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Identify Leading Sectors to Accelerate Regional Economic Growth

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ABSTRACT

The establishment of regional autonomy in Indonesia gives greater authority to each region in managing its own government affairs, including in terms of economic development and development. This study aims to analyze the leading sectors of Sleman regency to determine the direction of regional economic development. This research used quantitative methods. The data used is secondary data, GRDP for the 2010-2021 period in Sleman regency, Yogyakarta Special Region province. In this study, the Location Quotient (LQ) model was used to identify the base and non-base sectors in the Sleman district economy. The assessment of these sectors is based on Gross Regional Domestic Product at constant prices. Klasen typology was used to identify the leading sectors in the regional economy. The results showed that as many as ten sectors in Sleman regency became base sectors during the period 2010-2021. The conclusion from this research is that Sleman regency has ten leading sectors in the regional economy. Therefore, this research can be used as a reference for the Sleman district government to focus on developing these leading sectors to accelerate economic growth.

Keywords: Economic Development; Economic Growth; Leading Sector; Regional Economic

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INTRODUCTION

The implementation of regional autonomy and regional development to increase economic development by focusing on potential sectors in the region. Economic development is the process by which communities and local governments manage the resources that are available and create a relationship with the private sector to boost employment and the local economy (Ukubassova, Daribayeva, Toxanova, Zhenskhan, & Mukhamejanova, 2020). Taking into account population growth and the fundamental development of the economic structure that the community can feel, increased economic development is one of the development goals that is a key indicator of the success of economic development related to real income and per capita income. Increased economic development at the regional level is known to be associated with various factors such as policy, innovation ecosystems, and strategic planning. Regional economic development and policy focus on understanding why some regions grow and prosper while others lag and decline. Therefore, increased economic development at the regional level is known to be influenced by a combination of factors such as policy, strategic planning, and collaboration.

An important indication of the condition of the economy in a given period is based on the amount of Gross Regional Domestic Product (GRDP) at constant prices. Planning and decision-making can benefit greatly from the use of GRDP, one of the metrics used to assess how successfully local governments are utilising the resources at their disposal. The trade, hotel and restaurant, finance, transportation, and communication sectors, as well as the rental and corporate services, are all included in the tertiary sector. A fixed base year's prices are used to calculate the value of an economy's output in real terms, which captures actual output growth by eliminating inflationary effects. Typically, GRDP is reported in both nominal and real terms. Nominal GRDP measures the worth of an economy's output at current prices. In summary, GRDP is a crucial measure of a region's economic activity, providing valuable insights into the size and growth of the regional economy. It is an important tool for policymakers, investors, and businesses in strategic decision-making at the regional level.

The establishment of regional autonomy in Indonesia has granted greater authority to each region in managing its own government affairs, including economic development. However, the progress of regional autonomy and its impact on development have been the subject of extensive analysis. Several studies have highlighted that many regions have not fully optimized their economic potential and regional original revenue, and fiscal decentralization has not yet optimally impacted sectors such as education, health, and social services (Subroto & Baidlowi, 2020). Additionally, the economic dimension of regional autonomy has been found to be underutilized in several regions, with only a few regions seriously leveraging their natural economic potential. While regional autonomy has encouraged a democratic culture and horizontal accountability, it has also been associated with challenges such as weak performance of democratic institutions and inconsistencies in laws and regulations. The economic effect of regional autonomy is a matter of debate, with some studies suggesting its positive impact on economic growth and welfare, while others indicate that it is not always beneficial (Prabowo, Supriyono, Noor, & Muluk, 2021). The implementation of special autonomy policies in specific provinces, such as Papua, has also faced challenges in effectively boosting community welfare and addressing development issues (Prabowo, Supriyono, Noor, & Muluk, 2021). These findings reflect the complex and multifaceted nature of regional autonomy and its implications for economic development and welfare in Indonesia.

Improving the economic welfare of the people in a region will increase the level of competitiveness of the community both at the local and national levels as a whole (Surya et al., 2021). Improving the economic welfare of the people in a region can have a positive impact on the competitiveness of the community at both the local and national levels. This is because a higher level of economic welfare can lead to increased productivity, innovation, and investment, which can in turn drive economic growth and development. Competitiveness is the engine of economic growth, as it motivates businesses to boost their productivity, allocate resources to innovation, research, and development, and improve the standard of living for the people (Moonti, 2019). When a region has a higher level of economic welfare, it can attract more investment, both domestic and foreign, which can further drive economic growth and development (Vîrjan et al., 2023). This can lead to an increase in aggregate supply, resulting in a rise in employment and, consequently, a rise in the standard of living and social and economic welfare. Additionally, a higher level of economic welfare can help a region to attract international investment, which can provide enterprises with capital, technology, and other resources necessary for growth and development. In order to achieve this level of competitiveness, the local government needs to evaluate the economic conditions in the area. After the evaluation, the local government can set the right policy to develop potential economic sectors (Hajighasemi, Oghazi, Aliyari, & Pashkevich, 2022).

Improving the economic welfare of the people in a region can have a positive impact on the competitiveness of the community at both the local and national levels. This can lead to increased productivity, innovation, investment, and economic growth, ultimately benefiting the people and the region as a whole. Thus, the policy taken is the right policy to solve the root of the problems that arise. The purpose of this study is to analyse Sleman regency's strongest sectors in order to forecast the future course of the local economy. The purpose of this research is to identify the key industries that should receive the attention of the Sleman regency government for development.

LITERATURE REVIEW

The goal of developing a region's economic potential is to spur economic growth to the point that the top industry in the area serves as a gauge for the effectiveness of regional development. By promoting economic activity throughout all regions, regional development policies, also known as place-based policies, seek to lessen regional inequities (Cheymetova & Nazmutdinova, 2015; Setiawan, 2018). Communities need to have a solid economic development plan in place in order to effectively position themselves for investment through opportunity zones. This plan should demonstrate to the private sector that the community has identified its significant assets and challenges, established a clear future vision, and engaged key stakeholders (Yuzvovich et al., 2020). The leading economic sector in a region can vary based on the specific characteristics and resources of that region (Faid, Bambang, & Maryono, 2018). However, the circular economy is gaining prominence as a sustainable economic model that encompasses production, consumption, distribution, and maintenance processes across various sectors (García-Sánchez, Somohano-Rodríguez, Amor-Esteban, & Frías-Aceituno, 2021). Additionally, an innovation system that includes all economic sectors provides a means of classifying information about the actors involved in driving economic growth and development (Javeed & Lefen, 2019).

In determining the economic base of a region, a commonly used approach is the Location Quotient (LQ) method. Location quotients are especially useful for economic and workforce development planners in identifying both the distinguishing industries and commonalities between regional economies. Provide vital information to assist with regional planning initiatives. This information can also be used to entice potential

employers to relocate to areas with concentrated industries. The contribution of a region as a supplier or importer of an economic activity or sector within the region is ascertained through the application of LQ analysis (Surya et al., 2021). Measuring the relative concentration of economic activity to identify the leading sector as the leading sector of an economic activity is one use of LQ analysis as an indicator to identify the leading sector. When a district's observed sector grows at a faster pace than the same sector's growth in the province or reference area, it is indicated by a calculated LQ value larger than 1. This suggests that the industry is the foundational sector of the local economy.

One method of calculating Location Quotient (Q) that accounts for the rate of variation in the economic sector's output growth over time is the Dynamic Location Quotient (DLQ) method. DLQ takes into account both the overall economic growth rate over a certain time period and the growth rate of an observed sector (Panagiotopoulos & Kaliampakos, 2021). The outcome of the DLQ analysis indicates a sector's future ability to serve as an economic base (Meyer & Niyimbanira, 2021). The DLQ analysis considers the diversification, linkage, and quickness of a sector. Diversification refers to the variety of industries within a sector, linkage measures the interconnections between the sector and the rest of the economy, and quickness assesses the potential for rapid growth and adaptation (Gault, 2018). The technique used to identify the contribution of an economic sector to the economy and its prospects is to combine LQ and DLQ.

The technique used to identify the contribution of an economic sector to the economy and its prospects involves a combined analysis of static and dynamic Location Quotient (LQ), Shift-Share, and Growth Ratio Model (MRP) (Putra & Pratiwi, 2019). This method has been employed in studies aiming to identify the leading sectors in a specific region and to develop future economic strategies to enhance competitiveness. The analysis includes assessing the GDP growth value, sector's contribution to GDP, and the demand for goods and services to determine the potential of economic sectors for growth and development (Kharisma et al., 2021). Additionally, other methods such as comparing the GDP and value added of different sectors, evaluating employment and wage trends, and measuring sector synergies through correlation analysis, regression analysis, or structural equation modelling are also used to assess the strength, interdependence, and potential synergies of economic sectors (Comerio & Strozzi, 2019; Susilo, 2023).

The Location Quotient (LQ) and Dynamic Location Quotient (DLQ) techniques are used in economic analysis to identify the contribution of an economic sector to the economy and its prospects. The LQ technique is a static analysis that compares the proportion of a specific sector's output in a region to the proportion of the same sector's output in a larger reference region (Patiung & Wisnujati, 2020). If the LQ value is greater than one, the sector is considered a base sector, while a value less than one indicates a non-base sector. The DLQ technique is a dynamic analysis that considers the growth rate of a sector's output over time (Isabhandia & Setiartiti, 2021). The DLQ value is calculated by dividing the growth rate of a sector's output in a region by the growth rate of the same sector's output in a larger reference region (Anshar, Sirajuddin, Rezki, & Kusmiran, 2022). The combination of LQ and DLQ analysis is used to determine the leading sectors in a specific region and to develop future economic strategies to enhance competitiveness (Kharisma et al., 2021). These techniques are employed in various studies to assess the strength, interdependence, and potential synergies of economic sectors.

The economic base sector of a region can be discovered using the Klassen Typology analysis indicator. By comparing an observed region's economic growth to that of the reference region, this method can be used to classify a region's economic sector (Munandar, Musdholifah, & Arsyad, 2018). Provincial economic data can be utilised as

a comparison if the district or city is the subject of an economic growth analysis (Bansal, Sharma, Rahman, Yadav, & Garg, 2021). The Klassen Typology analysis's findings can be used to explain the proportion and growth position of a region's firms, commodities, subsectors, and sectors that make up its regional variables (Maryunani, 2023; Munandar, Musdholifah, & Arsyad, 2018).

RESEARCH METHOD

This study employs quantitative methodologies. Secondary data, GRDP for the period 2010-2021 in Sleman regency, Yogyakarta Special Region province, was used. Location Quotient (LQ) analysis, Dynamic Location Quotient (DLQ), and Klasen Typology are the analytical approaches used.

Location Quotien (LQ) Analysis

To determine the basic and non-basic sectors in Sleman regency, the Location Quotien (LQ) analysis method was used. This method is a model that can help show the export advantage of the economy in a region or the degree of self-sufficiency in a sector.

$$LQ = \frac{Xi \ / \ xj}{Yi \ / \ Y}$$

Dynamic Location Quotient (DLQ) Analysis

To complement the LQ method, Dynamic Location Quotient (DLQ) analysis is used. By using this method we are able to determine the role of priority sectors, as it can provide more accurate results by referring to the growth rate of economic sectors.

$$\text{DLQ} = (1 + \text{Gin})/(1 + \text{Gn})\ (1 + \text{Gi})/(1 + \text{G})\ t$$

Klasen Typology Analysis

A useful tool for identifying a region's economic base sector is the Klassen Typology. By comparing an observed region's economic growth to that of the reference region, this method can be used to classify a region's economic sectors. The province economic data might serve as a point of comparison when doing an economic growth analysis on a district or city. The Klassen Typology analysis results can be used to show how sectors, subsectors, enterprises, or commodities that make up regional variables in a region are growing and what their contribution is.

Figure 1. Klasen Typology Quadrant

Quadrant I Base Sector, Prospective	Quadrant III Base Sector, Non Prospective
Quadrant II Non Base Sector, Prospective	Quadrant IV Non Base Sector, Non Prospective

The combination of LQ and DLQ values is used as the basis for grouping each economic activity into a Klassen Typology chart. The Klassen Typology chart contains four quadrants of economic sector projections based on the calculated LQ and DLQ values.

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RESULTS

Finding the top sector can be done using indicators such as LQ analysis. A leading sector with the ability to boost the local economy is one whose coefficient value of LQ is greater than one; if, on the other hand, the sector's output is limited to consumption in the region in question, then LQ coefficient value < 1 indicates that it is not a leading sector.

Table 1. Location Quotient (LQ) and Dynamic Location Quotient (DLQ) Analysis of Sleman Regency GRDP 2010-2021

Business Field (GRDP)	LQ	DLQ	Interpretation	
			LQ	DLQ
Agriculture, Forestry, and Fisheries	1,131	1,000	Base	Non-Prospective
Mining and Quarrying	1,357	0,992	Base	Non-Prospective
Processing Industry	0,952	0,993	Non-Base	Non-Prospective
Electricity and Gas Procurement	1,495	1,030	Base	Prospective
Water Procurement and Waste Management	2,093	1,013	Base	Prospective
Construction	0,862	1,019	Non-Base	Prospective
Wholesale and Retail Trade	1,075	0,994	Base	Non-Prospective
Transportation and Warehousing	0,818	1,086	Non-Base	Prospective
Accommodation Provision	0,933	1,014	Non-Base	Prospective
Information and Communication	1,278	1,022	Base	Prospective
Financial Services and Insurance	1,135	0,990	Base	Non-Prospective
Real Estate	0,917	0,989	Non-Base	Non-Prospective
Company Services	0,675	1,012	Non-Base	Prospective
Government Administration and Others	1,136	0,989	Base	Non-Prospective
Education Services	0,904	0,999	Non-Base	Non-Prospective
Health Services and Social Activities	1,109	0,993	Base	Non-Prospective
Other Services	1,210	1,048	Base	Prospective

From table 1 above, it is found that there are 11 sectors that are superior sectors that have an LQ > 1 value in Sleman regency. From the above results, Sleman regency has leading sectors that have potential for the regional economy sectorally. Looking at the number of sectors that are leading sectors in Sleman regency needs to show that there is still a lot of potential that can be developed.

Subsequently, DLQ analysis (Table 1) reveals that five of the eight sectors exhibiting high growth rates are either leading sectors in Sleman regency or have LQ values greater than 1. The procurement of electricity, water, information and communication, and other services are the top four industries with the fastest DLQ values. The transportation and warehousing, corporate services, accommodation provision, and construction industries are the other four that are growing quickly.

Figure 2. Klasen Typology Analysis

Quadrant I Base Sector, Prospective • Electricity and Gas Procurement • Water Procurement and Waste Management • Information and Communication • Other services	Quadrant III Base Sector, Non Prospective • Agriculture, Forestry and Fisheries • Mining and Quarrying • Wholesale and Retail Trade • Financial Services and Insurance • Health Services and Social Activities • Government Administration and Others
Quadrant II Non Base Sector, Prospective • Construction • Transportation and Warehousing • Accommodation Provision • Company Services	Quadrant IV Non Base Sector, Non Prospective • Processing Industry • Real Estate • Education Services

The sectors that form the base and have the potential for future development are displayed in the results of the analysis of Klasen's Typology, Quadrant I. There are four areas in quadrant I: information and communication, waste management, water procurement and procurement, and procurement of electricity and gas. Given that this industry is beginning to flourish, one of the potential areas is the building industry. The building of infrastructure that starts to provide access while creating jobs during the development phase is one of the fantastic opportunities that propels this.

Though the trade sector is the foundation of Sleman regency, it still has less potential for development than the building and transportation sectors, which have significant potential to draw investors. The expansion of this industry will enhance the flow of capital into Sleman regency in addition to generating employment and stimulating the economy. Policy makers can also develop the economic sectors in quadrant II. The development of interregional infrastructure and consequent open access plays a major role in bolstering the growth of Quadrant II sectors.

DISCUSSION

The centralized national government system to one that emphasizes regional autonomy was motivated by the recognition that a centralized system could not effectively administer Indonesia's large and diverse population. The aim was to empower strong and competent regional governments to better address the country's diverse socio-cultural and religious background (Boğa & Topcu, 2020). The policy of regional autonomy in Indonesia has been a subject of multidimensional analysis, encompassing political complexity, legal frameworks, economic development, and its social and cultural impact (Dewi et al., 2020).

Research has aimed to determine the effects of regional autonomy on economic growth and societal welfare, with findings indicating both significant and insignificant effects on economic growth. The relationship between regional autonomy and economic growth has been theoretically supported, and it is expected that the policy of regional autonomy will contribute to improving the welfare of society (Mathonnat & Minea, 2019).

The relationship between regional autonomy and economic growth has been a subject of theoretical support and empirical studies. In theory, regional autonomy is expected to bring welfare and benefits to society by bringing local government closer to the people (Maryunani, 2023). However, the actual impact of regional autonomy on economic growth and welfare is a matter of debate. Some studies suggest that regional autonomy can foster economic growth and improve welfare, while others indicate that it is not always beneficial to economic growth. For example, a study on the implementation of regional autonomy in Indonesia aims to evaluate its impact on welfare by using capital expenditure and growth as intervening variables. Another study discusses the implementation of special autonomy in the Papua province of Indonesia, highlighting challenges and the lack of substantial improvements in welfare and development policies. These findings reflect the complex and context-specific nature of the relationship between regional autonomy, economic growth, and welfare.

In addition, the implementation of regional autonomy in Indonesia has been accompanied by the delegation of a considerable part of the central government's responsibilities to the regional level. This has raised questions about the legal relationships between the central government and the provinces, regencies, and cities, as well as the extent of Jakarta's authority in relation to regional regulations (Rehman et al., 2020). In summary, the establishment of regional autonomy in Indonesia has brought about significant changes in the governance structure, with implications for economic development, legal frameworks, and the balance of power. The impact of these changes on economic growth, societal welfare, and the overall development of the country continues to be a subject of research and analysis (Rehman et al., 2020).

The impact of regional autonomy on economic growth, societal welfare, and overall development is a subject of ongoing research and analysis. Several studies have been conducted to evaluate the implementation of regional autonomy and its effects on economic growth and welfare in various regions of Indonesia. One study conducted in Yogyakarta found that investment and regional autonomy do not affect economic growth, while labor force and monetary crisis negatively affect it. Another study aimed to evaluate the implementation of regional autonomy in Indonesia, using capital expenditure and growth as intervening variables to assess its impact on welfare. Additionally, a study in East Java discussed the increasing importance of regional autonomy for economic development and its role in fostering growth for a welfare society. Furthermore, a study in Aceh assessed the impact of special autonomy on the convergence of regional economic growth and found a significant convergence of economic growth after the implementation of special autonomy. Another study evaluated the success rate of implementing regional autonomy in the Sumatra region from a welfare aspect, finding a 64.78% success rate over 20 years. These studies reflect the complex and context-specific nature of the relationship between regional autonomy, economic growth, and welfare. While some findings suggest a positive impact, others indicate challenges and the need for comprehensive handling to achieve the desired outcomes. The impact of regional autonomy on economic growth, societal welfare, and overall development is influenced by various factors and requires ongoing research and analysis to understand its full implications.

The development of leading sectors to accelerate economic growth in the region is a local government effort that needs several strategies. Governments in emerging economies can play a crucial role in boosting and sustaining economic growth by focusing on public-sector efficiency and competitive dynamics for companies. This includes creating an environment with fewer regulatory and tax barriers to encourage business creation and improved efficiency, which in turn stimulates economic growth (Mahmood, Tanveer, & Furqan, 2021). Leading Economic Growth programs emphasize the need for new growth strategies, paths, processes, and organizations to address the lack of productive capability in promoting economic activity (Yuzvovich et al., 2020). These programs aim to develop contextually-driven strategies for growth and expand a country's productive capabilities, ultimately charting the road ahead for economic growth (Boustan, Kahn, Rhode, & Yanguas, 2020). The goal of raising economic capacity involves emphasizing the economy's supply side, which includes faster productivity growth and economic growth (Surya et al., 2021). This approach focuses on developing the productive capabilities of a country to drive economic growth and create good jobs (Arifin, Maipita, & Hutasuhut, 2020). Governments can accelerate economic growth by focusing on public-sector efficiency, stimulating growth and productive capabilities, emphasizing the supply side of the economy, identifying key industries, and fostering partnerships and programs to support economic growth and trade (Corriveau, 2021). These strategies can contribute to sustained and inclusive economic development (Mukhametzhan, Junusbekova, & Daueshov, 2020).

CONCLUSION

The results showed that as many as ten sectors in Sleman regency became the base sector during the 2010-2021 period. The conclusion of this research is that Sleman regency has eleven leading sectors in the regional economy. There are 11 sectors that are leading sectors that have an LQ > 1 value in Sleman regency. From the above results, sectorally, Sleman regency has leading sectors that have potential for the regional economy. There are eight sectors that experience a fast growth rate and four of them are leading sectors in Sleman regency. The electricity procurement industry, the water procurement sector, the information and communication sector, and the other services sector are the top four sectors with quick DLQ values. In the meantime, the following four industries are growing quickly but are not in the top four: corporate services, accommodation supply, transportation and warehousing, and construction. As a result, the Sleman regency government can use this research as a guide to concentrate on growing these key industries in order to speed up economic growth. The growth of key sectors in Sleman regency is greatly aided by the openness of investment access brought about by interregional infrastructural development.

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DECLARATION OF CONFLICTING INTERESTS

The authors declare that they have no financial, personal, or professional relationships that could influence or bias the content of this article.

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