

ANALYSIS OF THE ECONOMIC POTENTIAL OF KARANGANYAR DISTRICT IN 2017-2022

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Abstract

The primary objective of economic development is to promote community prosperity. Assessing the progress of economic development relies on observing the region's economic growth, which is closely tied to the utilization of its existing economic potential. Maximizing the exploration and utilization of regional potential is crucial for fostering development. Identifying key sectors is instrumental in stimulating economic growth. The economic growth in Karanganyar Regency experienced fluctuations between 2017 and 2022. Thus, this study aims to identify the fundamental sectors in Karanganyar Regency, determine the potential and leading economic sectors to be developed, and contribute to economic growth in the region. Additionally, it analyzes the classification of regional economic sector growth in Karanganyar Regency from 2017 to 2022. The study employs secondary data, specifically time series data spanning from 2017 to 2022, obtained from the Central Statistics Agency (BPS) of Karanganyar Regency and Central Java Province. The data used encompass the Gross Regional Domestic Product (GRDP) by industry sectors based on the 2010 Standard Industrial Classification for Karanganyar Regency and Central Java Province. The research utilizes various methodologies, including Location Quotient (LQ) analysis, Growth Ratio Method (MRP), overlay analysis, and Klassen Typology. The findings of this study reveal that Karanganyar Regency, from 2017 to 2022, consists of (1) five fundamental economic sectors, (2) ten economically promising sectors with significant growth, (3) three potential economic sectors, and (4) three advanced and rapidly expanding sectors in Karanganyar Regency.

Keywords: Economic Growth, Location Quotient (LQ), Growth Ratio Method, overlay analysis, Klassen Typology

1. INTRODUCTION

Regional economic development refers to collaborative efforts between local governments and communities to utilize and manage existing resources. To achieve the goals of regional economic development, it is essential to align regional development priorities with the region's potential.

The concept of potential in economic activities, as defined by Rizki et al. (2017), involves exploring and developing resources to enhance their value and contribute to economic growth. This study focuses on Karanganyar Regency, where economic growth has exhibited fluctuations between 2017 and 2022. A comparison with the average economic growth rate of Central Java Province reveals that Karanganyar Regency has experienced a higher average growth rate of 4.2 percent, while the average economic growth rate of Central Java Province stands at 3.65 percent. This indicates that Karanganyar Regency has outperformed the broader region in terms of economic growth.

In addition, there has been a continuous increase in population growth and poverty rates in Karanganyar Regency. According to the Central Java Province Statistics Agency (BPS), the poverty rate in Karanganyar Regency was 9.55 percent in 2019, indicating 85 thousand individuals living below the poverty line. This rate increased to 10.28 percent in 2020, with 92 thousand people affected, and further rose to 10.68 percent in 2021, accounting for 95 thousand individuals. The significant rise in poverty rates over the past five years highlights the need for special attention from the local government. To address this issue, a strategy is necessary to develop the sectors in Karanganyar Regency and alleviate poverty among its residents. One approach is to identify and leverage the existing economic potential.

Karanganyar Regency boasts various economic potentials, including the processing industry, agriculture, forestry and fisheries, wholesale and retail trade, vehicle repair, construction, and education services. However, the local government has yet to focus on these sectors due to a lack of attention and proper utilization of the region's potential. Therefore, this study aims to analyze the sectors with untapped potential. By prioritizing their development, these sectors can generate a significant multiplier effect on the economy of Karanganyar Regency. Additionally, continuous research and further studies are crucial to achieve faster regional economic development that aligns with the local conditions.

To identify economic activities with potential and prominence in Karanganyar Regency, this study utilizes various analytical approaches, including Location Quotient (LQ) Analysis, Growth Ratio Model Analysis (MRP), Overlay Analysis, and Klassen Typology Analysis. Furthermore, it seeks to identify key economic sectors in Karanganyar Regency to guide policy formulation and promote economic growth in the era of regional autonomy. Therefore, the research is titled "Analysis of the Economic Potential of Karanganyar Regency in 2017-2022."

2. LITERATURE REVIEW

2.1. Theory of Economic Development

Economic development is commonly understood as an increase in per capita income, indicating an improvement in societal welfare. The rate of economic development is often measured by the growth of Gross Domestic Product (GDP). If the GDP value is equal to or lower than the population growth rate, per capita income will either remain stagnant or decrease (Sukirno, 1985).

2.2. Regional Economic Development

According to Arsyad (1999), regional economic development is a process involving local governments and communities in managing available resources and fostering partnerships with the private sector. The goal is to create new job opportunities and promote economic activities within the region.

2.3. Economic Growth Theory

Economic growth refers to the quantitative measure of an economy's development in percentage terms over a specific period, usually compared to the previous year (Sukirno, 2006). The growth rate can be determined by comparing the Gross Regional

Domestic Product (GRDP) of a particular year (GRDPt) with that of the previous year (GRDPt-1).

2.4. Prioritizing Potential Sectors

Rizki et al. (2017) emphasize the importance of prioritizing potential sectors as the initial step in regional economic development. The Growth Ratio Model (MRP) analysis is employed to identify sectors with development potential. This involves comparing the growth of activities in the study area with those in a reference area.

2.5. Economic Potential

Economic potential refers to the capacity of economic resources to be developed, strengthened, and improved, thereby adding value and contributing to further economic development (Rizki et al., 2017). In the context of a specific region, such as a regency, it represents the economic potential within that area.

2.6. Potential Economic Sectors

Potential economic sectors, also known as leading sectors, are productive sectors or business activities that have the potential to drive regional economic development and serve as the foundation of the region's economy, compared to other sectors with direct or indirect relationships (Tjokroamidjojo, 1999).

2.7. Economic Base Theory

The economic base theory posits that the growth rate of a region's economy is determined by the increase in exports from that region (Tarigan, 2005). It distinguishes between base sectors, which serve both regional and external markets, and non-base sectors, which provide goods and services exclusively for local consumption within the region's boundaries.

3. RESEARCH METHODS

The data utilized in this study consists of secondary data in the form of time series data spanning from 2017 to 2022. These secondary data were obtained from reliable sources such as BPS Karanganyar Regency and Central Java Province. To draw meaningful conclusions from the collected data, data analysis serves as the fundamental approach employed in this study. The following methods were utilized for data analysis in this study:

- 1) Location Quotient (LQ)

The Location Quotient (LQ) analysis is used to determine the basic and non-basic sectors of the economy in Karanganyar Regency. The LQ formula compares the Gross Regional Domestic Product (GRDP) of a sector in the regency with the total GRDP of the same sector in the province or national level (Kumala et al., 2017). This analysis helps identify the sectors that are fundamental to the local economy.

$$LQ = \frac{X_{ij}/X_j}{Y_i/Y}$$

Description:

X_{ij} = GRDP of sector i in region j (Regency/City)

X_j = Total GRDP of sector i in region j (Regency/City)

Y_i = GRDP of sector i in region p (Province/National)

Y = Total GRDP of sector i in region p (Province/National)

2) Growth Ratio Method

The Growth Ratio Method (MRP) analysis consists of two criteria: Study Area Growth Ratio (RPs) and Reference Area Growth Ratio (RPr). RPs compares the growth rate of a sector's income in the study area with the growth rate in the reference area, while RPr compares the growth rate of a sector's income in the reference region with the total growth rate of the same sector in the reference region. The MRP analysis helps determine the potential economic activities in the district/city level based on their growth rates.

$$RPs = \frac{\Delta Y_{ij}/Y_{ij(t)}}{\Delta Y_{in}/Y_{in(t)}}$$

Description:

ΔY_{ij} = Change in GRDP of sector i in the study area

$Y_{ij(t)}$ = GRDP of sector i in the study area at the beginning of the study

ΔY_{in} = Change in GRDP in the reference area

$Y_{in(t)}$ = GRDP of sector i in the reference area at the beginning of the period

RPs = Comparison between the growth rate of i-th sector income in the study area and the growth rate of total GRDP development in the reference area.

The MRP analysis provides results in real values and nominal values, which are combined to classify the economic activities into four categories: Classification 1 indicates prominent growth at both the provincial and district/city levels, Classification 2 indicates prominent growth at the provincial level but not at the district/city level, Classification 3 indicates prominent growth at the district/city level but not at the provincial level, and Classification 4 indicates low growth at both levels.

3) Overlays analysis

Overlay analysis is utilized in this study to assess potential economic activities and prioritize their development based on growth and contribution criteria. It combines the findings from LQ analysis and MRP analysis to identify superior sectors in terms of both contribution and growth.

The overlay analysis, as explained by Adiyatin et al., (2019), categorizes economic sectors into four possibilities:

1. Growth (+) and contribution (+): This signifies that the economic sector is highly dominant in terms of both growth and contribution. It indicates a sector that exhibits significant potential and plays a crucial role in economic development.
2. Growth (+) and contribution (-): In this case, the economic sector shows dominant growth but has a relatively small contribution. It suggests that the sector needs to enhance its contribution to become a prominent activity despite its positive growth.
3. Growth (-) and contribution (+): This scenario indicates that the economic sector has a small growth rate but a substantial contribution. It implies that the sector may be experiencing a decline in terms of growth but remains important due to its significant contribution.
4. Growth (-) and contribution (-): This combination suggests that the economic sector does not demonstrate potential in terms of either growth or contribution. It indicates that the sector is not promising and may not be a priority for further development.

By employing overlay analysis, the researchers can gain insights into the potential of economic sectors, their growth dynamics, and their contribution to the overall economy. This information can guide decision-making processes and prioritize sectors for development initiatives.

4) Klassen Typology

Klassen Typology is an analytical tool used for regional economic analysis and is employed in this study to classify economic sectors within a region (Rajab & Rusli, 2019). The purpose of using Klassen Typology analysis is to determine the position of the economic sectors in Karanganyar Regency, considering the economic sector of Central Java Province as a reference area.

According to Sjafrizal (2008), Klassen Typology analysis results in four classifications of GRDP sectors with distinct characteristics. The classification of GRDP sectors according to Klassen Typology Analysis is presented in Table 1. This analysis aids in understanding the nature and characteristics of economic sectors, enabling policymakers to make informed decisions regarding sector-specific development strategies.

Table 1. GRDP Sector Classification according to Klassen Typology Analysis

| Quadrant I | Quadrant II |
|--|--|
| Developed sector $s_i > s$ and $s_{ki} > s_k$ | Stagnant sector $s_i < s$ and $s > s_k$ |
| Quadrant III | Quadrant IV |
| Developing sector $s_i > s$ and $s_{ki} < s_k$ | Underdeveloped sector $s_i < s$ and $s_{ki} < s_k$ |

Source: (Sjafrizal, 2008)

4. RESULTS AND DISCUSSION

4.1. Location Quotient (LQ) Analysis

Table 2. Results of Location Quotient Based Sector Analysis in Karanganyar Regency in 2017-2022

| Business field | LQ average | Information |
|--|------------|-------------|
| C Processing industry | 1.35 | Base |
| D Procurement of Electricity and Gas | 1.54 | Base |
| E Water Procurement, Waste Management, Waste and Recycling | 1.12 | Base |
| I Provision of Accommodation and Food and Drink | 1.02 | Base |
| K Financial Services and Insurance | 1.24 | Base |

Source: BPS data processed in 2023

According to Table 2, the average LQ calculation for Karanganyar Regency during the period of 2017-2022 reveals that only 5 out of the 17 business sectors in the region can be classified as base sectors. This implies that there is a need to focus on developing sectors that have a base value, as they have the potential to contribute significantly to the economy of Karanganyar Regency. Additionally, the development of these base sectors can have a multiplier effect on other non-base sectors, potentially transforming them into base sectors in the future. By fostering the growth and development of these sectors, Karanganyar Regency can enhance its overall economic performance and diversify its economic base.

4.2. Growth Ratio Model (MRP) Analysis

The Growth Ratio Model (MRP) analysis is employed to identify sectors with potential for development by comparing the growth of an activity in the reference area with that in the study area. The MRP test results classify economic sectors into classification 1, as shown in Table 3 below:

Table 3. Results of the Growth Ratio Method (MRP) Analysis of Criteria 1 Karanganyar Regency in 2017-2022

| Business field | RPr | | RPs | | Criteria | Information |
|---|------|-------|------|-------|----------|------------------------------------|
| | Real | Value | Real | Value | | |
| Electricity and gas procurement | 1.39 | + | 1.12 | + | 1 | Standout (potential) growth sector |
| Water Supply, Waste Management, Waste and Recycling | 1.13 | + | 1.35 | + | 1 | Standout (potential) growth sector |

| | | | | | | |
|--|------|---|------|---|---|------------------------------------|
| Wholesale and retail trade; repair of cars and motorcycles | 1.08 | + | 1.20 | + | 1 | Standout (potential) growth sector |
| Transportation and warehousing | 2.34 | + | 2.96 | + | 1 | Standout (potential) growth sector |
| Provision of Accommodation, Food and Beverages | 1.97 | + | 2.40 | + | 1 | Standout (potential) growth sector |
| Information and Communication | 3.29 | + | 3.31 | + | 1 | Standout (potential) growth sector |
| Real Estate | 1.10 | + | 1.05 | + | 1 | Standout (potential) growth sector |
| Company Services | 1.31 | + | 1.46 | + | 1 | Standout (potential) growth sector |
| Health and Social Services | 1.66 | + | 1.56 | + | 1 | Standout (potential) growth sector |
| Other Services | 1.33 | + | 1.96 | + | 1 | Standout (potential) growth sector |

Source: BPS data processed in 2023

Based on Table 3, the results of the MRP analysis indicate that during the period of 2017-2022 in Karanganyar Regency and Central Java Province, there are 10 economic sectors that fall into classification 1. In this classification, when the value is positive (+) and positive (+), it signifies that the sectors demonstrate prominent growth both at the local level in Karanganyar Regency and at the provincial level in Central Java Province. This type of growth is considered dominant.

Considering these findings, it is recommended that the government, particularly the Karanganyar Regency government, focus on developing these ten sectors. By doing so, they can contribute to the increase in Gross Regional Domestic Product (GRDP) in Karanganyar Regency and enhance the well-being of the community. It is crucial to capitalize on the economic potential of the region and promote the growth of these sectors to drive economic development and improve the living standards of the local population.

4.3. Overlays Analysis

Table 4. Results of Overlay Analysis Criterion 1 in Karanganyar Regency in 2017-2022

| | Business field | RPr | | RPs | | Criteria |
|---|---|------|-------|------|-------|----------|
| | | Real | Value | Real | Value | |
| C | Manufacturing Industry | 1.13 | + | 1.35 | + | 1 |
| D | Electricity and gas procurement | 1.12 | + | 1.54 | + | 1 |
| E | Water Supply, Waste Management, Waste and Recycling | 1.35 | + | 1.12 | + | 1 |
| I | Provision of Accommodation, Food and Beverages | 2.40 | + | 1.02 | + | 1 |

Source: BPS data processed in 2023

Based on the Overlay analysis, which combines the results of the LQ and MRP analysis, it has been identified that Karanganyar Regency had four potential economic sectors during the period of 2017-2022. These sectors have shown promising indicators based on growth and contribution criteria. It is recommended that these four potential economic sectors be given priority in terms of development initiatives in Karanganyar Regency.

By prioritizing the development of these sectors, it is expected to foster regional economic improvement and address other economic challenges faced by the region. The focus on these potential sectors can contribute to job creation, income generation, and overall economic growth in Karanganyar Regency. By strategically allocating resources and implementing targeted policies, the government and relevant stakeholders can further enhance the potential of these sectors, leading to long-term economic development and addressing the region's economic concerns.

4.4. Klassen Typology Analysis

Table 5. Estimation of Typology Klassen Karanganyar Regency in 2017-2022

| Quadrant I (Advanced and Fast-Growing Sectors) | Quadrant II (Advanced but underdeveloped sector) |
|--|---|
| <ul style="list-style-type: none"> • Agriculture, Forestry and Fisheries Sector • Manufacturing Industry Sector • Financial and Insurance Services Sector <p>$s_i > s$ and $s_{ki} > s_k$</p> | <ul style="list-style-type: none"> • Electricity and gas procurement • Educational Services Sector <p>$s_i < s$ and $s > s_k$</p> |
| Quadrant III (Potential or growth sectors) | Quadrant IV (Relatively underdeveloped sector) |
| <ul style="list-style-type: none"> • Water Supply, Waste Management, Waste and Recycling • Construction Sector • Wholesale and retail trade; repair of cars and motorcycles | <ul style="list-style-type: none"> • Mining and Quarrying Sector • Information and Communication Sector • Real Estate sector |

| | |
|--|---|
| <ul style="list-style-type: none"> • Transportation and warehousing • Provision of Accommodation, Food and Beverages • Company Services Sector • Other Services Sector <p style="text-align: center;">$s_i > s$ and $s_{ki} < s_k$</p> | <ul style="list-style-type: none"> • Government administration, defense, and mandatory social security sectors • Health services and social activities sector <p style="text-align: center;">$s_i < s$ and $s_{ki} < s_k$</p> |
|--|---|

Source: BPS data processed in 2023

Based on the results of the Klassen Typology Analysis of the GDRP Sector Classification at Constant Prices 2010 in Karanganyar Regency during 2017-2022, the economic sectors are categorized into four quadrants:

1. **Quadrant I - Advanced and Fast Growing Sectors:** This quadrant includes the Agriculture, Forestry and Fisheries Sector, Manufacturing Industry Sector, and Financial Services and Insurance Sector. These sectors have shown significant growth and contribution rates compared to the same sectors in the GRDP of Central Java Province. They are considered advanced and rapidly expanding sectors in Karanganyar Regency.
2. **Quadrant II - Developed but Stressed Sectors:** This quadrant includes the Electricity and Gas Procurement Sector and Education Services Sector. These sectors are relatively developed but face challenges and stresses that require attention and further development efforts.
3. **Quadrant III - Potential or Emerging Sectors:** This quadrant encompasses several sectors, namely the Water Supply, Waste Management, Waste and Recycling Sector; Construction Sector; Wholesale and Retail Trade of Automobile and Motorcycle Repair Sector; Transportation and Warehousing Sector; Accommodation and Food Supply Sector; Corporate Services Sector; and Other Services Sector. These sectors have shown potential for growth and emergence in Karanganyar Regency. They can be considered as opportunities for future development and require focused efforts and policies to realize their potential.
4. **Quadrant IV - Relatively Underdeveloped Sectors:** This quadrant consists of the Mining and Quarrying Sector; Information and Communication Sector; Real Estate Sector; Government Administration, Defense and Compulsory Social Security Sector; and Health Services and Social Activities Sector. These sectors are relatively underdeveloped and need attention and support for growth and improvement.

Among these categories, the Agriculture, Forestry and Fisheries Sector; Manufacturing Industry Sector; and Financial Services and Insurance Sector stand out as potential sectors for advancement and rapid growth in Karanganyar Regency during 2017-2022. These sectors have demonstrated higher average growth rates and contributions compared to the corresponding sectors in the GRDP of Central Java Province. It is recommended that the government prioritize these three potential sectors based on the Klassen Typology Analysis for further development initiatives in Karanganyar Regency. By focusing on these sectors, the government can address

economic challenges, create opportunities for other non-potential sectors to grow, and promote overall economic development in the region.

5. CONCLUSION

In conclusion, the analysis of the economic sectors in Karanganyar Regency from 2017 to 2022 reveals several key findings. Firstly, among the 17 economic sectors, 5 sectors are classified as basic or leading sectors, including Manufacturing Industry, Electricity and Gas Procurement, Water Procurement, Waste Management, Waste and Recycling, Accommodation and Food Services, and Financial Services and Insurance. These sectors are expected to drive economic growth and improve the overall economic sector in Karanganyar Regency. Secondly, based on growth criteria and MRP calculations, 10 sectors show significant growth and contribution, such as Wholesale and Retail Trade, Transportation and Warehousing, and Information and Communication. Thirdly, the Overlay analysis identifies 4 sectors, including Manufacturing Industry and Accommodation and Food Services, which exhibit substantial growth and contribute significantly to the GRDP and overall development in Karanganyar Regency. Lastly, the Klassen Typology analysis highlights 3 sectors - Agriculture, Forestry and Fisheries, Manufacturing Industry, and Financial Services and Insurance - as rapidly developing and growing sectors.

To enhance regional economic growth, the Karanganyar Regency Government should prioritize the base sectors while also paying attention to the non-base sectors. It is crucial to maintain and develop the potential sectors, which can have a multiplier effect on other sectors. Specifically, the Agriculture, Forestry and Fisheries sector, Manufacturing Industry sector, and Financial Services and Insurance sector should be nurtured and further developed. This can be achieved through policies that promote environmentally friendly local industries, improved communication among farmer groups, involvement of Micro, Small, and Medium Enterprises (MSMEs) in the industrial sector, and support for business capital in the financial services and insurance sectors. For future researchers, it is recommended to conduct studies with a similar research focus, while incorporating additional variables or methods related to economic potential. This will help address the limitations identified in this study and contribute to a more comprehensive understanding of the economic landscape in Karanganyar Regency.

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