Article

Analyzing the Regional Leading Sectors with Location Quotient and Its Effect on Economic Growth in Aceh Jaya, Indonesia

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Abstract: Unlike the North-East of Aceh region was previously an industrial zone and shifted to the service sector and agriculture. The central-southeast area remains in the plantation zone. Then in 2002, this region split into 4 districts namely Nagan Raya, Aceh Jaya, Simeulue and West Aceh districts. This study aims to analyze the potential of the regional superior sector in West Aceh Regency and its expansion area using Location Quotient analysis, or abbreviated as LQ, towards a sustainable economy in the new normal era. The data used is secondary data sourced from the central statistical agency of each district and province of Aceh. The gross regional domestic product data for the period 2010-2020 is 17 sectors. The results showed that the highest LQ value in Simeulue district was 2.18 for the government administration sector, then 1.51 for the agriculture, forestry and fishery sectors. For information, this district excels in lobster cultivation. Next is Nagan Raya district with an LQ of 2.88 in the mining/excavation sector and 1.52 in the agriculture/plantation sector. This value is obtained because this district excels in mining C and oil palm plantations. Then Aceh Jaya with an LQ of 1.81 in the construction sector and 1.55 in the transportation sector because this area is superior in terms of tourism. Finally, Aceh Barat district with an LQ value of 1.59 for the financial/information services sector. Meanwhile, in the agriculture/forestry sector it was 1.17 because this district excels in financial services and is the largest city on the south west coast of Aceh. The leading sectors above must still be managed properly, especially local potentials while still paying attention to a sustainable environmental economy. This is not an exaggeration considering that in this new normal era, the economy must continue to rise even during the COVID-19 pandemic while still adhering to health protocols.

Keywords: Location quotient; leading sector; sustainable development; new normal.

1. Introduction

Economic development is a process that seeks to increase income, both total income and per capita income, accompanied by an increase in the population and the income distribution of the population in a country. The purpose of a country's economic development is to improve people's welfare. Community welfare can occur through increasing the country's economic growth through equal distribution of income for the residents of the country concerned which is obtained from the Gross Regional Domestic Product (GRDP) of a region, or the Gross National Product (GNP) of a country. Economic growth is an economic problem in the long term and will always be faced with a dilemma. A number of countries in the world often use economic growth as a standard to measure the success of a country's economic development (http://erepo.unud.ac.id).

Furthermore, Indonesia's economic growth, overall, in 2019 remained good, reaching 5.02%, although lower than the 2018 achievement of 5.17% (www.bps.go.id). This shows that economic growth does not always increase but fluctuates because it is influenced by other factors. Aceh's economy in 2019 as measured by Gross Regional Domestic Product (GRDP) at current prices reached Rp. 164.21 trillion or US$ 11.61 billion. Meanwhile, GRDP per capita reached 30.70 million and GRDP without oil and gas was Rp. 158.55 trillion or US$ 11.21 billion (https://acehprov.go.id). West Aceh Regency is one of the old districts in the South-West region of Aceh Province with 3 (three) divisions, which include Nagan Raya Regency, Aceh Jaya Regency and Simeulue Regency. Furthermore, in the last 2 (two) years the economic growth rate in agriculture and plantations in West Aceh Regency reached 3.91 percent in 2017, and 3.91 percent in 2018. Likewise, the achievements of the other 3 (three) districts.

According to the Central Statistics Agency (BPS) in 2017 that one of the leading economic sectors currently in West Aceh Regency is the agricultural and trade sector. For agriculture includes rice fields and oil palm plantations. As for trade, the leading sectors are grocery stores, coffee shops and the food/beverage industry. While the less superior sector is the processing industry. Meanwhile, the LQ value of the agricultural sector still dominates, namely 1.17 in 2016 and 1.19 in 2018. Nagan Raya Regency is 1.52. Aceh Jaya Regency is 1.07 and the LQ value in the same sector in Simeulue Regency is 0.35. This value is obtained by comparing the GRDP of 17 sectors between the GRDP of the province and each district in the research area. On the basis of Figure 1, the economic growth in Aceh Province fluctuates every year. The highest economic growth occurred in 2006 at 7.70%. This is because the province is actively carrying out rehabilitation and reconstruction after the earthquake/tsunami disaster. Furthermore, the lowest economic growth occurred in 2005 at 1.22% because this province had just been hit by the natural disaster of the earthquake and tsunami.

Furthermore, in terms of regional classification, this province is divided into three regions, namely North East, Central Southeast and South West. In the 1980s until the 2000 millennium era, the development conditions of the North East Region were superior to other areas in Aceh Province. The reason is that there are a number of giant factories in the fields of gas/petroleum, fertilizer, paper industry and other industries that make this area an industrial area. One of them is the Asean Aceh Fertilizer (PT.AAF) fertilizer factory which is owned by several Asean countries. In addition, there is also the Iskandar Muda Fertilizer Factory (PT.PIM), gas/petroleum industries such as PT. Arun and PT. Exxon Mobil, a paper factory namely Aceh Kraft Paper (PT. KKA) and other factories. Furthermore, it is supported by its strategic location where almost every district and city capital lie along the national road which is a fairly good access to the neighboring province of North Sumatra.

The Southeast Central Region is an area where the development of facilities, both physical and non-physical, is far behind compared to the North East region. The main reason is that this area is a forest and plantation area which is mostly less productive. Likewise, the South West region is an agricultural zone but is still on a small scale. The following is data on economic growth by region in this province. In 2012-2016, the lowest economic growth in the North East region of Aceh Province occurred in North Aceh Regency and Lhokseumawe City until it was below 0 (zero) percent. While the highest in the city of Banda Aceh. As the capital of Aceh Province that emphasizes Islamic public services and tourism, this city has continued economic growth until it reached 6,315 in 2016. Furthermore, for the Southeast Central region of this province, the lowest economic growth rate in the last year occurred in Central Aceh Regency and the highest economic growth in Southeast Aceh Regency.

Meanwhile for the South West region of Aceh, the lowest economic growth rate occurred in Aceh Barat District in 2016 and the highest economic growth rate was achieved by the City of Subulussalam. The objectives of this research are as follows to analyze the perspective of the Location Quotient (LQ) value of the agricultural sub-sector in West Aceh Regency and its 3 (three) expansion areas.

2. Literature Review

2.1. Leading and Non-Leading Sectors

According to Tarigan (2004), the economic activities are grouped into basic and non-basic activities. In this case, only basic activities can encourage regionals economic growth. Furthermore, all other activities that are not included in the basic activities are categorized into service activities/sectors. However, to avoid misunderstanding the meaning of service, then this is called a non-base sector. The non-base (service) sector aims to meet local consumption. Based on the above understanding, the basic sector is the leading sector in a region. While the non-base sector is a sector that is less superior in the area.

2.2. Gross Regional Domestic Product (GRDP)

A sector classified as a superior or less superior sector can be measured according to the GRDP of a region by comparing it to the Gross National Product (GNP) nationally. In general, GRDP itself consists of 9 sectors, although in recent years it has become 17 sectors. The author uses time series data with 9 sectors consisting of: agriculture, mining/excavation, processing industry, electricity and drinking water, buildings, trade, hotels and restaurants, transportation, finance/insurance and services. Furthermore, for data from 2010 to 2019, the author uses 17 sector GRDP data. According to Statistik, (2017) GRDP is the amount of value added (value added) produced by all production units in one area, during a certain period. GRDP is closely related to economic growth. Economic growth is the overall increase in people's income that occurs in the region, namely the increase in all added value that occurs. The calculation of regional income is initially made in current prices. However, in order to see the increase from one period to the next, it must be expressed in real value, meaning that it is expressed in constant prices (Tarigan, 2004).

2.3. Economic Growth

The success of a country's economic development can be measured and described in general by the level of its economic growth rate. Some economists distinguish between economic development and economic growth. Economists who distinguish the two definitions define the term economic development as the income per capita of society, namely the growth rate of Gross Domestic Product/Gross National Product in a given year divided by the rate of population growth, or the development of Gross Domestic Product/Gross National Product that occurs in a country. accompanied by an overhaul and modernization of its economic structure (structural transformation). Meanwhile, economic growth is defined as an increase in Gross Domestic Product/Gross National Product regardless of whether the increase is greater or less than the population growth rate, or whether the expansion of the economic structure occurs or not (Argandoña, 2016; Ross & Murray, 2010).

Furthermore, Tarigan (2005) added economic growth is the increase in overall community income that occurs in the region, namely the increase in all added value that occurs. The calculation of regional income is initially made in current prices. However, so that the increase from one time period to the next can be seen, it must be expressed in real value, meaning that it is expressed in constant prices. According to Kuznets (2016) economic growth is a significant increase in national income in a certain calculation period. Then according to Schumpeter, economic growth is an increase in output (national income) caused by a natural increase in the rate of population growth and savings. Meanwhile, according to several development economists, economic growth is a term for developed countries to describe the success of their development. Then for developing countries, the term economic development is used. However, although the terms and definitions are different, what is certain is that economic growth can be seen by relating and calculating the level of national income from one period to the next (Tambunan & Sikumbang, 2011).

Regional economic growth is the increase in overall community income that occurs in the region, namely the increase in all added value that occurs. The calculation of regional income is initially made in current prices. However, in order to see the increase from one period to the next, it must be expressed in real value, meaning that it is expressed in constant prices (Tarigan, 2009). Jhingan (2007) explains that economic growth is a long-term increase in the ability of a country to provide more types of economic goods to its population, this ability grows in accordance with technological advances and the necessary institutional and ideological adjustments. Based on the description above, economic growth is an increase in GDP or output in the long term and is an important indicator in the success of economic development in a region.

In addition, Mankiw (2020) states that economic growth is one of the important indicators to see the success of economic development in a country in addition to other indicators such as unemployment rate, poverty rate, inflation rate, and so on. Rapid and stable economic growth is expected to have a positive impact either directly or indirectly on other economic variables. The economic growth is an increase in output in the long term, or an increase in the production of goods and services and is an important indicator in the success of a nation's economic development.

2.4. Regional Economic Development Towards Leading Sustainable Sector

According to Sukirno (2006) economic development is a series of efforts in an economy to develop its economic activities so that more infrastructure is available, more and more companies are developing, the level of education is getting higher and technology is increasing. opening wider job opportunities, increasing income levels and people's prosperity. Based on the description above, regional economic development will be well sustainable if an area can always utilize various leading sectors effectively and efficiently. Coupled with developing non-superior sectors of the region so as to be able to realize an independent region.

3. Materials and Methods

The scope of this research includes Gross Regional Domestic Product (GRDP) at Constant Prices in 2000 in Aceh Province and Aceh Barat Regency, Nagan Raya Regency, Aceh Jaya Regency and Simeulue Regency as well as the economic growth of Aceh Province during the period 2010-2020 or for 11 years. The data analysis model used in this study is quantitative analysis using secondary data sourced from the Central Statistics Agency for Aceh Province and 4 districts and the Development Planning Agency at Sub-National Level (Bappeda) in 4 districts. The data analysis model used is quantitative analysis using location quotient analysis. According to D. Tarigan & Sagian, (2015) Location Quotient (location quotient) or abbreviated as LQ is a way of quantifying how concentrated a particular industry is within an area as compared to the nation.

The formula is as follows:

$$LQ = \frac{\dfrac{X_1}{GRDP}}{\dfrac{X_1}{GNP}} \qquad (1)$$

Where: xi = added value of sector i in an area, GRDP = Gross Regional Domestic Product of the area, Xi = Value added of sector i nationally, GNP = Gross National Product, If LQ> 1, it means that the role of the base sector is more than that of the province.

a. Simple Linear Regression Analysis

According to Wahyuningsih, (2018) the calculation formula is as follows:

$$Y_i = a + bX_i + e \qquad (2)$$

Where, Yi: Economic growth, a: Intercept (constant), b: Factor Xi regression coefficient, Xi: LQ value of the leading sector per year in 4 district and e: Error term.

4. Results and Discussion

4.1. Analysis of Leading Sector in Aceh Barat District and Its Expansion Area

The leading sector analysis here is calculated using Location Quotient (LQ) analysis in each district from the expansion of West Aceh District, which includes Simeulue District, Nagan Raya District, Aceh Jaya District and West Aceh District. This calculation is done by comparing all sectors in the district against the province of Aceh.

4.1.1. Best Leading Sector in West Aceh District

Based on the GRDP data of 17 sectors in Aceh Barat Regency and Aceh Province obtained in the 2010-2020 period, it can be depicted in Figure 1. Figure 1 displays the financial and information services sector has the highest LQ score with a score of 1.65. The reason is that since 2010 several non-governmental organizations or Non-Government Organizations (NGOs) have completed their programs. Those who took part in the rehabilitation and reconstruction phase have ended. So that the district's economic conditions began to rise and improve. While the lowest LQ value in this sector is in 2020, where the Covid-19 pandemic has changed many things, so that the potential for villages or areas that must be managed and developed has decreased due to the impact of this outbreak. The next sector is the construction sector with an LQ value of 1.26. Finally, agriculture, forestry and fisheries sector with an LQ value of 1.17 which is the mainstay sector of this old district.
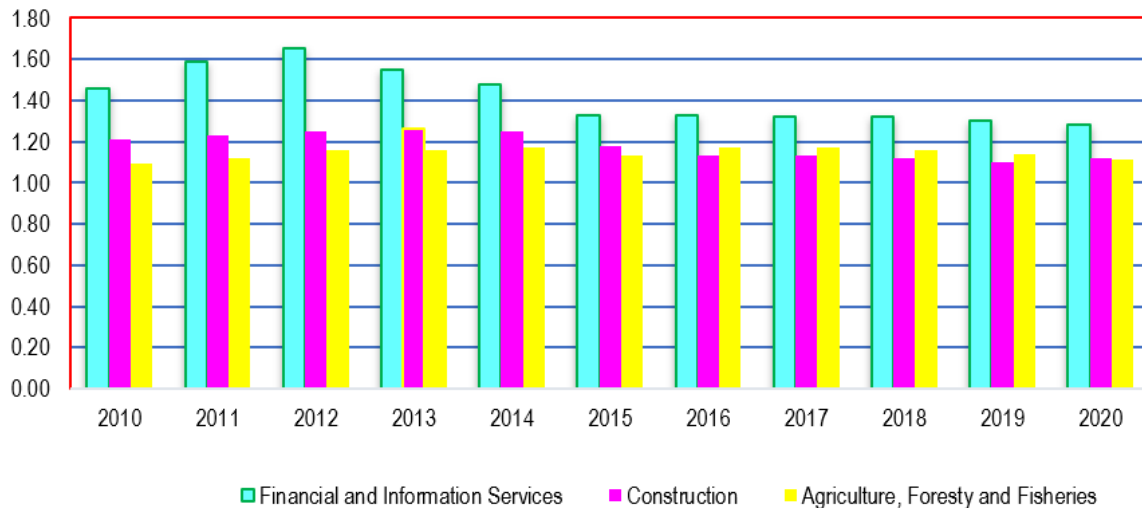
Figure 1. 3 Best Value of Leading Sector in West Aceh District 2010-2020.

4.1.2. Best Leading Sector in Simeulue Regency

Simeulue Regency is the initial district that was divided from West Aceh Regency. This district was born where the issue of regional autonomy is spreading in almost all regions in Indonesia. The LQ data can be seen in Figure 2.
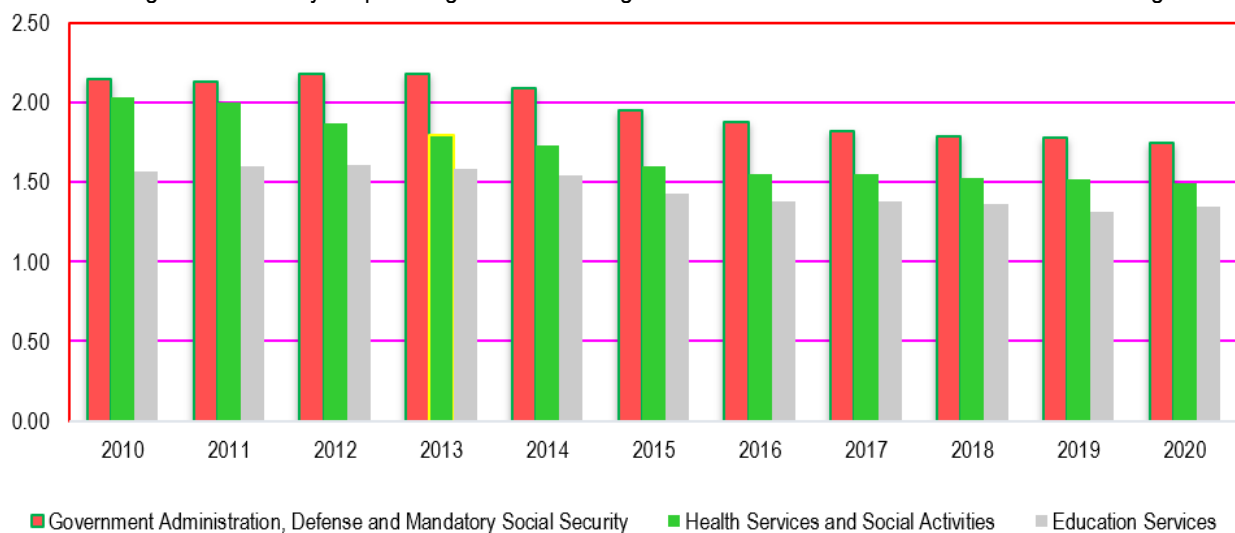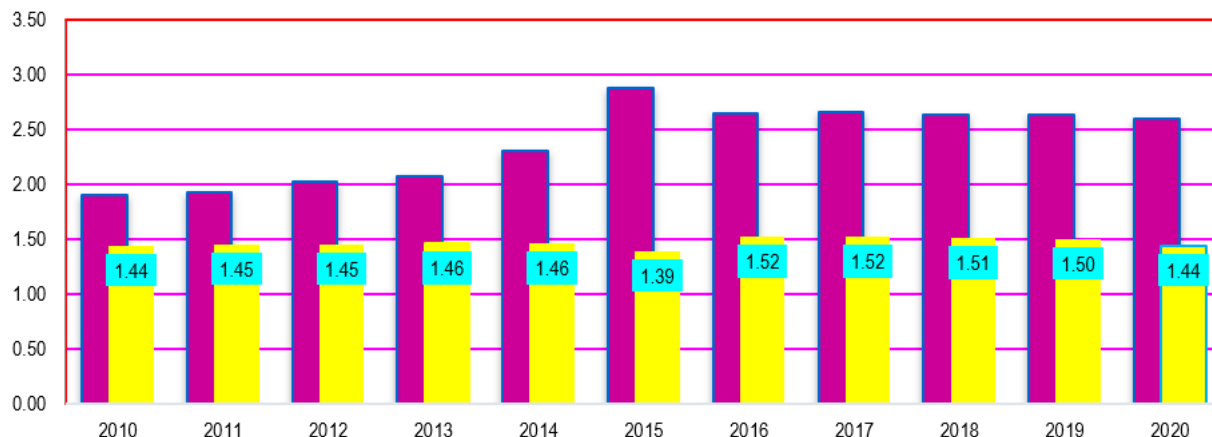

Figure 2. 3 Best Leading Sector in Simeulue Regency 2010-2020.

Figure 2 describes in the last 5 years after 2010, the highest LQ value was 2.18 in the government administration sector. Furthermore, the health sector with an LQ value of 2.03 and finally the education services sector where the lobster-producing district is being aggressively providing scholarships, especially for high school students to college students who want to continue their studies outside Simeulue Island, especially in the field of fisheries. This district is the best district in aquaculture.

4.1.3. Best Leading Sector in Nagan Raya District

Nagan Raya district formed its own district in the 2000s. This district is a rice field center in the South West (Barsela) coastal area of Aceh Province. The LQ value since 2010-2020 can be seen in the following graph 3:
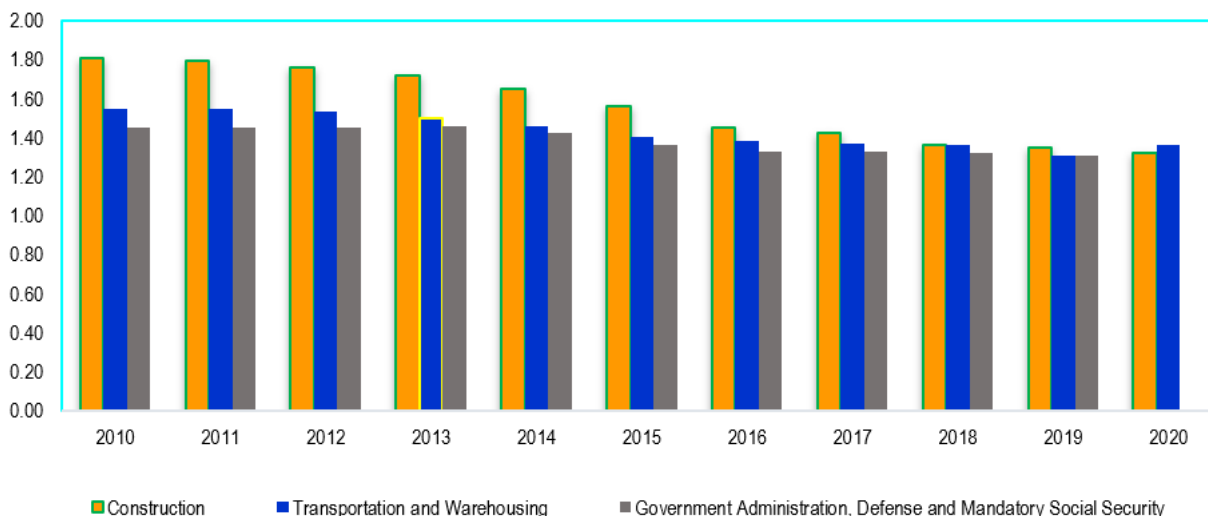
Figure 3. Best Leading Sector in Nagan Raya Regency 2010-2020.

In the era of the 2014s, this district exploited mines on a large scale in addition to having a jetty for coal exports. In addition, jade and sand are also exploited as mineral group C with the highest LQ value of 2.88. Furthermore, in the agricultural, forestry and fishery sectors with the highest LQ value of 1.52. The district is also permanently supported by the plantation sub-sector, particularly oil palm plantations, which are generally managed either individually or by companies.

4.1.4. Best Leading Sector in Aceh Jaya District

Aceh Jaya Regency is a district that is the same age as Nagan Raya Regency and was born in 2002. The LQ value can be seen in Figure 4.
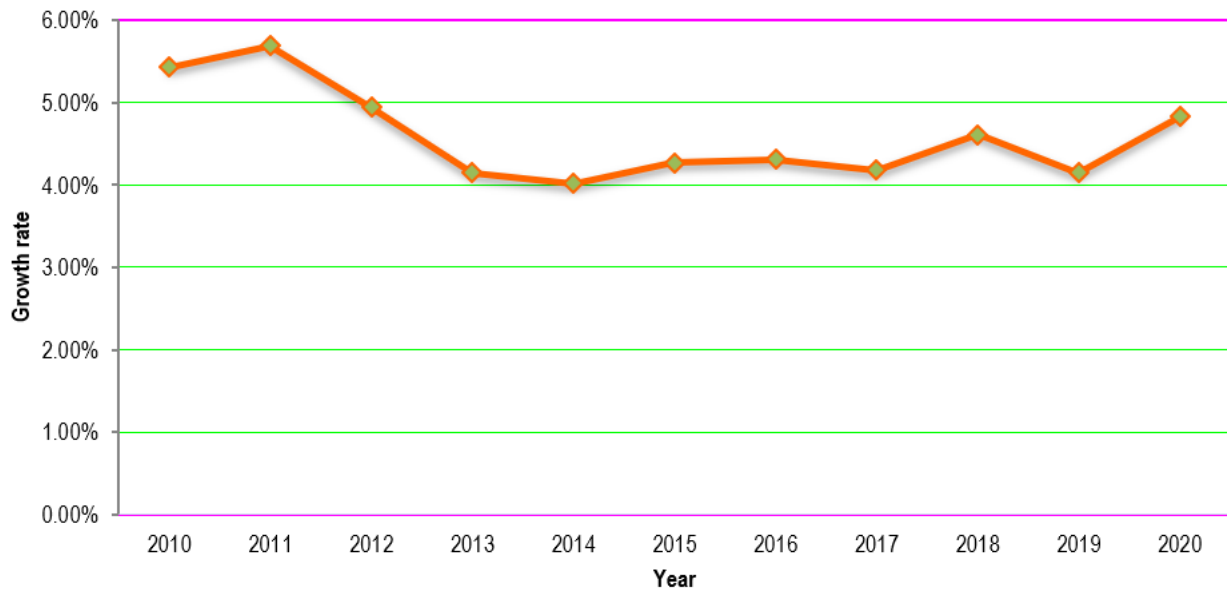

Figure 4. Best Leading Sector in Aceh Jaya Regency 2010-2020.

Figure 4 shows the construction sector has the highest score of 1.81 because this district is actively building infrastructure such as roads and bridges as well as offices and buildings. Furthermore, the transportation and warehousing sector with an LQ value of 1.56. This sector plays an important role because this district is a tourism district, both marine and religious tourism. The last is the administrative sector with an LQ value of 1.46 which includes the government administration, defense and social security sectors. However, generally, in 2019 it began to decline and decreased drastically in 2020 as a result of the Covid-19 pandemic. Currently (2021), communities in the 4 districts above are starting to manage sectors that are expected to improve the economy by constantly implementing health protocols. This is done while reducing environmental degradation towards a better new normal life.

4.1.5. Economic Growth of Aceh Province

The data on the economic growth of Aceh Province in the period 2010-2020 can be seen in Figure 5:

Figure 5. The Rate of Economic Growth in Aceh Province in 2010-2020.
Source: Central Bureau of Statistics of Aceh Province (July 2021).

Figure 5 above shows the highest economic growth in Aceh Province was 5.69 percent. This indicates that the province is starting to improve and return to normal life by managing these 17 sectors towards a better life. Based on LQ processing or analysis, it can be concluded that there are 3 best sectors for Aceh Barat district and its expansion area. This can be seen in the following Table 1:

Table 1. The 3 Best Leading Sectors in West Aceh Regency and Its Expansion Area in 2010-2020.

No	Year	Name of District	Top 3 Leading Sectors	Location Quotient
1.	2010-2020	West Aceh	1.Financial and Information Services	1.65
			2.Construction	1.26
			3. Agriculture, Forestry and Fisheries	1.17
2	2010-2020	Simeulue	1. Government Administration, Defense and Mandatory Social Security	2.18
			2. Health Services and Social Activities	2.03
			3. Education Services	1.58
3	2010-2020	Nagan Raya	1. Mining and Quarry	2.88
			2. Agriculture, Forestry and Fisheries	1.52
			3.-	-
4	2010-2020	Aceh Jaya	1. Construction	1.81
			2.Transportation and Warehousing	1.55
			3.Government Administration, Defense and Mandatory Social Security	1.46

Table 1 displays all the expansion areas of West Aceh Regency have their own specialization and uniqueness. For each district that has a specialization, especially the district that has the three best LQ scores, it can provide a distribution of income to the entire community in each district. This is done by utilizing natural resources managed by reliable human resources by avoiding environmental damage in this new normal era.

5. Conclusions

In conclusion, this study identified that the period 2010 to 2020, there are three best leading sectors in West Aceh Regency include financial services, construction and agriculture, forestry and fisheries. Meanwhile for the other three regencies are also not much different which includes agriculture, forestry, and fisheries, government administration, mining and quarrying. transportation and so on. The need for environmental defense-based management so that sustainable and environmentally sound economic development occurs in the new normal era as a result of the Covid-19 pandemic. Thus, this study suggests that role of the government of West Aceh Regency and its expansion area is very much needed in managing leading sectors. The government of West Aceh Regency and its expansion area should stipulate restrictions on the exploitation of mining and mineral group C. At this time, Nagan Raya Regency has only issued Jade stone. It aims to maintain environmental conditions in a sustainable manner.

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