Identification of Potential Sectors for Tolitoli Regency in the Period 2019-2023

Original Article

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Abstract

The objective of this research is to examine the primary industries that could drive economic development in Tolitoli Regency during 2019-2023. Through the application of Location Quotient (LQ) and Shift-Share Analysis (SSA), this study investigates the competitive strengths of key sectors and their patterns of growth. LQ is utilised to pinpoint the industries that are most prevalent in the region, while SSA evaluates the impact of each sector on changes in Regional Domestic Product (RDP). The findings of the analysis shed light that the Agriculture, Forestry, and Fisheries sector, as well as the Information and Communication sector, display significant LQ scores of 2.09 and 1.89, indicating robust local comparative advantages. These sectors show better growth compared to the national average, despite some local challenges. Conversely, the Mining and Quarrying and Manufacturing sectors show low LQs and are declining, both nationally and locally. These finding reveal a portrait of the sectors that require more attention in terms of policies supporting infrastructure development, technology, and human resource capacity to enhance local competitiveness. This study is expected to enhance regional economic policies by employing data-driven strategies to identify key sectors with the potential to support long-term economic development.

Keywords: Economic Growth, Leading Sectors, Location Quotient, Regional Economic Policy, Shift-Share Analysis.

1. Introduction

Enhancing the social and economic well-being within regions with abundant natural resources and existing development gaps is largely dependent on regional economic development. It is essential to identify sectors with high competitiveness in order to create policies that can facilitate sustainable economic progress. In Tolitoli Regency, it is crucial to analyse economic sectors with promising potential in order to stimulate rapid economic advancement, particularly between 2019 and 2023. The Regional Domestic Product (RDP) serves as a key indicator for evaluating the contribution of each sector to the region's economy, offering insight into the sectors that are pivotal for driving economic expansion. This analysis is important for understanding which sectors can reduce economic disparities at the local level and enhance regional competitiveness (Hongzhong et al., 2023; Masnawaty et al., 2023).

Based on existing research, fiscal policies that focus on local conditions have been proven to stimulate significant economic growth. Hongzhong et al. (2023) fiscal policies that focus on local conditions have been proven to stimulate significant economic growth. Fei et al. (2024). It also emphasises that policies supporting local entrepreneurship and leading sectors play an important role in improving regional economic resilience. Thus, an analysis of sectors

with comparative advantages in Tolitoli Regency is needed as a basis for formulating relevant policies to encourage the development of these sectors.

The main issue in this study lies in identifying the sectors with the greatest potential to drive regional economic growth. To that end, this study applies the Location Quotient (LQ) method to identify sectors with higher concentration in Tolitoli Regency compared to the provincial or national level. According to Nurulhuda *et al.*, (2021), LQ makes it possible to identify leading sectors that have advantages at the local level. Sectors with an LQ greater than 1 show great potential for growth and can make a significant contribution to the regional economy. In addition, Shift Share Analysis (SSA) is used to evaluate the factors that influence sector growth, with the aim of determining whether this growth is driven by national economic trends or by competitive advantages at the local level (Yulianti *et al.,* 2023).

Policies should focus on sectors that have advantages based on high LQ values, such as agriculture, forestry, and fisheries, which contribute significantly to regional GDP. High LQ values in these sectors indicate that they are more competitive than other sectors. Fei et al. (2024) states that policies should focus on sectors that have advantages based on high LQ values, such as agriculture, forestry, and fisheries, which contribute significantly to regional GDP. High LQ values in these sectors indicate that they are more competitive than other sectors. According to Maspaitella and Parinussa (2021), the manufacturing sector can grow more rapidly if it is given stimulus in the form of policies that support infrastructure development and product quality improvement.

There are also other industries that necessitate specific focus, such as the tourism industry, which is anticipated to have a significant impact on enhancing the local economy in a lasting way (Lubis et al., 2025). Research by Wijijayanti et al. (2020) emphasises the significance of ecotourism in driving economic growth in countryside regions. In addition, sustainability-based tourism can introduce the potential of local nature and culture while preserving the environment. This sector needs to be encouraged through an approach based on the involvement of local communities, so that the benefits can be felt directly by the community (Ciolac et al., 2022).

Earlier studies have also mentioned that the agricultural industry can bring about beneficial economic and social outcomes for rural areas. Research by Voronkova et al. (2019) shows that sustainable agricultural practices not only support food security, but also improve social and environmental conditions in rural areas. Therefore, policies that support sustainable agriculture are very important to strengthen regional economic resilience and reduce social inequality. Conversely, the focus should be on enhancing production capacity and implementing more advanced technology in order to improve competitiveness within the manufacturing industry (Maspaitella & Parinussa, 2021).

The aim of this research is to present a thorough analysis of the key industries that could boost the economy in Tolitoli Regency, and to suggest policy changes using a more organised approach to data and analysis. This study introduces a fresh approach by merging two analytical techniques, Location Quotient (LQ) and Shift Share Analysis (SSA), to gain a better understanding of sectors that could flourish and positively impact the local GDP. Thus, this study is expected to assist policymakers in formulating more targeted and sustainable sector development policies. The scope of this study is limited to sectors included in the GRDP data of Tolitoli Regency from 2019 to 2023, and aims to provide clear guidance for the development of priority sectors in the future.

2. Literature Review

2.1. Gross Regional Domestic Product (GRDP)

Gross Regional Domestic Product (GRDP) is a macroeconomic indicator that plays an important role in the process of development policy planning, establishing development directions, and evaluating the development results of a region. Changes in GRDP are influenced by fluctuations in prices and production volumes. These changes impact the contribution of each sector's value added to the total RDP. If there is imbalance in the growth of different sectors, resulting in some sectors outpacing others, there will eventually be notable shifts in how much each sector contributes to the Regional Domestic Product (RDP). This evolution in the economy is referred to as economic structural transformation. Takalumang et al. (2018) states Gross Regional Domestic Product (GRDP) refers to the combined value of goods and services produced by all businesses in a particular area over a set period of time. It is a measure of the economic activity within a specific region (Negara & Putri, 2020).

2.2. Economic growth

Economic growth is the ongoing transformation of a country's economic conditions towards a more advanced level over a specific period. Furthermore, it can also be viewed as a rise in an economy's ability to produce goods and services, resulting in a higher national income. The presence of economic growth is a key sign of effective economic progress (Hutapea et al., 2020)

2.3. Regional Economic Development

Local authorities and communities collaborate to oversee the utilization of resources and form alliances with businesses, with the goal of generating employment and fostering economic advancement within a specific area. Moreover, regional economic development involves the establishment of innovative institutions, the diversification of industries, and the enhancement of the workforce's abilities to manufacture superior products and services. The main aim of this initiative is to broaden the range of job opportunities within the region. To achieve this, local governments and communities must collaborate and take initiative in jointly managing both natural and human resources (Siburian, 2021).

2.4. The Economic Base Theory

The economic base theory suggests that the prosperity of a region is closely linked to the industries where they have a competitive edge, also referred to as core sectors. These core sectors are industries that manufacture goods or offer services to sell beyond the region's borders, bringing in revenue from external sources. The income obtained from these base sectors then drives the growth of non-base sectors through the multiplier effect mechanism, which creates demand for goods (Cokro et al., 2025).

2.5. Leading Sectors

According to Masruri et al. (2021) leading sector is a branch of the economy or a specific type of business that shows more promise, performance and potential compared to other sectors. It is believed to have the ability to stimulate other related economic activities and contribute to the growth of the region. Leading sectors are sectors that have the ability to assist economic development. Key sectors are the drivers of the economy, referred to as the leading sectors of a region's economy. Thus, the economy can be understood as the structure of the economy, and can be seen as a characteristic aspect of an economy (Maghfiroh, 2021).

2.6. Previous Research

Investigation by Rizaldy and Asnani (2024) titled 'Analysis of Determination and Policy of Development Strategy for the Basic Sector of West Coast Regency,' this study utilises Location Quotient (LQ) and Shift Share (SS) analysis tools to achieve its objectives. The research findings reveal that eight economic sectors function as the foundation of the regional economy, with the top three sectors based on LQ values on agriculture, forestry, and fisheries in first place; followed by government administration, defence, and social security in second place; and the real estate sector in third place. Furthermore, the Shift Share analysis identified five sectors showing positive performance between 2020 and 2021. Notably, this positive trend is evident in the education services sector and the health and social services sector, both of which are identified as base sectors. Consequently, regional development initiatives in West Coast Regency can be effectively guided by policy strategies focused on developing marine agroecotourism zones.

Pakaya et al. (2023) research titled 'Analysis of the Basic Sector and Sectoral Competitiveness and Its Relationship to Labour Absorption in Gorontalo Regency,' the objective of this study is to identify the basic economic sectors in Gorontalo Regency and to examine the impact of sectoral competitiveness on labour absorption in the region. The findings of the study bring to light eight key sectors which consist of: agriculture, forestry, and fishing; mining and excavation; production; electricity and gas distribution; building; transport and storage; information and communication; and financial and information services. Using the Shift Share (SS) technique, particularly focusing on the Proportional Shift element, for the timeframe between 2018 and 2022, it was noted that a number of sectors exhibited sluggish expansion rates. These sectors encompass agriculture, forestry, and fishing; mining and excavation; building; transport and storage; real estate; professional services; and government administration, defense, and mandatory social security. By taking into account the previously mentioned studies, a new framework can be established.
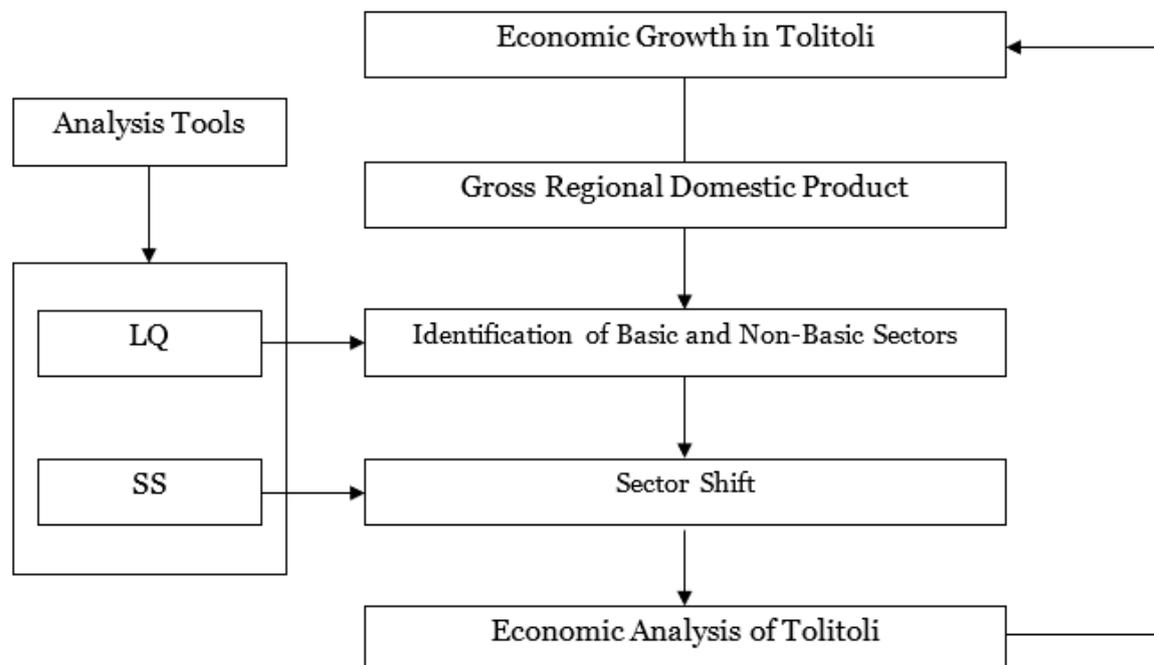

Figure 1. Conceptual Framework

3. Methods

3.1. Type of Research

The descriptive method is a research approach that aims to systematically and accurately describe the characteristics of a phenomenon, population, or specific situation that is currently occurring. This method is not intended to test hypotheses or seek cause-and-effect relationships, but rather to present a factual, detailed, and systematic description of the object being studied (McCombes, 2023)

3.2. Data Sources

This research utilises quantitative and secondary data, with data collection being carried out through the acquisition of processed data supplied by the appropriate organisation, specifically the Central Statistics Agency (BPS) of Central Sulawesi Province. The information is obtained from the Central Statistics Agency (BPS), and the study centres on the Gross Regional Domestic Product (GRDP) as well as different economic sectors. The data encompasses GDP statistics spanning from 2019 to 2023.

3.3. Analysis Tools

3.3.1. Location Quotient (LQ) Analysis Tools

Location Quotient analysis was chosen because it is a simple yet effective analytical tool for describing the economic structure of a region. This method is also useful for identifying potential import substitution industries or products that have the potential to be developed as export goods. In addition, Location Quotient helps determine leading sectors that are worthy of further analysis. This instrument is used to pinpoint and construct the structure and fluctuations in the fundamental industries of a certain area by using Regional Domestic Product (RDP) figures as a gauge of the area's economic expansion (Maghfiroh, 2021). The formula for calculating LQ is as follows:

$$LQ = \left(\frac{Ei/Et}{Ni/Nt}\right)$$

Description:
In the Location Quotient (LQ) analysis, the following variables are used:
Ei: GRDP of sector i at the Tolitoli Regency level
Et: Total GRDP of all sectors at the Tolitoli Regency level
Ni: GRDP of sector i at the Central Sulawesi Province level
Nt: Total GRDP of all sectors at the Central Sulawesi Province level

Interpretation of LQ Values:
• LQ > 1: Indicates that sector i has a greater proportion or concentration in the region than at the national level. This indicates that the sector is a regional base or leading sector.
• LQ = 1: Indicates that sector i has a concentration level equivalent to the national level. This sector is neutral and does not show comparative advantage.
• LQ < 1: Indicates that sector i has a lower concentration than the national level. This indicates that the sector has not developed significantly in the region.

Through the LQ approach, local governments and policymakers can identify priority sectors that have comparative advantage potential. This information is useful for designing more effective and focused economic development strategies in line with the economic characteristics of the region.

3.3.2. Shift Share (SS) Analysis Tools

The technique of shift-share analysis is a method employed in economic analysis to pinpoint the progress of a specific area. This strategy assesses the economic framework, shifts in dominant sectors across two different time frames, and the status of a region's economic sectors in comparison to a broader area. It is founded on the basic premise that the economic expansion or value added of a region (Dij) is impacted by three key interconnected elements: Regional Share (the regional growth component) Nij, sectoral growth or Proportional Shift (Mij), and regional competitiveness growth referred to as Differential Shift (Cij) (Kasikoen, 2018).

To determine the extent of changes in Regional Domestic Product (RDP) in sector or sub-sector i in a region (e.g. district), the following formula can be used:

$$Dij=Nij+Mij+Cij \text{ .... (1)}$$

Explanation:

Dij = Total change in GRDP of sector/subsector i in Tolitoli Regency

Nij = Component of change caused by general economic growth in the reference area of Central Sulawesi Province

Mij = Component of change caused by growth of sector i in Central Sulawesi Province

Cij = Component of change indicating the competitive advantage of sector i in Tolitoli Regency

These three components are calculated using the following formula:

$$Nij = Eij.rn \text{ .... (2)}$$
$$Mij = Eij (rin-rn) \text{ .... (3)}$$
$$Cij = Eij (rij-rin) \text{ .... (4)}$$

Description:

Eij: GRDP value of sector/subsector i in the region studied in the initial year,

rn: Total economic growth rate of the reference region (province/national),

rin: Growth rate of sector i in the reference region,

rij: Growth rate of sector i in the observed region (district).

4. Results and Discussion

4.1. Result 1 about figures

The main objective of this research is to examine the key industries that could aid in the advancement of the economy in Tolitoli Regency between the years 2019 and 2023. Utilising Location Quotient (LQ) and Shift Share Analysis (SSA), the findings reveal which sectors play a crucial role in the Gross Regional Domestic Product (GRDP) and have prospects for fostering regional economic growth in the future.

4.1.1. LQ Analysis

Location Quotient (LQ) is a useful tool for assessing the level of industry concentration in a specific region compared to the national average. When applied to Tolitoli Regency in Central Sulawesi Province, LQ highlights the sectors that are most competitive in the area. This analysis offers valuable information on which industries hold the greatest promise for fostering long-term economic development in the region. Below are the LQ findings for Tolitoli Regency.

Table 1. Results of Location Quotient (LQ) Calculations for Toli-Toli Regency for 2019-2023

Business Field	2019	2020	2021	2022	2023	LQ Mean	Desc
Agriculture, Forestry, and Fisheries	1,76	1,93	2,04	2,25	2,44	2,09	Basis
Mining and Quarrying	0,13	0,10	0,10	0,10	0,10	0,11	Non-Basis
Manufacturing	0,10	0,09	0,08	0,07	0,06	0,08	Non-Basis
Electricity and Gas Supply	0,87	0,95	1,01	1,10	1,17	1,03	Basis
Water Supply; Waste Management, Wastewater Treatment, and Recycling	2,27	2,39	2,53	2,81	3,02	2,61	Basis
Construction	1,15	1,19	1,13	1,23	1,37	1,22	Basis
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	1,16	1,27	1,32	1,45	1,56	1,36	Basis
Transportation and Warehousing	1,61	1,80	1,92	1,86	1,99	1,84	Basis
Accommodation and Food Services	1,43	1,59	1,62	1,75	1,86	1,65	Basis
Information and Communication	1,57	1,72	1,83	2,08	2,25	1,89	Basis
Financial and Insurance Services	1,76	1,90	2,02	2,24	2,41	2,07	Basis
Real Estate	1,71	1,86	1,98	2,14	2,27	2,00	Basis
Business Services	0,85	0,93	1,00	1,09	1,18	1,01	Basis
Public Administration, Defence, and Compulsory Social Security	1,79	1,97	2,06	2,28	2,51	2,13	Basis
Education Services	1,59	1,73	1,86	2,05	2,2	1,90	Basis
Health and Social Services	1,13	1,23	1,31	1,47	1,58	1,35	Basis
Other Services	2,10	2,29	2,47	2,70	2,91	2,50	Basis

The results of the Location Quotient (LQ) calculations for Tolitoli Regency for the period 2019 to 2023 as shown in Table 1 provide a clear picture of the economic sectors that have comparative advantages in this region. Some of the most prominent sectors show LQ values consistently above 1, with the water supply, waste management, and recycling sector exhibiting very high LQ values, averaging 2.61. This is followed by the agriculture, forestry, and fisheries sector, with an average LQ of 2.09. Next is the information and communication sector, with an average LQ of 1.89, followed by the wholesale and retail trade; motor vehicle and motorcycle repair sector, which has a relatively high LQ of 1.36. Lastly, the construction sector also showed an LQ value greater than 1, with an average LQ of 1.22. Conversely, the mining and quarrying sector had a very low LQ, with an average of only 0.11, and the manufacturing sector also showed a low LQ value, with an average LQ of only 0.08.

In general, industries like Agriculture, Forestry, and Fishing, Water Supply, Waste Management, and Recycling, and Information and Communication, which have LQ values above 1, are more concentrated in Toli-Toli District and have strong potential for development. These sectors are crucial for boosting the local economy and should be promoted further with helpful policies. On the other hand, sectors with low LQ, such as Mining and Quarrying and Manufacturing, require special attention to improve local conditions and increase the competitiveness of these sectors so that they can contribute more to the regional economy.

4.1.2. SS Analysis

The outcomes of the Shift Share Analysis (SSA) offer a detailed insight into the movements of economic sectors in Tolitoli Regency from 2019 to 2023. This examination dissects the impact of economic shifts into National Share (Nij), Proportional Shift (Mij), and Differential Shift (Cij) components. When these components are combined, they generate Dij, which represents the overall influence of the sector on changes in the region's GRDP. National Share (Nij) shows how much of the economic sector's growth in Tolitoli Regency is caused by overall national economic growth. If Nij is positive: It means the sector grew due to general

national factors for example, Indonesia's economy in general is growing. If Nij is negative: It means the sector grew more slowly or even declined, following a sluggish national trend.

Nij reflects the effect of national growth, not due to local strengths. Proportional Shift (Mij) shows whether the national sectoral structure supports the growth of the same sector in Tolitoli Regency. If Mij is positive: It means the sector is indeed growing rapidly at the national level (for example, the national agriculture or trade sector is booming), thus providing an additional boost for the same sector in Tolitoli. If Mij shows a negative value, it indicates a slowdown or decrease in the sector on a national level, which is not good for the sector's growth in Tolitoli. Mij is an indicator of whether the sector is experiencing growth nationally. The Differential Shift (Cij) represents how competitive a specific sector in Tolitoli Regency is compared to the same sector at a national level, showing its strengths or weaknesses. If Cij is positive: It means the sector grew faster in Tolitoli than at the national level, indicating strong local competitiveness (for example, due to local resources, human capital, or regional policies). If Cij is negative: It means the sector is less competitive compared to the same sector in other regions nationally. Cij shows the contribution of local factors whether Tolitoli has a competitive advantage in that sector.

Table 2. Shift Share (SS) Calculation Results for Toli-Toli Regency for the Years 2019-2023

No	Economic Sector	Nij (National Share)	Mij (Proportional Shift)	Cij (Differential Shift)	Dij (Nij+Mij+Cij)
1	Agriculture, Forestry, and Fisheries	1211,08	-1037,70	-18,83	154,55
2	Mining and Quarrying	60,79	18,39	-88,03	-8,85
3	Manufacturing	70,68	125,05	-190,09	5,63
4	Electricity and Gas Supply	1,03	-0,52	-0,09	0,41
5	Water Supply, Waste Management, Wastewater Treatment, and Recycling	7,02	-5,46	-0,72	0,85
6	Construction	338,32	-210,38	-115,36	12,57
7	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	247,13	-135,05	-23,19	88,89
8	Transportation and Warehousing	151,98	-165,64	-32,76	-46,41
9	Accommodation and Food Services	17,01	-9,13	-2,79	5,10
10	Information and Communication	160,39	-60,35	10,23	110,28
11	Financial and Insurance Services	90,20	-52,62	-4,45	33,14
12	Real Estate	74,22	-44,63	-8,56	21,03
13	Business Services	5,09	-3,76	-0,06	1,28
14	Public Administration, Defence and Compulsory Social Security	265,17	-222,96	1,75	43,96
15	Education Services	142,01	-122,45	-1,95	17,61
16	Health and Social Services	39,96	-23,53	-0,15	16,28
17	Other Services	39,69	-26,98	-0,72	12,00
	GRDP	2921,78	-1977,71	-475,75	468,32

The findings Shift Share (SS) calculation results for Toli-Toli Regency for 2019-2023 on Table 2 indicate that the Agriculture, Forestry, and Fisheries industry in Tolitoli Regency has a significant Nij value of 1211.08, showcasing a better growth rate than the country's average.

Although this sector shows a positive contribution in Nij, local factors reflected in Mij (-1037.70) and Cij (-18.83) indicate significant obstacles in the development of this sector at the regional level. However, the positive Dij result (154.55) indicates that this sector still has potential to grow if policy support and local factors can be optimised. Therefore, although this sector has a national advantage, strengthening at the local level is essential to maximise its contribution.

Conversely, the Mining and Quarrying sector in Tolitoli Regency has shown less encouraging performance. With a relatively low Nij value (60.79), this sector is growing more slowly than the national average. Although there is a positive contribution from Mij (18.39), this sector is experiencing a significant decline at the local level, reflected by a highly negative Cij value (-88.03). The negative Dij result (-8.85) also indicates that the sector is declining both nationally and locally, requiring a comprehensive evaluation of the local factors hindering this sector.

Meanwhile, the Manufacturing industry is experiencing varied outcomes. Despite having a Nij value (70.68) below the national average, this sector is not expanding as quickly as others. Despite this, the Mij contribution (125.05) suggests that this industry is more competitive compared to similar sectors nationally. Nevertheless, the negative impact of Cij (-190.09) shows that local factors do not support the development of this sector. The positive Dij result (5.63) indicates that despite some obstacles at the local level, this sector still shows potential for growth.

The Transportation and Warehousing sector has performed poorly, with a Nij value (151.98) showing better results than the national average. However, this sector is experiencing a significant decline both at the national level (Mij -165.64) and at the local level (Cij -32.76), as reflected in the negative Dij result (-46.41). This decline indicates that the sector faces major challenges that need to be addressed, both in terms of infrastructure and regional policy.

The Information and Communication sector in Tolitoli Regency shows positive results with a Nij value (160.39) higher than the national average. In addition, the positive contribution from Cij (10.23) indicates support from local factors that benefit this sector. With a highly positive Dij result (110.28), this sector has proven to be strong at both the national and regional levels, reflecting great potential to continue growing with the right policy support.

Overall, sectors such as Information and Communication and Wholesale and Retail Trade show good performance and have the potential to continue developing as leading sectors in Tolitoli Regency. The Mining and Quarrying sector and the Transportation and Warehousing sector need more attention in terms of strengthening local factors that hinder their performance. With the right policy strategies to support leading sectors and address existing obstacles, Tolitoli Regency can maximise its economic potential.

4.2. Discussion

The examination of the Location Quotient (LQ) and Shift Share Analysis (SSA) offers a detailed look at the industries that are likely to be at the forefront in Tolitoli Regency from 2019 to 2023. By combining these two approaches, we can gain insight into the economic sectors that have a strong presence in the region and are experiencing growth.

4.2.1. Leading Sectors with Local Competitive Advantage and Positive Growth

The Agriculture, Forestry, and Fisheries sector, along with the Information and Communication sector, demonstrated highly favourable outcomes in both the LQ and SSA evaluations. According to the LQ, these sectors consistently exhibited values above 1, with the Agriculture, Forestry, and Fisheries sector at 2.09 and the Information and Communication sector at 1.89. An LQ value greater than 1 indicates that these sectors have a higher

concentration in Tolitoli Regency compared to the national level, signifying a comparative advantage that may enable these sectors to develop further in the region.

Morrissey (2016) state that sectors with high LQ values often become the main focus in formulating industrial policies and cluster analysis within the context of regional economic planning. The Agriculture, Forestry, and Fisheries industry, which has a consistently rising LQ value, is crucial for boosting the GRDP of Tolitoli Regency. Nevertheless, the SSA analysis shows that this sector still faces local challenges. Mij (-1037.70) and Cij (-18.83) indicate obstacles in the development of this sector at the local level. Habib and Mukhlis (2024) emphasise that sectors with high LQ values, although possessing great potential, often face both external and internal constraints that require special attention in terms of natural resource management and the strengthening of local policies.

On the other hand, the Information and Communication sector shows very positive results with a Nij value (160.39) higher than the national average, and a positive Dij (110.28), indicating strong local support. These findings are consistent with the research by Dzemydaitė (2021), which states that LQ is an effective tool in formulating smart specialisation strategies that strengthen regional economic resilience and drive innovation in leading sectors. With the ongoing development of information and communication technology, this sector will continue to be a leading sector in Tolitoli Regency. Therefore, policies that support the development of technological infrastructure and access to information will be crucial to maintaining the sustainability of this sector. Policies supporting these sectors can focus on funding for the agricultural sector and the utilisation of information technology to optimise existing potential. This will ensure that these sectors become the main pillars of inclusive and sustainable economic growth in Tolitoli Regency.

4.2.2. Leading Sectors with Local Potential Hindered by External Challenges

The Water Supply, Waste Management, Waste, and Recycling sector shows a very high LQ value (average of 2.61), indicating that this sector has a higher concentration in Tolitoli Regency compared to the national level. This sector holds significant potential to support regional economic growth. However, the results of the SSA analysis reveal notable challenges, with a negative Mij value (-5.46) and a negative Cij value (-0.72), although the positive Dij (0.85) indicates that this sector still makes a positive contribution to the regional economy.

Pominova et al. (2022) notes that sectors with high LQ but negative Mij and negative Cij values often face both external and internal constraints, which hinder their growth despite having great potential. In this case, the Water Supply, Waste Management, Waste, and Recycling sector requires policies that focus more on the efficient management of natural resources and the environment. Research by Meyer and Niyimbanira (2021) shows that sectors with high LQ must prioritise environmental sustainability and innovation in waste management to ensure continued development. Therefore, strengthening policies in this sector is crucial, especially through collaboration between the public and private sectors to create more efficient management systems.

4.2.3. Potential Sectors with Increasing Local Competitiveness

The Manufacturing sector has a low LQ (average of 0.08), indicating that this sector is still underdeveloped in Tolitoli Regency. Nevertheless, the SSA analysis shows a positive Mij (125.05), suggesting that this sector is more competitive at the local level compared to the national level. However, the negative Cij (-190.09) indicates that the sector faces significant local challenges in terms of infrastructure and industrial support.

Maspaitella and Parinussa (2021) emphasises that although the LQ of this sector is low, SSA can reveal increasing local competitiveness, indicating that the sector has significant

potential to grow with the right policy support. Therefore, the Manufacturing sector requires support in terms of infrastructure, workforce skills training, and investment in technology. Yulianti et al. (2023) shows that local industrial development policies based on innovation and increased production capacity are essential to enhance the competitiveness of this sector.

4.2.4. Sectors Requiring Strengthening of Local Competitiveness to Enhance Growth

The Mining and Quarrying industry in Tolitoli Regency has a very low LQ of 0.11, suggesting that it is not a major sector compared to the national average. The SSA analysis indicates that this industry is declining both nationally and locally, with a negative Dij value of -8.85.

Pominova et al. (2022) states that sectors with low LQ, which possess abundant natural resources, often require more focused policies to enhance local competitiveness. In this case, the Mining and Quarrying sector needs a comprehensive evaluation of natural resource management policies to optimise its existing potential. Research by Zakaria and Hasan (2023) also emphasises the importance of managing resource-based sectors to ensure these sectors can contribute more significantly to the local economy. Therefore, this sector requires policies that can improve the efficiency of natural resource management, as well as the strengthening of infrastructure and technology to enhance the competitiveness of the sector.

5. Conclusion

The investigation examines the key industries that could boost the economy in Tolitoli Regency from 2019 to 2023 through the application of Location Quotient (LQ) and Shift Share Analysis (SSA) techniques. Findings indicate that the Agriculture, Forestry, and Fisheries sector, along with the Information and Communication sector, possess noteworthy competitive strengths and opportunities for growth within the region. Despite the potential shown by these sectors, various obstacles persist locally, specifically in relation to infrastructure and the management of natural resources.

Sectors with low LQ, such as Mining and Quarrying and Manufacturing, require special attention regarding resource management and technological investment to improve their competitiveness. These findings indicate that policy strategies focusing on infrastructure development, sector funding, and human resource strengthening are essential to maximise the contribution of these sectors to regional economic growth.

This study contributes to regional knowledge by integrating LQ and SSA as analytical tools to identify key sectors and their challenges. The findings can serve as a foundation for formulating more effective and data-driven economic policies at the local level. Future research may explore the impact of specific policies on sectoral growth and conduct longitudinal analyses to observe long-term changes in regional economic structure.

6. References

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