Procurement of Electricity and Gas	0,07	0,06	0,06	0,05	0,05	0,06	Non Base
(E) Water Procurement, Waste Management, Waste and Recycling	0,83	0,81	0,81	0,77	0,74	0,79	Non Base
(F) Construction	1,61	1,77	1,76	1,82	1,82	1,76	Base
(G) Wholesale and Retail Trade; Car and Motorcycle Repair	0,81	0,81	0,80	0,80	0,79	0,80	Non Base
(H) Transportation and Warehousing	0,33	0,32	0,31	0,31	0,33	0,32	Non Base
(I) Provision of Accommodation and Food and Drink	0,80	0,81	0,82	0,80	0,79	0,80	Non Base
(J) Information and Communication	0,91	0,89	0,92	0,95	0,97	0,93	Non Base
(K) Financial Services and Insurance	0,50	0,47	0,46	0,43	0,46	0,46	Non Base
(L) Real Estate	0,85	0,84	0,84	0,83	0,84	0,84	Non Base
(M,N) Company Services	1,15	1,13	1,14	1,13	1,14	1,14	Base
(O) Government Administration, Defense and Compulsory Social Security	1,00	0,99	1,02	1,04	1,05	1,02	Base
(P) Education Services	0,91	0,90	0,89	0,88	0,87	0,89	Base
(Q) Health Services and Social Activities	1,20	1,20	1,20	1,18	1,19	1,19	Base
(R,S,T,U) other services	0,89	0,88	0,88	0,87	0,89	0,88	Non Base
PDRB	1,00	1,00	1,00	1,00	1,00	1,00	

Source: Secondary data output after processing, 2022; (Bella, 2022)

The table above shows the results of the LQ analysis on 17 GRDP sectors by business field, and Kapuas Hulu Regency has six business sector fields, the base sectors consisting of the construction sector (1), which is a supply chain that provides construction services and improves the quality of regional infrastructure, the mining sector and quarrying (2), the health services and social activities sector (3), the corporate services sector (4), the agriculture, plantation, and fishing sectors (5), and the government administration, defense, and compulsory social security sectors (6)). We know that the agricultural, plantation, and forestry sectors in Kapuas Hulu District are famous for the development of various plantation commodities, including rubber, coconut, oil palm, coffee, pepper, cocoa (cocoa), cotton, sugarcane, palm sugar, areca nut, jatropha, and fisheries. There are also arowana fish species, which are ornamental fish species that are the mainstay of West Kalimantan's exports. The construction sector continues to increase from previous years. This can be seen in 2015, when the LQ value was 1.61, while in 2019, it was 1.82, indicating that the GRDP of the construction sector is always increasing.

Next is the change in the sectoral structure of the economy of Kapuas Hualu Regency, which is influenced by a more macro sectoral structure, namely West Kalimantan Province, which is analyzed by shift share analysis, and from the N, M, and C2 values, they are positive, so the average is positive because it has the potential to increase economic growth. The following is a shift share analysis table.

Table 4. Shift share analysis results for Kapuas Hulu District

Business field	N	M	C	Growth 2015-2019	Information
(A) Agriculture, Forestry and Fisheries	737363,0146	-52487,84077	-87832,1438	597043,03	Negative
(B) Mining and Quarrying	251154,6972	138324,3918	-157944,349	231534,74	Negative
(C) Processing Industry	345112,9867	40787,92997	-2804,276689	383096,64	Negative
(D) Procurement of Electricity and Gas	159,9306455	218,0353631	-140,3260086	237,64	Negative
(E) Water Supply, Waste Management, Waste and Recycling	3222,577944	-556,1213219	-1140,636622	1525,82	Negative
(F) Construction	663393,8852	-129743,3439	271962,1487	805612,69	Positive
(G) Wholesale and Retail Trade; Car and Motorcycle Repair	376757,0893	-49999,00054	-20607,69879	306150,39	Negative
(H) Transportation and Warehousing	45913,46227	10211,86553	-2666,7178	53458,61	Negative
(I) Provision of Accommodation and Food and Drink	60403,72361	2727,334221	-2994,327833	60136,73	Negative
(J) Information and Communication	96610,59707	41030,00654	22347,84639	159988,45	Positive

Business field	N	M	C	Growth 2015-2019	Information
(K) Financial Services and Insurance	55801,63778	-5580,105014	-14174,00277	36047,53	Negative
(L) Real Estate	81049,3274	-12929,55592	-4494,961483	63624,81	Negative
(M,N) Corporate Services	17009,31863	-3609,164845	-385,0237818	13015,13	Negative
(O) Government Administration, Defense and Compulsory Social Security	210216,7215	40230,43938	38198,88912	288646,05	Positive
(P) Educational Services	123187,4528	-36370,12482	-14752,648	72064,68	Negative
(Q) Health Services and Social Activities	56952,5623	-8829,713693	-2064,16861	46058,68	Negative
(R,S,T,U) Other services	28471,41535	-123,4471838	-270,198164	28077,77	Negative

Source: Secondary data output after processing, 2022; (Bella, 2022)

The results of the 2015-2019 Shift-Share Analysis for Kapuas Hulu Regency, the growth of the proportional component of Kapuas Hulu Regency for 2015-2019 or within five years, it turns out that some are positive and some are negative. A positive M value means that the economy of Kapuas Hulu Regency specializes in the same sector that is growing fast in West Kalimantan Province. Namely, there are seven sectors: the Quarrying and Mining Sector, the Manufacturing Industry Sector, the Gas and Electricity Procurement Sector, the Transportation and Warehousing Sector, the Food Accommodation Sector and drinking, Information and Information and Communication Sector, lastly the Administration sector. Conversely, suppose the value of M is negative. In that case, it means that the economy of Kapas Hulu Regency is specializing in the same industry and growing slowly in the economy of West Kalimantan Province. While the Provincial Share (N) and Competitive Advantage (C) have a positive value, there are three sectors: the Construction Sector, Government Administration Sector, and Communication Information Sector.

Finally, the results of the Klasen Typology Analysis were carried out to find out the patterns and benefits of the economic structure of the upstream Kapuas. The class typology will be divided into 4 quadrants consisting of quadrant 1 (the sector is advanced and fast growing and has a positive value), quadrant 2 (a fast-growing sector), quadrant 3 (an advanced but depressed sector), and quadrant 4 (a relatively underdeveloped sector). The following is a table of the results of the Klasen typology analysis.

Table 5. Results of Klassen Typology Analysis

Business field	Classification	Quadrant
(A) Agriculture, Forestry and Fisheries	fast growing sector	2
(B) Mining and Quarrying	fast growing sector	2

Business field	Classification	Quadrant
(C) Processing Industry	Relatively high sector	4
(D) Procurement of Electricity and Gas	Relatively high sector	4
(E) Water Supply, Waste Management, Waste and Recycling	Relatively high sector	4
(F) Construction	The advanced sector is growing fast	1
(G) Wholesale and Retail Trade; Car and Motorcycle Repair	Relatively high sector	4
(H) Transportation and Warehousing	Relatively high sector	4
(I) Provision of Accommodation and Food and Drink	Relatively high sector	4
(J) Information and Communication	a developed but depressed sector	3
(K) Financial Services and Insurance	Relatively high sector	4
(L) Real Estate	Relatively high sector	4
(M,N) Corporate Services	fast growing sector	2
(O) Government Administration, Defense and Compulsory Social Security	the advanced sector is growing fast	1
(P) Educational Services	Relatively high sector	4
(Q) Health Services and Social Activities	fast growing sector	2
(R,S,T,U) Other services	Relatively high sector	4

Source: Secondary data output after processing, 2022; (Bella, 2022)

Table 4 above shows that in this analysis there are two sectors that have positive qualifications and Cadran 1 to improve the economy, namely the Construction Sector and the Government Administration, Defense, and Compulsory Social Security Sector. Communication information in the qualifications of growing but under pressure requires special attention because the Kapuas Hulu Regency is a border area between countries that is prone to conflict, smuggling, and changing nationality. This sector needs attention. Finally, there are 10 sectors that are still lagging behind and need to be developed to realize their potential.

5. Conclusions

The conclusions found in this study First, based on LQ analysis, there are six basic sectors. For shift share analysis, there are 7 sectors with good positive values in terms of comparative advantage and provincial growth, which are abbreviated (N and C). The three class typologies have two sectors, which are experiencing advanced and rapid growth. The final conclusion from the three analyses is that the construction sector is a leading sector and can be a reference for the government. In addition, it is also recommended that local governments, in an effort to increase GRDP, prioritize the development of leading and basic sectors by not ignoring other sectors in planning and implementing regional development and by increasing the economic level of the region. This study is limited to determining the basis sector and competitive sector using the LQ analysis tool and shift share typology. The three analyses are combined to determine the leading economic sector, and it is recommended to continue this research using other approaches or additional

analytical tools so that the data obtained is more valid.

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