

Identification of Economic Potential in Berau Regency, East Kalimantan-Indonesia

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ABSTRACT

The primary objective of this study is to investigate the economic prospects of Berau Regency in East Kalimantan. This study aims to identify potential areas for further economic development in Berau Regency, to increase the wealth of its citizens. Additionally, it will highlight areas that need to be strengthened to achieve this objective. This study utilized shift share, the location quotient (LQ), and the growth ratio model (GRM) as analytical methods. The main data utilized in this study consisted of the Gross Regional Domestic Product (GRDP) statistics for East Kalimantan Province and Berau Regency from 2018 to 2022. The GRM study indicated that the transportation and warehousing sector experienced significant development, along with education services, health services, social activities, and other services. On the other hand, the Shift-Share analysis demonstrated positive growth in nearly all sectors within Berau Regency. Based on Location Quotients (LQ) analysis, the most competitive industries in the region include mining and quarrying, agriculture, forestry, and fisheries; wholesale and retail trade; car and motorcycle repair; transportation and warehousing; accommodation, food, and beverage provision; educational services; health services and social activities; and other services. This study emphasizes the ability of Berau Regency to effectively utilize its natural resources, particularly in the growing agricultural and tourism sectors. Hence, to advance and stimulate the tourism sector, the Berau Regency administration should contemplate allocating funds for agricultural and tourism development in its regional budget and executing infrastructure improvements. This approach is anticipated to bolster the economic development of Berau Regency while enhancing its residents' overall quality of life.

Keywords: *Economic Potential, Growth Ratio Model, Shift Share, Location Quotient*

INTRODUCTION

The direction of development policy based on the peculiarities or potential of a region is also known as the endogenous development approach. This approach is becoming increasingly important in the context of local economic development. Local governments and stakeholders should utilize the resources that are readily accessible in their area to facilitate sustainable economic development. This method entails the identification and cultivation of the distinct capabilities of a specific region, such as its natural resources, local industries, or cultural assets.

Effective planning and suitable policies are crucial for the success of this endogenous development method. Todaro and Smith (2020) suggest that the success of economic development can be measured through three basic values. First, the development of people's ability to meet their basic needs, such as food, housing, and education, all of which are important indicators that indicate the success of economic development. Second, increasing the sense of self-worth of individuals and communities can create a more positive and productive

environment. Third, increasing people's ability to vote, which includes participation in development processes, creates a foundation for sustainable and inclusive development.

However, it is important to remember that economic development that focuses on material aspects should not be separated from moral development and religious values in society (Al Fozaie, 2023). Societies that have a strong moral foundation can help maintain the sustainability of economic development by reducing the risk of adverse behavior or social conflict. Therefore, economic development that goes hand in hand with its people's moral and cultural development can strengthen the basis of sustainable economic development and have a positive impact in the long run (Zheng et al., 2021).

GRDP (Gross Regional Domestic Product) is one of the important indicators that reflects the success of development and the level of people's welfare from a macroeconomic perspective. GRDP measures the gross value added of all goods and services produced within the domestic territory of a region in a given period. Berau Regency in East Kalimantan Province possesses abundant natural resources with great potential. Nevertheless, this potential has not been fully used to enhance the well-being of society effectively. This is evident in the significant decrease in the economic growth of Berau Regency. The economic growth rate in 2012 stood at 15.47 percent; however, it declined to -1.70 percent in 2016 (Statistics Indonesia, 2017). The decline can be attributed mostly to fluctuations in the world economy, which adversely affected the mining and quarrying sectors. This sector plays a significant role in the economic structure of the Berau Regency. Berau Regency suffered a more pronounced contraction in economic growth in comparison to numerous other districts/cities in East Kalimantan Province. The Gross Regional Domestic Product (GRDP), measured at constant prices, has undergone a substantial decrease in 2020, reaching a level even lower than that observed in 2016. Hence, this matter is of utmost urgency and demands significant attention, particularly from policymakers, to enhance the economic conditions of East Kalimantan and Berau in the forthcoming years.

The GRDP Growth Rate of Berau Regency based on constant prices during 2018 – 2022, can be seen in the following table:

Table 1. GRDP Growth Rate of Berau Regency based on constant prices

Year	GRDP Growth
2018	2.07
2019	5.63
2020	-3.32
2021	5.36
2022	3.95

Source: Central Bureau of Statistic-East Kalimantan in Figures, 2023

The GRDP data of Berau Regency, as presented in Table 1, offers crucial information for analyzing the economic potential to enhance regional development. The table displays the Gross Regional Domestic Product (GRDP) growth rate of Berau Regency in recent years, calculated using constant prices. (Statistics Indonesia, 2023). In 2020, there was a significant decline of -3.32 percent, which can be attributed to various factors, including the impact of the COVID-19 pandemic that has harmed economic sectors around the world. However, the data shows improvement in the following years, with GRDP growth of 5.36 percent in 2021 and 3.95 percent in 2022. This increase in growth illustrates the economic recovery potential of Berau Regency and shows the relevance of identifying sectors that contribute to such growth as well as how to harness the potential of the local economy to support further development. By looking at changes in the composition of economic sectors and factors affecting GRDP growth, an analysis of economic potential can help identify opportunities for further economic development and potential sectors that may need to be

strengthened. Therefore, this GRDP data is a solid basis for conducting an in-depth analysis of improving economic development in the Berau Regency to achieve sustainable growth and better community welfare.

Development problems are complex challenges that affect the gap between expected development achievement and reality. In the context of the Berau Regency, these problems can be divided into two main categories: first, problems related to the determination of priorities and targets for regional development. The importance of identifying and prioritizing sectors that have the highest economic potential is critical to achieving sustainable growth (Todaro & Smith, 2020) h. Second, there are issues related to the administration of local government affairs. This includes efficiency in the use of budgets, good development planning, and appropriate decision-making to support economic growth and community welfare.

Meanwhile, strategic issues are a crucial aspect of planning development in the Berau Regency. These issues relate to untapped potential and challenges that may arise in the future. Strategic issues at the global level, such as climate change and international trade, affect the economic potential of regions (Krugman et al., 2018). National-level strategic issues, such as energy policy and investment, also play an important role in local economic development (Li & Li, 2020). In addition, regional-level strategic issues, such as infrastructure and human resource development, need to be managed effectively to utilize regional development potential (Asheim et al., 2009). In addressing these issues, collaboration with various parties, including the central government, local government, and the private sector, is key to achieving sustainable economic growth in the Berau Regency.

THEORETICAL BACKGROUND

• *Economic Development*

Economic development is the process of transforming low-income, primitive country economies into advanced industrial economies. Although the term is sometimes used synonymously with economic growth, its main definition is a change in a country's economy that includes both qualitative and quantitative improvements (Krueger & Myint, 2023). Economic development includes increasing real income per capita in the long run and improving the institutional system. This process is multidimensional and involves economic growth and efforts to increase per capita income, reduce income inequality, and reduce poverty. The economic development of a country also requires fundamental changes to the social structure, behavior of society, and institutional systems.

• *Economic Growth*

The process through which a country's wealth rises over time is known as economic growth (Cornwall, 2023). The phrase is frequently used while talking about how the economy is doing right now, but in the context of economic theory, it typically refers to a rise in wealth over a long period. Comparing economies over different periods is necessary to measure economic growth rates. It is significant to note that changes in production prices and economic activity levels typically cause changes in national income. Changes in the structure of the economy for the better will increase economic activity, while the assessment of national income according to current-year prices will show the rate of change in production prices.

• *Theory of Basis Economy*

According to Tarigan (2005), the volume of exports a nation produces determines the rate of economic growth. This theory contends that a sector's capacity to satisfy local demand and even export its goods to other countries is a good indicator of its productivity. In other words, the sector does not depend only on local demand. Due to differences in resources and geographical locations, each region has a competitive advantage in several areas of the economy. If the economic activities resulting from this advantage can be

optimized to generate positive growth, this sector can become the main base that supports economic growth in the region.

- **Structural Change**

Structural Change Theory is a concept that focuses on the process of changing the economic structure of a country. The theory of structural change focuses on changing economic structures in developing countries that used to depend on the conventional sector, namely agriculture, into countries that rely on more modern sectors, namely the industrial and service sectors. According to Todaro and Smith (2020), a shift in the economic structure of a country is considered a significant change when the contribution of the manufacturing industry to national income exceeds the contribution of the agricultural sector. This process of economic transformation marks a major change in the economic structure of a country.

- **Leading Sector**

To determine the leading sectors, it is necessary to make comparisons regionally and nationally. A sector can be considered the leading sector of a region if it can produce exports compared to the same sector in other regions (Silalahi, 2011). Compared to other sectors in the area, the leading sector has greater growth opportunities.

METHODOLOGY

The study employs the Growth Ratio Model (GRM), Shift Share, and Location Quotient (LQ) as the analytical tools. The primary data included in this research are the Gross Regional Domestic Product (GRDP) data of Berau Regency and East Kalimantan Province, spanning the period from 2018 to 2022.

Growth Ratio Model Analysis (GRM) is a tool used to classify the GRDP growth of a sector in a smaller area (regency) compared to a larger region (province) (Sari & Rahmawati, 2018). The results of this analysis describe potential economic sectors and their growth criteria both at the regency level and at the provincial level. The two approaches used in GRM analysis are as follows:

- Berau Regency Growth Ratio (GRs)

$$GRS = \frac{\Delta E_{ij} / E_{ij}(t)}{\Delta E_{iR} / E_{iR}(t)} \dots\dots\dots (1)$$

- Growth Ratio of the territory of the Prov. East Kalimantan (GRr)

$$GRr = \frac{\Delta E_{iR} / E_{iR}(t)}{\Delta ER / ER(t)} \dots\dots\dots (2)$$

Where:

- ΔE_{ij} = Changes in GRDP sector i in Berau Regency (final year (t + n) – initial year (t))
- $E_{ij}(t)$ = GRDP sector i in the initial year (t) in Berau Regency
- ΔE_{iR} = Changes in GRDP sector i (final year – early year) in East Kalimantan Province
- $E_{iR}(t)$ = GRDP sector i in the initial year (t) in East Kalimantan Province

ΔER = Total change in GRDP (end-of-early years) East Kalimantan Province

$ER(t)$ = Total GRDP in the initial year (t) in East Kalimantan Province

Shift-share is a tool used to analyze changes in the economic structure of a region compared to regional economies. The purpose of this analysis is to determine the economic performance of a region compared to larger regions, both regional and national (Tarigan, 2005). This analysis groups three main causes of changes in the economic structure of a region, namely the influence of national growth (N) or share, the influence of industrial mix (M) or proportional shift, and the influence of competitive advantage (C), which is called differential shift or regional share. Shift-Share analysis can be formulated as follows:

$$D_{ij} = N_{ij} + M_{ij} + C_{ij} \dots \dots \dots (3)$$

Where:

D_{ij} = Changes in GRDP sector i in Berau Regency

N_{ij} = Changes in sector i GRDP in Berau Regency in contributing to the growth of East Kalimantan GRDP

M_{ij} = Changes in sector i GRDP in Berau Regency in contributing to sector i GRDP growth in East Kalimantan Province

C_{ij} = Competitive advantage of GRDP sector i in Berau Regency

To identify economic sectors that are the base or leading sectors in a particular region, the Location Quotient (LQ) is the right analytical tool to use. This analysis compares the function of particular sectors in a region's economy to the function of comparable sectors on a larger scale, both at the regional and national levels. This research allows for identifying economic sectors that exhibit a high degree of specialization or serve as key sectors with a substantial influence on the regional economy (Tarigan, 2005). This research enables a comprehension of the magnitude of a sector's contribution to regional economic growth and its capacity to facilitate regional development. The Location Quotient (LQ) formula is as follows:

$$LQ_{ij} = \frac{E_{ij} / E_j}{E_{in} / E_n} \dots \dots \dots (4)$$

Information:

LQ_{ij} = Coefficient Location Quotient

E_{ij} = GRDP sector i in Berau Regency

E_j = Total GRDP in Berau Regency

E_{in} = GRDP sector i in the East Kalimantan Province

E_n = Total GRDP of East Kalimantan Province

If $LQ > 1$, it shows that sector i is the leading sector or economic base in the Berau Regency, which means that the sector has a significant impact on the economy of the East Kalimantan province. Conversely, if $LQ < 1$, it signifies that sector i has lower specialization compared to the national or provincial level and is not

the dominant sector in the regional economy. Because the data used in this study is more than one year, the average calculation of LQ values must be carried out. Thus, LQ helps in identifying sectors that have the potential to support regional economic growth and regional development.

FINDINGS AND DISCUSSION

FINDINGS

Table 2. Average results of Berau Regency Growth Ratio Model (GRM) Analysis for 2018-2022

Business Field/Sector	GRr	GRs
(A) Agriculture, Forestry and Fisheries	0.526238	-0.710538-
(B) Mining and Quarrying	0.8846429	-1.600823+
(C) Processing Industry	0.3304819	-1.520937+
(D) Electricity and Gas Procurement	3.2279624	+0.668854-
(E) Water Proc., Waste Management, Waste, and Recycling	2.6710931	+0.982847-
(F) Construction	2.036531	+0.416168-
(g) Wholesale and Retail Trade; Car and Motorcycle Repair	1.9456562	+0.848112-
(H) Transportation and Warehousing	1.0964178	+1.044734+
(i) Provision of Accommodation and Food and Beverages	1.3657192	+0.907886-
(J) Information and Communication	3.7127821	+0.872575-
(K) Financial Services and Insurance	2.0924449	+0.7197-
(L) Real Estate	0.4522722	-2.073197+
(M, N) Company Services	0.8024579	-1.146626+
(O) Govt. Adm, Defense, and Compulsory Social Security	1.1086241	+0.490142-
(P) Educational Services	1.486582	+1.42679+
(Q) Health Services and Social Activities	5.651625	+1.206217+
(R, S, T, U) Other services	1.3298315	+1.036968+

Source: data processed, 2023

The GRM test results in Berau Regency for 2018 – 2022 are grouped into 4 classifications as follows:

1. In the first classification, where the value of GRr and GRs > 1, the sector shows high growth both at the Berau Regency level and in East Kalimantan province, so these sectors are called dominant sectors. Sectors included in this classification are transportation and warehousing with GRr (1.09) and GRs (1.04), education services with GRr (1.46) and GRs (1.42), health services and social activities with GRr (5.65) and GRs (1.20), other services with GRr (1.32) and GRs (1.03).
2. The second classification, where the value of GRr > 1 while GRs < 1, means that the growth of the sector in the Berau regency is lower than the growth in the same sector in the East Kalimantan region. The sectors included in this classification are, electricity and gas procurement with GRr (3.23) and GRs (0.67), water procurement, waste management, waste and recycling with GRr (2.67) and GRs (0.98), construction with GRr (2.03) and GRs (0.41), wholesale and retail trade, car and motorcycle repair with GRr (1.94) and GRs (0.84), provision of accommodation, food and beverages with GRr (1.36) and GRs (0.91), information and communication with GRr (3.71) and GRs (0.87), financial services and insurance with GRr (2.09) and GRs (0.72), government administration, defense and compulsory social security with GRr (1.11) and GRs (0.49).

3. The third classification, where $GR_r < 1$ but $GR_s > 1$, shows that the sector has higher growth in the Berau Regency, but lower at the East Kalimantan provincial level. Sectors included in this classification are mining and quarrying with GR_r (0.88) and GR_s (1.60), processing industry with GR_r (0.33) and GR_s (1.52), real estate with GR_r (0.45) and GR_s (2.07), and company services with GR_r (0.80) and GR_s (1.15).
4. In the fourth classification, where both GR_r and GR_s values have a value smaller than one, then the sector is interpreted as having low growth both in East Kalimantan Province and Berau Regency, the sector included in this classification is agriculture, forestry, and fisheries with GR_r (0.52) and GR_s (0.71).

Table 3. Calculation of Regional Share (Nij), Proportional Shift (Mij) Differential Shift (Cij) and Dij

Business Field	Nij	Mij	Cij	Dij
(A) Agriculture, Forestry and Fisheries	235769.8	11070.8	-35913.8	210926.8
(B) Mining and Quarrying	1481276	116926.4	787318.9	2385521
(C) Processing Industry	97088.28	2863.013	16714.74	116666
(D) Electricity and Gas Procurement	963.2501	277.4446	-1029.65	211.0496
(E) Water Proc., Waste Management, Waste, and Recycling	983.6221	234.437	-45.0662	1172.993
(F) Construction	93601.71	17009.19	-111292	-680.698
(g) Wholesale and Retail Trade; Car and Motorcycle Repair	149931.8	26029.67	-44308.2	131653.3
(H) Transportation and Warehousing	123139.9	12047.13	6039.695	141226.7
(i) Provision of Accommodation and Food and Beverages	23186.09	2825.516	-2916.85	23094.76
(J) Information and Communication	26173.17	8670.909	-12382.5	22461.54
(K) Financial Services and Insurance	11720.27	2188.268	-6874.09	7034.448
(L) Real Estate	21461.43	866.0984	10416.88	32744.41
(M, N) Company Services	2245.122	160.7574	264.1641	2670.043
(O) Govt Adm., Defense, and Compulsory Social Security	24830.3	2456.264	-14035.1	13251.46
(P) Educational Services	58558.79	7767.651	37153.13	103479.6
(Q) Health Services and Social Activities	22286.03	11238.67	25973.53	59498.23
(R, S, T, U) Other services	15406.53	1828.143	757.399	17992.07

Source: data processed, 2023

The shift-share analysis of Nij and Mij values for all sectors in the Berau Regency indicates a positive contribution of these sectors to the regional growth in East Kalimantan Province. The Mij Berau Regency demonstrates positive value in each sector, indicating that the business field makes a good contribution to the corresponding sector at the provincial level. The GRDP of Berau Regency is expected to surpass the GRDP growth rate of East Kalimantan Province. Moreover, the computation of Cij reveals that seven sectors exhibit positive signs, specifically mining and quarrying; processing industry; transportation and warehousing; real estate; corporate services; education services, health services, and social activities. This indicates that these sectors possess a competitive edge or experience accelerated growth in comparison to their counterparts in East Kalimantan Province. Conversely, the remaining sectors do not possess a competitive advantage. The Dij value indicated positive trends in nearly all sectors, except the construction sector. This implies that 16 business sectors in Berau Regency showed growth, while the construction sector had a decline.

Table 4. Results of *Location Quotients* Analysis of Berau Regency 2018-2022

Business Field	2018	2019	2020	2021	2022	Average
A. Agriculture, Forestry, and Fisheries	1.4253505	1.39071	1.36099	1.35189	0.5177531	1.209338778
B. Mining and Quarrying	1.3184363	1.30347	1.31078	1.33519	2.3196249	1.517498764
C. Processing Industry	0.1946527	0.20195	0.2084	0.19185	0.4379933	0.246968474
D. Electricity and Gas Procurement	0.6963997	0.70329	0.67375	0.64518	0.5722077	0.658166244
E. Water Proc, Waste Management, Recycling	0.8506054	0.85177	0.861	0.83714	0.6572735	0.811558626
F. Construction	0.54072	0.5504	0.50646	0.47797	0.3264791	0.480405538
G. Wholesale and RT; Car and Motorcycle Repair	1.1361252	1.11734	1.13339	1.08375	0.5388993	1.001899854
H. Transportation and Warehousing	1.7169178	1.71136	1.77389	1.76436	0.8004119	1.553386735
I. Provision of Accommodation and F&B	1.1023236	1.08609	1.11045	1.07458	0.6557416	1.005836197
J. Information and Communication	0.6974545	0.69154	0.69243	0.66508	0.3706423	0.623431175
K. Financial Services	0.3343644	0.33607	0.33147	0.31545	0.4067627	0.344822567
L. Real Estate	0.9859305	0.98317	0.99409	0.99348	0.9417827	0.979688787
M, N. Corporate Services	0.4844454	0.4849	0.47437	0.47822	0.382933	0.460973735
O. Govt Adm, Defense, and Compulsory Social Security	0.6122837	0.59996	0.59238	0.56993	0.1983966	0.514590185
P. Education Services	1.675039	1.66146	1.69966	1.68845	0.9732688	1.539574741
Q. Health Services and Social Activities	1.60661	1.61138	1.60738	1.67077	1.0780463	1.514837428
R, S, T, U. Other Services	1.1763957	1.15123	1.16761	1.14514	0.9187591	1.111826668

Source: data processed, 2023

Table 4’s Location Quotient analysis reveals that the agriculture, forestry, and fisheries sectors; mining and quarrying; wholesale and retail trade; car and motorcycle repair; transportation and warehousing; provision of accommodation, food, and beverages; educational services; health services and social activities; and the other services sectors are consistently classified as base sectors with an LQ value greater than 1 from 2018 to 2022. This outcome indicates that the Gross Regional Domestic Product (GRDP) growth rate of the sector in Berau Regency surpasses the growth rate of the identical sector in the overall economy of East Kalimantan Province.

DISCUSSION

Growth Ratio Model (GRM)

First Classification (Growth Dominant)

Positive GRr and GRs values indicate growth dominance. Michael Porter in his theory of competitive advantage explains that factors such as product differentiation, efficient production costs, and market focus

can affect sector growth (Porter, 1985). The sectors included within this category are transportation and warehousing, education services, health services, social activities, and other services. The expansion of these sectors can be attributed to the adoption of new technologies, improved human capital through education, and the implementation of government policies that promote sustainable practices (Martínez-Peláez et al., 2023; Renelt, 1991).

Second Classification (Prominent Growth in Provinces)

Economic geography theory explains how location, market interactions, and economies of scale can affect growth in a given region (Fujita et al., 1999; Rossi-Hansberg, 2019). This classification includes sectors such as electricity and gas procurement, water procurement, waste management, waste and recycling, construction, wholesale and retail trade, car and motorcycle repair, accommodation, food, and beverages provision, information and communication, financial services and insurance, government administration, and defense and compulsory social security. The growth of these sectors can be influenced by various elements such as climatic conditions, market access, government support, infrastructure support, trade rules, and energy policy.

Third Classification (Prominent Growth in Berau Regency)

Resource-Based View (RBV) theory emphasizes the role of unique resources in shaping competitive advantage (Barney, 1991; Lisnawati & Gunarto, 2021). Mining and quarrying, processing industry, real estate, and corporate services, show that these sectors are potential sectors to be developed in Berau Regency. Unique natural resources and mining policies and other supportive sectors such as the corporate services sector, and the processing industry sector explain the higher local growth than the province's.

Fourth classification (not prominent)

Product life cycle theory (Vernon, 1966) explains how sectors can experience different growth at different stages of their life cycle. The decrease in primary industries covering agriculture, forestry, and fisheries could be attributed to technological advancements, shifts in market preferences, or foreign influences such as trade policies (Audretsch et al., 2021).

Shift Share

Positive Growth in Various Sectors (Nij and Mij Values)

The results of the analysis show that the Nij and Mij values of all sectors in the Berau Regency show positive results, which means that sectors in the Berau Regency contribute positively to regional growth in East Kalimantan Province. The value of Mij Berau Regency in each sector is also positive, meaning that the business field has a positive contribution to the same sector at the provincial level. It can be said that the GRDP of Berau Regency will grow higher than the GRDP growth of East Kalimantan Province.

This positive growth confirms that Berau Regency's revenue growth will surpass East Kalimantan Province. Endogenous Growth Theory (Romer, 1990) states that economic growth can be explained by internal factors such as human capital, technology, and innovation. The increase in the value of Nij and Mij in the Berau District may be due to high investment in education, training, research, and development, which has an impact on increasing the productivity of these sectors (Alali, 2011; Hanushek & Woessmann, 2010; Ozturk, 2001)

Competitive Growth (Cij Value)

Cij's calculation shows only seven business fields marked positively, namely mining and quarrying;

processing industry; transportation and warehousing; real estate; corporate services; education services; health services and social activities, and other services. This may reflect certain competitive advantages within these sectors in the Berau Regency. In Economic Agglomeration Theory, growing sectors may benefit from economic agglomeration. For example, the growth of the mining sector may support the growth of related sectors such as the manufacturing industry, transportation and warehousing, real estate, corporate services, education services, health services, and social activities. This synergistic effect can result in greater growth in these sectors.

Dominating Positive Growth (Dij Value)

All business fields showed positive Dij values, except for the construction sector. This means that 16 business sectors in Berau Regency are progressing, while the construction sector is in a regressing position. This phenomenon needs to be further analyzed to determine the right strategy to increase growth. Endogenous Growth Theory emphasizes the role of internal factors in determining economic growth. Several key elements of this theory can explain the predominant positive growth in the Berau Regency:

1. Investment in Human and Physical Capital:

Broad growth in a variety of sectors may reflect significant investments in human capital (e.g., education and training) and physical capital (e.g., infrastructure). This leads to increased productivity and efficiency in various sectors (Autor, 2014; Lucas, 1988).

2. Innovation and Technology:

The development and adoption of new technologies may have driven growth in these sectors. Technology can improve production efficiency and provide access to new or niche markets.

3. Economies of Scale:

Growth in some sectors can create economies of scale, where increased production reduces the average cost of production. This encourages more growth and competition within domestic and international markets.

4. Government Policy and Business Environment:

Government policies that support business growth, such as tax incentives, business-friendly regulation, or support for research and development, may have contributed to broad growth.

5. Interaction and Dependence between Sectors:

Growth in one sector might stimulate growth in another through spill-over effects. For example, growth in the mining sector may have supported other sectors such as construction and transportation.

Through the view of endogenous growth theory, the dominating positive growth in Berau Regency is the result of interrelated internal factors, including investment in human and physical capital, technological innovation, economies of scale, supportive government policies, and interactions between sectors.

Location Quotient (LQ)

Based on the results of Location Quotient (LQ) calculations, it can be identified that agriculture, forestry, fisheries; mining and quarrying; wholesale and retail trade; car and motorcycle repair; transportation and warehousing; provision of accommodation and food and beverages; educational services; health services and social activities; and other services in Berau Regency are classified as base sectors. $LQ > 1$ in these

sectors indicates that Berau District has a comparative advantage in these sectors compared to East Kalimantan as a whole. Competitive advantage theory explains that regions should focus on sectors where they have higher relative efficiency. In this context, the Berau Regency has abundant natural resources, so it can be said to have advantages in the mining and quarrying sector for further exports and investment in this sector. Porter (1985) suggests that competitive advantage in a region can be understood through the analysis of three competing forces. The increase in LQ value in the mining and quarrying sector may be explained by factors such as:

1. *New Competitor Threats*: Access to natural resources and government regulation may limit new competitors, increasing the advantage for existing ones.
2. *Bargaining Power of Suppliers*: The relationship between suppliers and mining companies may benefit Berau Regency, allowing access to resources cost-effectively.
3. *Substitution Product Threat*: Global price fluctuations may affect demand for mining products, which needs to be monitored.

The fact that agriculture, forestry, and fisheries sectors; wholesale and retail trade; car and motorcycle repair; transportation and warehousing; provision of accommodation, food, and beverages; educational services; health services and social activities; and other services have an $LQ > 1$, this could be driven by increasing investment in human capital. Endogenous Growth Theory (Romer, 1990) emphasizes the importance of knowledge and innovation in economic growth. So, these advantages may indicate the potential for further development in terms of innovation and human resource development. It can be said that an investment in education is an investment in human capital. The high LQ value in this sector in Berau District can be reflected:

1. *Education Investment*: Increased investment in education that has been placed by the government or private sector.
2. *Education Outcomes*: There are direct links between improved access and quality of education and economic growth, such as increased productivity and innovation.

Other service sectors include various services such as health, entertainment, and others. A high LQ value within the sector may indicate that there is strong local demand for these services. The concept of product differentiation (Chamberlin, 1962) is relevant here, emphasizing that regions might develop unique services that fit local needs and preferences. Economic geography theory emphasizes the importance of regional specialization. The high LQ value in the Other Services sector in Berau District can be understood as:

1. *Regional Specialization*: A particular concentration of specialized services that meet local needs, such as specialty health services or tourism.
2. *Regional Development*: The relationship between specialization and economic growth, where increased local demand or specialization can drive growth.

CONCLUSION

The Growth Ratio Model (GRM) analysis revealed that the transportation and warehousing sector, education services, health services, social activities, and other services saw significant growth. This can be attributed to various sources, including the emergence of new technology, government rules that promote sustainable practices, and investments in health and education infrastructure. These factors, such as climate, market access, infrastructure support, and trade rules, also impact this condition.

According to the Shift-Share results, nearly all sectors in Berau Regency had positive growth. This indicates the positive impact on the revenue of Berau Regency and affirms that the rise of Berau Regency's revenue will exceed that of East Kalimantan Province. The rise in the value of Mij in Berau District can be attributed

to substantial investments in education, training, research, and development, resulting in enhanced productivity within these sectors.

Based on the analysis of Location Quotients (LQ), the sectors of agriculture, forestry, and fisheries; mining and quarrying; wholesale and retail trade; car and motorcycle repair; transportation and warehousing; provision of accommodation and food and beverages; educational services; health services and social activities; and the other services sector have LQ value greater than 1, which suggests a relative competitive advantage in the region. The Berau District possesses the capacity to further advance the mining and quarrying industry, bolstered by its distinctive natural resources. The education services industry exhibits significant growth potential, indicating opportunities for investment in education and human resource development. Other service sectors reflect strong local demand for services.

RECOMMENDATION

The Berau Regency, characterized by predominantly forested areas devoid of human habitation, presents a viable opportunity for the establishment of oil palm plantations. In addition, natural, maritime, and cultural features hold great appeal for both international and domestic tourists. Derawan Island, Maratua, Sangalaki, and Biduk-Biduk are renowned locations with vast marine and tourism prospects. In addition, there are Segah and Kelay Districts, which, despite their lack of seaside location, are renowned for their exceptional natural tourism potential in inland regions. The Regional Spatial Plan of Berau Regency 2016–2036 mandates the ongoing development of the agricultural and tourism sectors, covering both land and sea tourism. Furthermore, comprehensive and coordinated efforts will be made to develop other sectors, taking into account the potential and prospects available in the Berau Regency.

Berau Regency's tourism industry is expected to become dominant, with a focus on contributing significantly to economic growth, notably in the sectors of lodging, food, and drinks. The Berau Regency administration can allocate funds for the development of tourism in its regional budget and improve infrastructure to facilitate the expansion and promotion of the tourist industry. Increased development of infrastructure is expected to lead to the flourishing of the tourism industry and ultimately improve the welfare of the residents of Berau Regency.

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