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Leading Sectors and Economic Structure of Luwu Timur District

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A B S T R A C T

This research was conducted in East Luwu District, South Sulawesi Province. The data used secondary data sourced from the Central Statistics Agency (CSA). The research method uses Location Quotient and shift-share analysis techniques. The results showed two leading sectors in East Luwu Regency with a value of LQ>1, namely the Agriculture, Forestry, and Fisheries Sectors and the Mining and Quarrying Sector. Based on the results of shift-share analysis, the values of dij and mij of all sectors are positive. This shows that all industries in East Luwu Regency have shifted from their reference areas and greatly influence the shift of industries in East Luwu Regency and have relatively fast growth. In addition, nine sectors have a competitive advantage with a positive cij value and eight sectors that do not have a competitive advantage with a negative cij value.

Keywords: *Leading Sector, Economic Structure, LQ.*
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INTRODUCTION

Backwardness in many developing countries makes economic development essential to do. Increased economic growth cannot create public welfare if there is still economic inequality. This happens because economic growth is only enjoyed by a group of people who have high incomes. Thus, economic development is the right effort in creating equitable prosperity. (Hariyoko & Puspaningtyas, 2020).

The cycle of poverty becomes an obstacle in the economic development of developing countries (Basuki & Mujiraharjo, 2017). Optimal use of resources is an efficient way to get out of the poverty circle. However, if resources cannot be adequately managed, it will lead to a considerable increase in poverty. Thus, resource management is essential in efforts to succeed in economic development. (Nurhayati & Kusumawati, 2016).

The leading sector is an alternative effort in optimally utilizing state and regional resources. The determination of the top industry makes countries and regions more focused on optimizing existing resources. Thus, analyzing leading sectors in regional development planning is the right step to create economic efficiency by utilizing regional autonomy policies. (Diana et al., 2017).

Indonesia is one of the countries that implement a regional autonomy system by Law No. 22/1999 on the provincial government. Regional autonomy is enforced so that regions have rights, authority and obligations in regulating and administering government and the interests of their local communities individually. In addition, Indonesia is strengthening regional autonomy by enacting a fiscal decentralization policy by Law No. 25/1999 on Fiscal Balance between Central and Regional Governments (PKPD). (Amalia, 2012)

The implementation of regional autonomy in Indonesia does not only extend to the provincial level. Instead, it reaches the village level, by Law Number 6 of 2014. This is done so that local governments can identify, manage, and optimally utilize the potential of leading sectors to succeed in economic development. Thus, if there is a failure of economic growth in a region, it results from the region's inability to determine and manage its leading sector. (Gafur et al., 2016)

The leading sector is the foundation of development expectations and the driving force of the regional economy and a characterizing aspect or characteristic of an economy (Tenggara, 2015). The increase in Gross Regional Domestic Product (GRDP) is highly dependent on optimizing the management of these leading sectors. Thus, the top industry becomes a key sector or sector leader in the economy of a region. (Hutabarat, 2020)

The superior economic sector in an area has a high rate of economic growth. In addition, the industry has a relatively large distribution rate (Yuda & Navitas, 2014). An excellent leading sector can create added value and has high sector linkages. Therefore, determining the top sector of each region is very important to support the country's economy. (Amalia, 2012)

In addition to determining the leading sectors, efforts to find out changes in the structure or performance of the regions to higher economic systems, such as provinces or countries, are significant (Soebagiyo & Hascaryo, 2015). This serves to see the effect of national economic growth on the part. In addition, it can help to determine how far the competitiveness of a financial sector in the region with the country's economy is. Thus, the follow-up to determining the leading sectors in the areas can be linked to the broader economy, namely at the provincial and state levels. (Mangilaleng et al., 2015)

The economic structure describes how many economic sectors can produce

an output of goods or services. The more significant the contribution made by the industry to GRDP, the greater the influence of the sector in regional economic development. Each region has an area that has the potential as an economic driver (Sapriadi & Hasbiullah, 2015). Regions that have vital natural resources can support the rate of economic growth. This potential becomes regional capital in carrying out economic development. Thus, each part must focus on managing and developing the potential of restricted resources to create community welfare. (Kamaruddin & Alam, 2019)

East Luwu Regency is one of the regencies within the administrative scope of South Sulawesi Province, which has an area of 6,944.88 Km2 or covers about 11.14% of the total area of South Sulawesi Province. East Luwu Regency is expected to be a driving force for the economy of South Sulawesi Province. Natural resources consisting of mountains, agricultural land, oceans, and agricultural products such as nickel become a considerable capital. Thus, the management of these resources must be managed optimally to create economic growth that can be enjoyed equally by every level of society. (BPS Luwu Timur, 2021).

The potential of East Luwu's natural resources is very strategic in carrying out economic development. Several studies have shown that areas that have mining can make a massive contribution to capital development. East Luwu is a district in South Sulawesi which has the largest nickel mining sector. The mining sector of East Luwu contributed to the GRDP of 80.06% in 2007 and 76.98% in 2003. This figure illustrates that the influence of the mining sector on the regional economy of East Luwu Regency is considerable so that the economic structure of this area can be described as a mining economy. Meanwhile, in the same year, the agricultural sector only contributed to GDP of 13.23% in 2007 and 16.15% in 2003. This condition gives the opposite picture because the reality on the ground turns out that the agricultural sector is the sector that provides the most significant income to the economy. Public. Therefore, this study redefines the leading industry and economic structure in East Luwu Regency in 2020. (BPS Luwu Timur, 2021)

There were several previous studies related to the analysis of the leading sector and the regional economic structure. This study uses Location Quotient analysis techniques to determine the top industry and shift-share analysis techniques in assessing the economy's structure. This research contributes to the regions in knowing the leading sectors used as the focus of economic development. (Putra et al., 2017)

METHODOLOGY

The research location was conducted in East Luwu Regency, South Sulawesi Province. East Luwu Regency is one of the regencies in South Sulawesi Province that has excellent natural resource potential. Such as agricultural land, forestry, mining, sea, and others. This study aims to find the leading sector and economic structure in East Luwu Regency. (BPS, Luwu Timur 2021)

The type of data in this study is secondary data in the form of reports from the Central Statistics Agency (BPS). The data used is Gross Regional Domestic Product at Current Market Prices by Industry in Luwu Timur Regency and South Sulawesi Province (million rupiahs), 2010 and 2020. (BPS, Luwu Timur 2021)

The analysis method in this study uses Location Quotient and shift-share analysis. Location Quotient analysis technique is used to find leading sectors in an area (Utama, 2015). The following is the equation of the Location Quotient analysis technique.

$$LQ = \frac{V1^R / V^R}{V1 / V}$$

LQ is the Location Quotient, $V1^R$ is the added value (GDP) of a district sector, V^R is the added value (GDP) of all district sectors, ***V1*** is the added value (GDP) of an industry at the provincial level, and V is the added value (GDP) of all industries at the local level. (Yunan, 2011)

If the LQ value > 1, then the sector is a leading sector, or the level of specialization at the district level is higher than the provincial level. Meanwhile, if the LQ value < 1, then the sector is not a leading sector, or the level of specialization is lower than the regional level. And if the value of LQ = 1, then the specialization level of the district is the same as the provincial level. (Wahyuningtyas et al., 2013)

The data used in the Location Quotient analysis technique to find the leading sector is Gross Regional Domestic Product at Current Market Prices by Industry in Luwu Timur Regency, 2020.

Table 1
Gross Regional Domestic Product at Current Market Prices by Industry in Luwu Timur Regency and South Sulawesi Province (million rupiahs), 2020

	Business Field	East Luwu(Million)	South Sulawesi (Billion)
A	Agriculture, Forestry and Fisheries	5157680	109495.51
B	Mining and Quarrying	9677497.8	23444.29
C	Processing Industry	790884.9	64647.4
D	Procurement Electricity and Gas	10595.4	322.65
E	Water Supply; Waste, Waste and Recycling	Management	1622,3 510.09
F	Construction	2269461.3	72415.57
G	Wholesale and Retail Trade; Car and Motorcycle Repair	883234.4	72982.96
H	Transportation and warehousing	147146,7	15508.34
I	Provision of accommodation and food and drink	41372.1	6433.99
J	Information and communication	362769.7	28309.67
K	Financial and insurance services	221042, 8	18914.04
L	Real estate	542983.8	19214.27
M,N	Enterprise services	11270.2	2176.61
O	Government administration, defense and compulsory social security	573813.9	23749.39
P	Educational services	486909.1	28238.15
Q	Health services and social activities	325953.5	11635.1
R, S, T, U	Other services	25571.9	6480.52
	Total	21529809.8	504478.55

Source: BPS Luwu Timur, 2021

In addition, this study uses shift-share analysis techniques to determine the economic structure of East Luwu district . The following is the equation of the shift-share analysis technique.

$$nij = Eij.rn \quad (1)$$
$$mij = Eij\ (rin - rn) \quad (2)$$
$$cij = Eij\ (rij - rin) \quad (3)$$
$$dij = nij + mij + cij \quad (4)$$

nij is a component of national sector growth in the district, ***Eij*** is the added value of the sector in the community, rn is the province's economic growth rate, ***mij*** is the sector industry mixin the community, ***rin*** is the growth rate of industry in the section, ***cij*** is the competitive advantage of sectarian the community, ***rij*** is the growth rate of sector in the district, and ***dij*** is the change in a sector regional variable in the section within a certain period. (Herman Syahputra, 2015).

When ***dij*** positive value, then there is a shift in the sector in the region. Vice versa, if ***dij*** is negative, then there is no sector shift in the area. Furthermore, if ***cij*** positive value, then the sector has a competitive advantage. And vice versa, if ***cij*** negative value, then the industry does not have a competitive advantage and should be the focus of development. Meanwhile, when ***mij*** has a positive value, there is an acceleration of growth in the sector. Vice versa, if ***mij*** has a negative value, then there is a slowdown in growth in the industry. (Sobetra & Sanusi, 2014).

The data used in the Location Quotient analysis technique to find leading sectors are Gross Regional Domestic Product at Current Market Prices by Industry in Luwu Timur Regency and South Sulawesi Province (million rupiahs), 2010 and 2020.

Table 2
Gross Regional Domestic Product at Current Market Prices by Industry in East Luwu Regency and South Sulawesi Province (million rupiahs),South Sulawesi 2010 and 2020

		East Luwu		GRDPGRDP	
		2010	2020	2010	2020
A	Agriculture, Forestry and Fisheries	1842402.21	5157680	39598.9094	109495.51
B	Mining and Quarrying	7828176,26	9677497,8	12366,184	23444,29
C	Processing Industry	241084,82	790884.9	23604,4583	64647,4
D	Procurement of Electricity and Gas	4174.3	10595.4	144,5042	322.65
E	Procurement of Water; Waste, Waste, and Recycling	Manageme nt	672.84	1622.3	240.2273 510.09
F	Construction	735949.57	2269461.3	20041.968	72415.57
G	Wholesale and Retail Trade; Car and Motorcycle Repair	325789.01	883234.4	22809.1883	72982.96
H	Transportation and warehousing	56359.41	147146,7	6197,4275	15508.34
I	Provision of accommodation and food and drink	12362.86	41372.1	2284.9984	6433, 99
J	Information and communication	103489.59	362769.7	8951.3235	28309.67
K	Financial and insurance services	61073.18	221042.8	5046.2149	18914.04
L	Real estate	137132.34	542983.8	5927.1012	19214.27
M ,N	Enterprise services	3892.13	11270.2	744.3182	2176.61
O	Government administration, defense and compulsory social security	216715.31	573813.9	9171.546	23749.39
P	Education services	165805.76	486909.1	9320.0905	28238.15
Q	Health services and social activities	90232.95	325953.5	3078.4688	11635.1
R, S, T, U	Other services	8851.6	25571.9	2213,787	6480.52

Source: BPS Sulawesi Selatan, 2021

RESULT AND DISCUSSION

Based on the Location Quotient (LQ) calculation, there are two leading sectors of East Luwu Regency with a value of LQ>1, namely the Agriculture, Forestry, and Fisheries Sectors, and the Mining and Quarrying Sector. Of the two sectors, the highest LQ value is the Mining and Quarrying Sector, with an LQ value of 2.1. Meanwhile, the Agriculture, Forestry and Fisheries Sector has an LQ value of 1.1. This shows that the largest leading sector in East Luwu Regency is the Mining and Quarrying Sector, followed by the Agriculture, Forestry and Fisheries Sector.

In addition, there are six sectors with the lowest LQ values. The sectors are Electricity and Gas Procurement, Water Supply; Waste, Waste and Recycling Management, Transportation and warehousing, accommodation and food and drink, financial and insurance services, and Company services. The six sectors have an LQ value of zero. This shows that the six sectors are not potential sectors in East Luwu Regency.

The following is a table of location quotient (LQ) analysis results

Table 3
Location Quotient (LQ)

	Business Field	Location Quotient (LQ)
A	Agriculture, Forestry, and Fisheries	1.1
B	Mining and Quarrying	2.1
C	Processing Industry	0.2
D	Electricity Procurement and Gas	0.0
E	Water Supply; Waste, Waste and Recycling	0.0
F	ManagementConstruction	0.5
G	Wholesale and Retail Trade; Car and Motorcycle repair	0.2
H	Transportation and warehousing	0.0
I	Provision of accommodation and food and drink	0.0
J	Information and communication	0.1
K	Financial and insurance services	0.0
L	Real estate	0.1
M,N	Corporate services	0.0
O	Government administration, defense, and compulsory social security	0.1
P	Education services	0.1
Q	Health services and social activities	0.1
R, S, T, U	Other services	0.01

Source: Processed Data, 2021

Based on the results of shift-share analysis, the value where all sectors are positive. This shows that all industries in East Luwu Regency have shifted from their reference areas and have a significant influence on moving sectors in East Luwu Regency. However, two industries have the highest friction. They are the Agriculture, Forestry and Fisheries Sector with a dij value of 9933436.11 and the education services sector with a dij value of 957843,411.

In addition, there are nine sectors that have a competitive advantage with a positive Cij value. The nine sectors are Agriculture, Forestry and Fisheries, Processing Industry, Electricity and Gas Procurement, Water Supply; Management

of waste, waste and recycling, transportation and warehousing, Provision of accommodation and food and drink, information and communication, real estate, and government administration, defence, and mandatory social security. Meanwhile, sectors that do not have competitive advantages are Mining and Quarrying, Construction, Wholesale and Retail Trade; Car and Motorcycle Repair, Financial and insurance services, Corporate Services, Education services, Health services, and social activities services. The most competitive sector is a Real estate, with a cij value of 98432,96181, and the least competitive sector is Mining and Quarrying with a cij value of -5163461.58.

All sectors in East Luwu Regency have relatively fast growth. This is evidenced by the mij value of all industries having a positive value. Two sectors have the most rapid growth compared to other sectors. Namely, the Electricity and Gas Procurement Sector with a mij value of 9970.285239. The Manufacturing Sector followed this with a mij value of 812162.8418. The following is a table of shift-share analysis results.

Table 4
Shift Share

	rij	rin	rn	nij	mij	cij	dij
A	1,799432161	1,765114284	1,937442434	3569548,223	6300660,554	63227,33285	9933436,11
B	0,236239129	0,895838684	1,937442434	15166640.87	13586863,6	-5163461.58	23590042.9
C	2.280525501	1.738779225	1.937442434	467087.9605	812162.8418	130606.8036	1409857.61
D	1.538245933	1.232807074	1.937442434	8087.465953	9970.285239	1274.993431	19332.7446
E	1.411123001	1.123363997	1.937442434	1303.588767	1464.404689	193.615768	2961.60922
F	2.083718494	2.613191376	1.937442434	1425859,926	3726044,863	-389665.34	4762239.45
G	1.711062598	2 , 199717545	631197.4526 1388456.111 -159198.411 1860455.15				1.937442434
H	1.502383449 109193.1125 164049.9249 6113.845242 279356.883		1.937442434				1.610863031
I	2.346482934	1.815752519	1.937442434	23952,32957	43491,50275	6561,345817	74005,1781
J	2,505373826	2,16262394	1,937442434	200505,1232	433617,1796	35471,04508	669593,348
K	2,619310473	2,748163797	1,937442434	118325,7705	325178,5988	-7869,48224	435634,887
L	2,959560524	2,241765131	1,937442434	265686,0146	595605,6435	98432,96181	959724.62
M,N	1,895638121	1,924300387	1,937442434	7540,777822	14510,72168	-111,557264	21939,9422
O	1,6477774	1,589464197	1, 937442434	667373.7967 12637.36377 1099884.6			419873.4378
P	2.029815321 239.1153 652055.9748 -15451.6788 957843.411		1.937442434				1.936623553
Q	2.779508826 1.937442434 174821.1463 485916				2.612355575 ,9191	-15082,7309	645655,334
R, S, T, U	1,888957929	1,927345765	1,937442434	17149,46545	33052,94962	-339,793777	49862,6213

Source: Processed Data, 2021

CONCLUSION

There are several exciting things from research on leading sectors and economic structure in East Luwu Regency. First, the Mining and Quarrying Sector is the most superior sector with the most considerable LQ value (2.1) but does not have a competitive advantage. This shows that the management of the industry is less than optimal. So it needs to be the focus of economic development.

Second, the Electricity and Gas Procurement sector has the lowest LQ value, zero, but has the fastest growth compared to other industries with a mij value of 9970.285239. This is a potential that must be considered to become a leading sector. Thus, the sector's growth can be sustainable and have a positive impact on regional economic development.

Third, the Real estate sector is the most competitive sector with a cij value of 98432,96181 but does not have an advantage with an LQ <1 value (0,1). This shows that the real estate sector has potential that can be developed to become one of the leading sectors in the East Luwu Regency. Thus, the real estate sector can contribute more to regional economic development.

Based on these findings, East Luwu Regency has many potentials to become a Regency that can contribute to the provincial and regional economy. This is indicated by the Agriculture, Forestry, and Fisheries Sectors and the Mining and Excavation Sector being the leading sector in East Luwu Regency. In addition, all sectors in East Luwu Regency have relatively fast growth, and nine out of seventeen sectors have competitive advantages. Thus, if the management of these sectors can be carried out efficiently and effectively, it will become a good economic driver.

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