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# Leading sector determinants as regional competitiveness in the maluku province of indonesia

SYAWAL ZAKARIA[1]

*Faculty of Economics, University of Darussalam Ambon, Indonesia*

*Email: walzakaria65@gmail.com*

**Abstract**

The Moluccas (Maluku) Province of Indonesia consists of an archipelago with rich natural resources on land and at sea. The potential for this large natural resource should have made this particular province more prosperous than other provinces in Eastern Indonesia, but the opposite has happened. This study aims to determine the leading sectors of regional competitiveness in Maluku Province, Indonesia. The analytical method used is Klassen Typology, Location Quotient (L.Q.), and Shift Share. The study results found three of the sixteen leading sectors had very high regional competitiveness: sector C of the Manufacturing Industry, G.I. Trade and Provision of Food and Beverage Accommodation, and H.J. Transportation. Meanwhile, the sector with the lowest regional competitiveness is Water Procurement, Waste Management, and Recycling. By determining the leading sector as regional competitiveness, it is hoped that it can become the basis for policy formulation by the Maluku Provincial Government to improve the welfare of the local community.

**Keywords**: *Natural resources, Leading Sector, Regional Competitiveness, Welfare, local community*

## INTRODUCTION

Indonesia is an archipelagic country because it has thousands of island clusters consisting of several large islands and tens of thousands of small islands combined with a vast diversity



**Corresponding Author**: ***Syawal Zakaria,,*** *Faculty of Economics, University of Darussalam Ambon, Indonesia*

of natural resource wealth that has become an attraction for other countries to invest in Indonesia. Indonesia is a developing country towards a developed country; the concept of development planning implemented is based on developing a group of islands. One of the primary considerations is that the issuance of Law Number 32 of 2014 concerning Regional Government, amended by Law Number 9 of 2015, has given more comprehensive authority to Regional Governments to regulate and manage the needs and interests of the local community according to their initiative. Based on community aspirations to support the achievement of regional development goals (Stimson et al., 2006).

Regional development must be interpreted as a process of sustainable development. The measure of sustainable development, Cieślak et al. (2019), can be seen from the level of productivity of the leading regional sectors. The higher the productivity level of the leading regional sector, the better the regional economic development performance.

Maluku Province, with 11 regencies/cities, is one of the archipelagic provinces in Indonesia and has its potential or uniqueness in terms of regional economic resources. This condition allows regional governments to optimally develop the diversity of their potential, mainly based on superior regional sectors, which can be used as regional competitiveness to increase productivity or regional economic performance.

The Central Statistics Agency for Maluku Province classifies 17 sectors according to business fields, namely: (1) Agriculture, Forestry, and Fisheries; (2) Mining and Quarrying; (3) Processing Industry; (4) Procurement of Electricity and Gas; (5) Water Procurement, Waste Treatment, Waste, and Recycling; (6) Construction; (7) Wholesale and Retail Trade; (8) Transportation and Warehousing; (9) Provision of Accommodation and Food and Drink; (10) Information and Communication; (11) Financial Services and Insurance; (12) Real Estate; (13) Company Services; (14) Government Administration, Defense, and Social Security; (15) Education Services; (16) Health Services and Social Activities; and (17) Other Services.

Therefore, the discussion on determining the leading sector in Maluku Province from a global economic perspective is critical, some of which are: (1) Understanding comparative advantage: by discussing the determinants of the leading sector in Maluku Province, we can understand which sectors have a comparative advantage in the area. Comparative advantage is a condition in which a region has an advantage in producing a good or service compared to other regions. By understanding these comparative advantages, these regions can develop superior sectors that have more potential to be developed and marketed globally; (2)


**Corresponding Author***: **Syawal Zakaria,,** Faculty of Economics, University of Darussalam Ambon, Indonesia*

Determine the economic development strategy: By knowing the leading sectors that have the potential to be developed, the government and entrepreneurs can determine the economic development strategy in Maluku Province. The strategy must consider the determinants of leading sectors, such as natural resources, technology, and markets. From a global economic perspective, an economic development strategy must look at global market opportunities and develop sectors that can compete in these markets; (3) Increasing regional competitiveness: By developing superior sectors that are competitive in the global market, Maluku Province can increase regional competitiveness. Regional competitiveness is essential in facing increasingly fierce global competition. By increasing competitiveness, Maluku Province can attract investment and increase employment to improve people's welfare; (4) Increasing economic growth: By developing potential leading sectors in the global market, Maluku Province can increase its economic growth. High economic growth can create new jobs, increase people's income, and reduce poverty. In addition, high economic growth can also increase people's purchasing power and encourage the consumption of goods and services, which can encourage further economic growth.

Report to the Central Bureau of Statistics for Maluku Province (2022) for the period 2017 - 2021, the most significant contribution to GRDP according to the business field of Maluku Province comes from sector A. Agriculture, Forestry and Fisheries by 23.72 per cent, followed by sector O. Government Administration, Defense, and Social Security by 20.72 per cent and sector G. Wholesale and Retail Trade by 14.77 per cent. At the same time, the sector with the lowest contribution is Sector D. Electricity and Gas Procurement by 0.10 per cent, sector L. Real Estate by 0.31 per cent, and Sector E. Water supply, waste management, waste and recycling by 0.47 per cent. This achievement, when converted to the national GRDP contribution, Maluku Province is the province with the fourth lowest GRDP contribution out of 34 provinces in Indonesia, with an average of 0.29 per cent (BPS Indonesia, 2022). This shows that the ability of the sector/industry in Maluku Province in the category of sector/industry competitiveness is low. If this problem continues, it will cause development problems in the region, both economic, social, political, and other problems.

Therefore, this paper aims to determine and improve the leading sectors' regional competitiveness, which can be considered in formulating policies by local governments. The critical question to be answered in this paper is how to determine the leading sectors of regional competitiveness in Maluku Province. To answer this question, three analysis models


**Corresponding Author***: **Syawal Zakaria,,** Faculty of Economics, University of Darussalam Ambon, Indonesia*

are used, namely (1) the Klasen Typology model to map the potential of leading sectors; (2) the Location Quotient model to determine the leading sector; (3) the Shift Share model analyzes the level of change in each economic sector to determine regional competitiveness.

Thus the structure of this paper consists of six parts, where the second part reviews the literature on the concept of regional competitiveness, the third part discusses the research methodology used, the fourth part focuses on the research results, and the fifth part is the discussion, and the sixth part concludes.

## LITERATURE REVIEW

The decentralization policy in Indonesia that has been implemented since 1999 aims to increase regional economic development so that it runs effectively and efficiently. With this opportunity, it is hoped that the Regional Government can wisely innovate and manage potential regional economic sectors to become leading and highly competitive sectors. With high regional competitiveness, apart from impacting various development sectors in the regions, it also has implications for improving the structure of regional economic development. If that happens, it will positively impact improving the welfare of the local community.

The concept of regional competitiveness contains quite complex and varied meanings. Generally, regional competitiveness is utilizing all regional resources as a locomotive for regional economic development to improve the local community's living standards. Meanwhile, the World Economic Forum (2016) defines national competitiveness as the ability of the national economy to achieve high and sustainable economic growth. The Institute for Management Development (IMD) defines national competitiveness as the ability of a country to create added value to increase national wealth by managing assets and processes, attractiveness and aggressiveness, globality and proximity, and economic and social models.

The European Commission (2022) defines competitiveness as the ability to produce goods and services to the needs of international markets, accompanied by the ability to sustain high and sustainable incomes, more generally, the ability (regions) to create relatively high incomes and employment opportunities while being exposed to external competitiveness. In the meantime,

Porter (1990) defines national or regional competitiveness as the ability of a region to innovate to obtain or maintain profits in the main industrial sector compared to other regions.


**Corresponding Author***: **Syawal Zakaria,,** Faculty of Economics, University of Darussalam Ambon, Indonesia*

Furthermore, according to Thurow (1993), regional competitiveness is the ability of regions to improve living standards through the knowledge-based industrial sector.

Huggins and Izushi (2007) define regional competitiveness as "the ability of the economy to attract and retain firms with stable conditions or with market share which increases in its activities, while maintaining or increasing the standard of living for all involved". In this sense of competitiveness, it is also implicitly stated that conducive economic conditions are an absolute requirement for increasing regional competitiveness.

Competitiveness is generally associated with comparative advantage, namely having supporting elements in the production process that enable one country to attract investors to invest in their country and not in other countries. The connotation of an advantage here is a situation that allows investors to reap the maximum possible profit. For example, this can be accomplished by providing cheap land, cheap labour wages, and a guaranteed supply of production raw materials at a lower price than in other countries. This means that capital strength and technological advantage are the key determinants of increasing a country's competitiveness (product sales).

## METHODOLOGY

This study uses a descriptive exploratory research design, namely a regional sectoral exploration study, to identify and analyze sectors/industries used to determine leading sectors' regional competitiveness. Statistical data analysis and data processing are sourced from official statistical news information from the Central Bureau of Maluku Province and the Indonesian Central Bureau of Statistics. Statistical data analysis focused on two factors influencing regional competitiveness: output and outcome. First, the output factor or regional economic performance includes labour productivity, level of employment opportunities, and GRDP per capita. Second, the outcome factors are related to regional competitiveness targets, namely improving the quality of people's living standards (Gardiner et al. (2004).

Furthermore, data processing and analysis are carried out through several stages to answer research problems as follows:

1. Sector/industry mapping of 17 sectors according to the business sector to determine regional economic development policy priorities. The analysis model used is the Klassen Typology


**Corresponding Author**: ***Syawal Zakaria,,*** *Faculty of Economics, University of Darussalam Ambon, Indonesia*

analysis Katti et al. (2019) to map sectoral economic potential originating from the Gross Regional Domestic Product (GRDP) according to the business field from 2017-2021.

a) Quadrant I (Primary / Prime Sectors). This quadrant describes the regional economic growth rate and the sector's greater contribution to GRDP (Gi > G; Si > S).
b) Quadrant II (developing sector). This quadrant depicts a smaller regional economic growth rate (Gi < G) and a larger sector contribution to GRDP (Si > S)
c) Quadrant III (potential sector or one that can still develop rapidly). This quadrant illustrates that sector growth (Gi) is greater than GRDP growth (G), but the sector contribution (Si) is smaller than GRDP (Gi > G; Si < S).
d) Quadrant IV (underdeveloped/backward sector). This quadrant describes regional economic growth, and the sector's contribution to GRDP is low. (Gi < G; and Si < S).

Sector Category Matrix Based on the Klassen Typology

| Sectoral Contribution | Sectoral Growth | |
|---|---|---|
| | Gi . > G | Gi < G |
| Si > S | Quadrant I<br>Leading Sectors | Quadrant II<br>Developing Sector |
| Si < S | Quadrant III<br>Potential Sector | Quadrant IV<br>Lagging Sector |

Source: Katti et al. (2019)

2. Determining the regional economic base sector using the location quotient (L.Q.). This L.Q. technique is used to determine how much the level of specialization of the base or leading sectors is Siregar et al. (2021):

$$LQ = \frac{V_{ir}/V_r}{V_{in}/V_n}$$

Where:

$V_{ir}$ = GRDP value of a sector at the provincial level
$V_r$ = GRDP value of all sectors at the provincial level
$V_{in}$ = National-level sector GDP value
$V_n$ = The GDP value of all sectors at the national level


**Corresponding Author**: ***Syawal Zakaria,,*** *Faculty of Economics, University of Darussalam Ambon, Indonesia*

Under the conditions:

- If L.Q. is greater than 1 (L.Q.> 1), this sector is included in the base sector, with a provincial level of specialization higher than the national level;
- If L.Q. is less than 1 (L.Q. < 1), the sector is a non-base sector, namely a sector with a higher level of specialization than the national level;
- If L.Q. equals 1 (L.Q. = 1), the provincial specialization level is the same as the national level.

3. It determines leading sectors as regional competitiveness. The method used is shift-share. The aim is to determine changes in the regional sectoral economic performance compared to the national economic performance. If a region gains progress in the national economy, it is found that there is a shift in the results of regional economic development. In addition, the growth rate of the sector/industry in a region is compared with the growth rate of the national sector/industry. The sector is categorized with a competitive advantage if there is a positive number in the comparison. Four aspects have been analyzed, namely: (1) the real effect of regional economic growth (D); (2) the effect of national economic growth (N); (3) the industry combination effect (M), and (4) the competitive advantage effect (C) (Knudsen, 2000). The shift-share formula can be described as follows:

a) The real impact of regional economic growth

(1) $Dij = Nij + Mij + Cij$ or $Dij = Eij^* - Eij$

b) The Influence of national economic growth

(2) $Nij = Eij \times r_n$

c) The Influence of the industrial mix (industry mix)

(3) $Mij = Eij (r_{in} – r_n)$

d) Effects of competitive advantage

(4) $Cij = Eij (r_{ij} – r_{in})$

Where: $r_{ij}$, $r_{in}$, $r_n$ is the regional growth rate and the national growth rate, respectively, defined as follows:

(5) $r_{ij} = (Eij^* - Eij)/Eij$

(6) $r_{in} = (Ein^* - Ein)/Ein$

(7) $r_n = (En^* – En)/En$


**Corresponding Author***: **Syawal Zakaria,,** Faculty of Economics, University of Darussalam Ambon, Indonesia*

While Eij is the job opportunity in the sector I area j, Ein is the job opportunity in the national sector I, and En is the national job opportunity, the sign * indicates the job opportunity in the final year of the analysis.

## RESULT

### Mapping the Growth Structure of the Regional Economic Sector

The data processing results in Table 2 present the average growth and contribution of sectoral GRDP in Indonesia and the Maluku Province in 2017 – 2021. Based on Table 1, it can be seen that the regional economic structure is mapped; namely, the sectors that make the largest contribution to the Maluku Province GRDP are agriculture, forestry, and fisheries, followed by government administration, defence, and service sectors; and the wholesale and retail trade sector. Then for the highest average growth: the financial services and insurance sector, the health sector, social activities, and the education sector. Meanwhile, the sector with the smallest average growth is the mining and quarrying sector.

Furthermore, Table 1 also shows that the sector with the largest average contribution to Indonesia's GDP is the manufacturing sector, followed by the wholesale and retail trade sector and the agriculture, forestry, and fisheries sectors. Meanwhile, the sector with the smallest average contribution was the water supply, waste processing, and recycling sectors, with the highest average growth in Indonesia's GDP in the health sector and social activities, followed by the information and communication sector. Meanwhile, the transportation and warehousing sector has the smallest average growth. Furthermore, using the Klassen Typology analysis to classify the regional economic structure of Maluku Province can be seen in Table 2.

Table 1

Growth Rate and GRDP Contribution Province Maluku and Indonesia in 2017-2021

| No. | Sector/ Industry | Indonesia | | Maluku Province | |
|---|---|---|---|---|---|
| | | Growth Average (r) | Contribution (y) | Growth Average (ri) | Contribution (yi) |


**Corresponding Author**: ***Syawal Zakaria,,*** *Faculty of Economics, University of Darussalam Ambon, Indonesia*

| | | | | | |
|---|---|---|---|---|---|
| 1 | Agriculture, Forestry, and Fishery | 2.77 | 13.13 | 3.11 | 23.49 |
| 2 | Mining and Quarrying | 1.36 | 7.84 | -3.72 | 2.56 |
| 3 | Processing Industry | 2.13 | 21.70 | 2.04 | 5.30 |
| 4 | Electricity and Gas Procurement | 3.18 | 1.07 | 4.09 | 0.10 |
| 5 | Water Supply, Waste Management, and Recycling | 5.57 | 0.09 | 3.45 | 0.47 |
| 6 | Construction | 2.85 | 10.42 | 4.92 | 7.05 |
| 7 | Wholesale and Retail Trade | 2.61 | 13.65 | 3.21 | 14.77 |
| 8 | Transportation and Warehousing | 0.41 | 4.13 | 1.00 | 5.05 |
| 9 | Provision of Accommodation and Food and Beverage Supply | 1.28 | 3.05 | 1.18 | 1.65 |
| 10 | Information and Communication | 8.46 | 5.82 | 4.06 | 4.04 |
| 11 | Financial Services and Insurance | 3.90 | 4.27 | 5.96 | 3.96 |
| 12 | Real Estate | 3.59 | 3.06 | 2.14 | 0.31 |
| 13 | Corporate Services | 3.55 | 1.88 | 3.39 | 0.99 |
| 14 | Government Administration, Defense, and Social Security | 2.82 | 3.47 | 4.35 | 20.65 |
| 15 | Education Services | 3.59 | 3.27 | 4.24 | 5.72 |
| 16 | Health Services and Social Activities | 9.46 | 1.28 | 5.39 | 2.20 |
| 17 | Other Services | 4.39 | 1.88 | 2.92 | 1.68 |

Based on Table 2, it can be seen that the results of the classification of the economic structure of the Maluku Province GRDP using the Klassen Typology analysis, the developed and fast-growing sectors (quadrant I) are the agricultural, forestry, and fisheries sectors; wholesale and retail trade sector; transportation and warehousing sector; government


**Corresponding Author***: **Syawal Zakaria,,** Faculty of Economics, University of Darussalam Ambon, Indonesia*

administration, defence, and service sectors; and the education services sector. At the same time, the health services sector, social activities, water supply, waste management, waste, and recycling sectors are classified as fast moving forward but under pressure (Quadrant II). This was caused by the impact of the economic crisis and the spread of Corona Virus Diseases (COVID-19). Even though there is pressure, its contribution to GRDP is still positive.

Next, the sector with the classification of the potential and fast-growing sector (Quadrant III) consists of electricity and gas procurement, construction, financial services, and insurance. This sector has a higher sectoral growth rate, but its contribution to GRDP is low. Finally, the regional economic sector with a relatively underdeveloped sector classification (Quadrant IV) includes the mining and quarrying sector, the manufacturing industry sector, the accommodation, and food and beverage provision sector, the information and communication sector, the real estate sector, the corporate services sector, and other service sectors.

**Table 2**

**Classification of the Regional Economic Structure of Maluku Province**

| **Sectoral Contribution** | Sectoral Growth | |
|---|---|---|
| | **Gi . > G** | **Gi < G** |
| **Si > S** | **Quadrant I**<br>**An advanced and rapidly growing sector**<br>Agriculture, forestry, and fishery sectors<br>Wholesale and retail trading sector<br>Transportation and warehousing sector<br>Government administration, defence and service sectors<br>Education services sector | **Quadrant II**<br>**The sector is advancing but depressed**<br>The sector of water supply, waste treatment waste, and recycling<br>Health sector and social activities |


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| | | |
|---|---|---|
| **Si < S** | **Quadrant III**<br>**Potential sector or one that can still develop**<br>Electricity and gas procurement sector<br>Construction sector<br>Financial services and insurance sector | **Quadrant IV**<br>**Relatively lagging sector**<br>Mining and quarrying sector<br>Processing industry<br>Accommodation and food and beverage supply sector<br>Information and communication sector<br>Real estate sector<br>Corporate service sector<br>Other service sectors |

**Economic Base Sector (Leading Sector)**

The basic economic basis theory holds that economic growth in a region will stimulate economic growth in other areas by utilizing available resources. The Location Quotient (L.Q.) is a model used to detect economic base sectors with the following criteria:

a) If the L.Q. value > 1, the sector is a leading sector in the region and has the potential to be developed as a driving force for the regional economy;
b) if the L.Q. value < 1, it means that the sector is not a leading sector and has less potential to be developed as a driving force for the regional economy; And
c) if L.Q. = 1, the sector is not an economic base or leading sector.

**Table 3**

Economic Base Sector in Maluku Province of Indonesia, 2017 – 2021

| SECTOR/ INDUSTRY | | LQ |
|---|---|---|
| A | Agriculture, Forestry, and Fishery | **1.78** |


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| | | |
|---|---|---|
| B | Mining and Quarrying | 0.30 |
| C | Processing Industry | 0.24 |
| D | Electricity and Gas Procurement | 0.10 |
| E | Water Supply, Waste Management, and Recycling | **5.09** |
| F | Construction | 0.70 |
| G | Wholesale and Retail Trade | **1.08** |
| H | Transportation and Warehousing | **1.25** |
| I | Provision of Accommodation and Food and Beverage Supply | 0.54 |
| J | Information and Communication | 0.64 |
| K | Financial Services and Insurance | 0.96 |
| L | Real Estate | 0.10 |
| M, N | Corporate Services | 0.54 |
| O | Government Administration, Defense, and Social Security | **6.14** |
| P | Education Services | **1.77** |
| Q | Health Services and Social Activities | **1.58** |
| R, S, T, U | Other Services | 0.88 |

Source: BPS Maluku (data processed, 2022)

Table 3 shows that of the 17 business sectors, seven business sectors are leading ones, and ten other sectors are not. The seven leading sectors: the government administration sector, defence, and social security, occupy the first position with an L.Q. value of 6.14. The water supply sector, waste treatment, and recycling take second place with an L.Q. value of 5.09. Agriculture, forestry, and fisheries take up the third position with an L.Q. value of 1.78. This is followed by the education services sector with an L.Q. value of 1.77, the health services and social activities sector with an L.Q. value of 1.58, the transportation and warehousing sector with an L.Q. value of 1.25, and finally, the wholesale and retail trade sector with an L.Q. value of 1.08.

Furthermore, when viewed from the productivity/economic performance of the Maluku region, it shows that the economic performance of this specific region falls into the low competitiveness category. This can be seen from the results of the L.Q. calculation, showing that ten of the seventeen business sector sectors are not in the top sector category. This is interesting to observe and study specifically to improve the economic performance of the


**Corresponding Author***: **Syawal Zakaria,,** Faculty of Economics, University of Darussalam Ambon, Indonesia*

Maluku region. Differences in the competitiveness or superiority of these sectors make it possible to carry out a pattern of product specialization between sectors or regions, which will open opportunities for creating commodity exchanges according to the needs of each region. The implication is that one region's growth will influence other regions' growth. Therefore, the role of local governments in empowering leading sectors as drivers of the regional economy is of great necessity, especially in terms of inter-regional commodity exchange processes.

**Shifts in Regional Economic Structure**

Economic potential in an area is the ability of the regional economy that is possible and feasible to be developed to become a sustainable source of livelihood for the local community and a driver of the national economy. The extent to which the regional economic potential can drive the regional economy is determined by the planning and mapping of the leading sectors carried out by the Regional Government. To find out which sectors have the potential to drive the structure of the regional economy, the Shift-Share (S.S.) analysis technique is used by comparing the performance of the regional economic sector to the performance of the national economy. Suppose the results of comparing the growth rate of sectors in a region with the growth rate of the national economy and its sectors have a positive value. In that case, it is called the competitive advantage of a sector in that region.

Based on the results of the S.S. analysis in Table 4 above, it can be seen which sectors have a competitive advantage. Of the 17 sectors/industries, there are 16 sectors/industries with a positive deviation classification or have regional competitiveness capable of driving rapid regional economic growth in Maluku Province (Dij or S.S.). Meanwhile, the only sector with a negative value is the mining and quarrying sector. This means that the latter can less drive regional economic performance in Maluku Province.

Table 4

Shift-Share Analysis of Regional Economic Structure

Maluku Province of Indonesia, 2017 - 2021

| NO. | | SECTOR/ INDUSTRY | Nij | Mij | Cij | Dij/SS | SNIJ |
|---|---|---|---|---|---|---|---|


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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. | A | Agriculture, Forestry, and Fishery | 783 | -26 | 92 | 850 | 67 |
| 2. | B | Mining and Quarrying | 101 | -55 | -166 | -120 | -221 |
| 3. | C | Processing Industry | 179 | -50 | -7 | 122 | -57 |
| 4. | D | Electricity and Gas Procurement | 3 | 0 | 1 | 5 | 2 |
| 5. | E | Water Supply, Waste Management, and Recycling | 16 | 16 | -13 | 19 | 3 |
| 6. | F | Construction | 227 | -6 | 177 | 397 | 170 |
| 7. | G | Wholesale and Retail Trade | 492 | -57 | 102 | 537 | 45 |
| 8. | H | Transportation and Warehousing | 176 | -177 | 40 | 38 | -138 |
| 9. | I | Accommodation and Food and Beverage Supply | 57 | -37 | 0 | 20 | -37 |
| 10. | J | Information and Communication | 134 | 297 | -238 | 193 | 59 |
| 11. | K | Financial Services and Insurance | 126 | 48 | 101 | 274 | 148 |
| 12. | L | Real Estate | 11 | 3 | -6 | 8 | -3 |
| 13. | M, N | Corporate Services | 33 | 6 | 0 | 39 | 6 |
| 14. | O | Government Administration Defense, and Social Security | 670 | -22 | 382 | 1,030 | 360 |
| 15. | P | Education Services | 187 | 49 | 45 | 280 | 93 |
| 16. | Q | Health Services and Socia Activities | 71 | 189 | -121 | 139 | 68 |
| 17. | R, S, T U | Other Services | 56 | 28 | -28 | 56 | 0 |
| | **Total** | | **3,321** | **205** | **361** | **3,887** | **566** |

Source: BPS Maluku (data processed, 2022)

**Table 5**


**Corresponding Author***: **Syawal Zakaria,,** Faculty of Economics, University of Darussalam Ambon, Indonesia*

Maluku Province Job Opportunities by Sector/Industry 2017-2021

| SECTOR/INDUSTRY | 2017 | 2021 | CHANGE | |
|---|---|---|---|---|
| | | | Δ | % |
| **A** Agriculture, Forestry, and Fishery | 298,571 | 261,366 | -37,204 | -12.46 |
| **B** Mining and Quarrying | 6,952 | 9,449 | 2,497 | 35.92 |
| **C** Processing Industry | 33,624 | 84,239 | 50,616 | 150.54 |
| **D.E**. Electricity and Gas Procurement, Water Supply, Waste Management, and Recycling | 3,050 | 4,805 | 1,754 | 57.51 |
| **F** Construction | 41,356 | 35,714 | -5,642 | -13.64 |
| **G.I**. Trade, Food and Beverage Supply, and Accommodation Provision | 114,846 | 154,866 | 40,020 | 34.85 |
| **H.J.** Transportation, Warehousing, Information, and Communication | 44,832 | 60,777 | 15,946 | 35.57 |
| **KLMN** Financial Services Insurance, Real Estate, Corporate Services | 10,286 | 16,175 | 5,889 | 57.26 |
| **OPQRSTU** Other Services | 155,847 | 173,363 | 17,516 | 11.24 |
| **Total** | **709,363** | **800,755** | **91,392** | **12.88** |

Source: BPS Maluku (data processed, 2022)

Table 5 above shows that during 2017 – 2021 the working population aged 15 years and over experienced an increase of 12.88 per cent or 91,392 workers. The increase in job opportunities is higher when compared to national employment opportunities, which is only 8.29 per cent (see Table 6).

**Table 6**

Indonesian Job Opportunities by Sector/Industry 2017-2021


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| SECTOR/INDUSTRY | 2017 | 2021 | CHANGE | |
|---|---|---|---|---|
| | | | Δ | % |
| **A**n Agriculture, Forestry, and Fishery | 35,924,541 | 37,130,676 | 1,206,135 | 3.36 |
| **B** Mining and Quarrying | 1,386,900 | 1,443,422 | 56,522 | 4.08 |
| **C** Processing Industry | 17,558,632 | 18,694,463 | 1,135,831 | 6.47 |
| **D**.**E**. Electricity and Gas Procurement, Water Supply, Waste Management, and Recycling | 717,012 | 847,244 | 130,232 | 18.16 |
| **F** Construction | 8,136,636 | 8,293,769 | 157,133 | 1.93 |
| **G.I**. Trade, Food and Beverage Supply, and Accommodation Provision | 29,382,090 | 34,916,450 | 5,534,360 | 18.84 |
| **H.J**. Transportation, Warehousing, Information, and Communication | 5,883,457 | 6,441,853 | 558,396 | 9.49 |
| **KLMN** Financial Services, Insurance, Real Estate, Corporate Services | 3,693,503 | 3,970,831 | 277,328 | 7.51 |
| **OPQRSTU** Other Services | 18,339,652 | 19,311,815 | 972,163 | 5.30 |
| **Total** | **121,022,423** | **131,050,523** | **10,028,100** | **8.29** |

Source: BPS (data processed, 2022)

As regards the high number of people working in Maluku Province, when viewed from the contribution of each sector/industry, the manufacturing sector (C) is the sector that provides the largest contribution, namely 50,616 workers or 150.54 per cent, followed by the trade sector and the provided accommodation and food and beverage supply. (G, I) amount to as many as 40,020 workers or 34.85 per cent, and the other services sector (OPQRSTU) to as many as 17,516 workers or 11.24 per cent. Meanwhile, there were two sectors/industries with negative employment growth rates: the agriculture, forestry, and fisheries sectors experienced


**Corresponding Author***: **Syawal Zakaria,,** Faculty of Economics, University of Darussalam Ambon, Indonesia*

a decrease of 37,204 workers or -12.46 per cent, and the construction sector (F) saw a decrease of 5,624 workers or 13.64 per cent.

**Table 7**

Shift-Share Analysis of Job Opportunities Maluku Province 2017-2021

| Sector/Industry | National Growth Components Nij | Industry Mix Components Mij | Competitive Advantage Components Cij | Real Job Opportunities Dij |
|---|---|---|---|---|
| **A** Agriculture, Forestry and Fishery | 24,740 | -14,716 | -47,229 | -37,204 |
| **B** Mining and Quarrying | 576 | -293 | 2,214 | 2,497 |
| **C** Processing Industry | 2,786 | -611 | 48,441 | 50,616 |
| **D.E**. Electricity and Gas Procurement, Water Supply, Waste Management, and Recycling | 253 | 301 | 1,200 | 1,754 |
| **F** Construction | 3,427 | -2,628 | -6,441 | -5,642 |
| **G.I**. Trade, Food and Beverage Supply, and Accommodation Provision | 9,516 | 12,116 | 18,388 | 40,020 |
| **H.J.** Transportation Warehousing, Information and Communication | 3,715 | 540 | 11,691 | 15,946 |
| **KLMN** Financial Services Insurance, Real Estate Corporate Services | 852 | -80 | 5,117 | 5,889 |
| **OPQRSTU** Other Services | 12,914 | -4,652 | 9,255 | 17,516 |
| **Total** | **58,779** | **0** | **32,613** | **91,392** |

Source: BPS (data processed, 2022)


**Corresponding Author***: **Syawal Zakaria,,** Faculty of Economics, University of Darussalam Ambon, Indonesia*

In addition, the results of Shift-Share employment opportunities for Maluku Province, Indonesia, where residents aged 15 and overworked throughout Indonesia between 2017 – 2021 increased by 8.29 per cent (Table 4), while the number of workers in Maluku Province during the period the same time experienced a change of 12.88 per cent (Table 5). This difference can be explained in that first, how much does the number of workers in Maluku Province increase if the number per sector and the number at the provincial level increase at the same rate as the national growth rate? The findings show that around 58,779 new workers in Maluku Province are due to the Influence of the growth of national employment opportunities on employment opportunities in Maluku Province (Table 7). As a result of the increase in the number of new workers, there was an increase of 91,392 people (Table 5). The addition of the number of new workers is not influenced by the industry mix (Mij) but rather the growth in employment opportunities because it is influenced by the advantages competitive advantage (Cij), which led to an increase in job offers by 32,613 people in Maluku Province (Table 7).

Second, there is the Influence of the industry-mix component, explaining that there are differences in the increase in the number of workers at the national level and the increase at the Maluku Province level, namely in Maluku Province, where the growth rate of employment in the construction sector is minus 13.64 per cent and in the agriculture, forestry, and fisheries sectors minus 12.46 per cent lower than the national growth rate of 1.93 per cent in the construction sector and 3.36 per cent in the agricultural sector. Thus, the Shift-Share results can be determined that overall, out of 17 sectors/industries, there are 15 sectors/industries which have a competitive advantage or competitiveness, namely sector C of the manufacturing industry; sector G.I. Trade, Food and Beverage Supply and Accommodation Provision; OPQRSTU sector, other services; sector H.J. Transportation, warehousing, information, and communication: financial services KLMN sector, financial services, insurance, real estate, corporate services; sector B mining and quarrying; and sector D.E. electricity and gas procurement, water supply, waste treatment, and recycling.

These sectors are developing faster than the national average growth rate, while the other two are sector A., agriculture, forestry, and fisheries; and the F construction sector, the development of absorption of employment opportunities has been slower than the average national opportunity growth.


**Corresponding Author***: **Syawal Zakaria,,** Faculty of Economics, University of Darussalam Ambon, Indonesia*

## Discussion

This study intends to identify and determine the leading sectors/industries as regional competitiveness in Maluku Province, Indonesia. The main findings in this empirical research can be explained according to the methodological approach provided and can be compared with the results of other studies. We started this analysis by mapping the regional sectoral economic potential. We assume that all sectors/industries have the same potential as fast-developing and fast-growing sectors/industries to become the mainstay sector in driving regional economic growth.

The results of the study show that there were 5 out of 17 sectors/industries classified as fast-developing and fast-growing according to business fields, namely: agriculture, forestry, and fisheries; wholesale and retail trade sector; transportation and warehousing sector; government administration, defence, and service sectors; and the education services sector. These sectors are the potential to become reliable or competitive to encourage regional economic growth. The results of these findings are not all directly proportional to other studies. Pingki et al. (2021) and Hardiani & Lubis (2017) found that the sectors that made the greatest contribution were agriculture, forestry, and fisheries, while the electricity and gas sectors had the lowest. Meanwhile, Wen and Du (2018) stated that the manufacturing industry sector is the potential sector that affects the economic and competitive structure in China's Shaanxi Province

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The further analysis employed the Location Quotient (L.Q.) analysis to determine the sectoral economic basis as a leading sector. The analysis results show 7 out of 17 sectors/industries as the leading sector basis. These sectors include the government administration, defence, and social security sectors as the most dominant ones. These are followed by the water supply sector, waste treatment, waste, and recycling; the agriculture, forestry, and fishery sectors; the education service sector; the health service sector and social activities; the transportation and warehousing sector; and the wholesale and retail trade sector. Meanwhile, Mukhlis et al. (2018) and Khusaini (2015) stated that the potential sector that affects the economic structure is the service sector, hotels sector, and restaurants contributing to GRDP.

In addition to the two analytical models above, a more dynamic model using the Shift-Share analysis model results in the fact that there has been an increase in the growth of the


**Corresponding Author***: **Syawal Zakaria,,** Faculty of Economics, University of Darussalam Ambon, Indonesia*

Gross Regional Domestic Product (GDP) and a change in the number of working population aged 15 years and over during the study period. The analysis results of regional economic performance compared to the national economy's performance found 16 sectors with positive deviation classifications or having high competitiveness (competitive advantage) that can drive rapid regional economic growth in Maluku Province, Indonesia (Dij or S.S.). With changes in sectoral economic performance in the regions, it will also influence the performance of the Indonesian economy, which in turn can improve people's welfare (Rizani, 2020; Zakaria, 2013), indicating that sectoral economic performance in the regions is strongly influenced by the performance of the Indonesian economy (Wiranthi & Mubarok, 2017). Regarding absorption of employment opportunities, working residents aged 15 years and over experienced a significant increase in employment opportunities. This results from the Influence of competitive advantage Wardana et al. (2021) from each economic sector. The discussion above concludes that the analysis model fails to answer the basic and comprehensive problems regarding determining whether the leading sector has the regional edge or shows superiority in Maluku Province. For this reason, building a more comprehensive analysis model is necessary to determine the determinants of regional competitiveness in the Maluku Province of Indonesia.

## Conclusion

The results of the research and discussion lead to the conclusion that:

1. Regional competitiveness stands for the ability to utilize and manage the potential of regional resources by combining input, output, and outcome factors to improve the quality of living standards of local communities in a sustainable manner
2. The leading sectors which are used as the regional competitiveness of Maluku Province, Indonesia, consist of sector C of the Processing Industry, as the sector with the most competitive regional competitiveness, followed by the G.I. Trade and Food and Beverage Accommodation Provision sector; sector H.J. Transportation, Warehousing, Information, and Communication; the OPQRSTU sector of Other Services; the KLMN sector of Financial Services, Insurance, Real Estate, and Corporate Services; sector B of Mining and Quarrying; and sector D.E. of Electricity and Gas Procurement, Water Supply, Waste Management, and Recycling. Determining the leading sector with high competitiveness can become the basis


**Corresponding Author***: **Syawal Zakaria,,** Faculty of Economics, University of Darussalam Ambon, Indonesia*

for policy formulation by the Government of the Maluku Province of Indonesia to improve the standard of living of the local communities.

3. The approaching model used in this study has not fully addressed the problems of this research. This is because the study of competitiveness is quite broad and complex, so a more accurate and realistic approach model is needed (for example, an approach using an econometric analysis model).

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**Corresponding Author***: **Syawal Zakaria,,** Faculty of Economics, University of Darussalam Ambon, Indonesia*

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**Corresponding Author***: **Syawal Zakaria,,** Faculty of Economics, University of Darussalam Ambon, Indonesia*