



Economic Sector Contribution to the Gross Regional Domestic Product (GRDP) Growth in Karangasem Regency, Bali

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Abstract. The objective of this study is to gain insight into the contribution of different economic sectors to the growth of gross regional domestic product (GRDP) in Karangasem Regency, Bali. By analyzing economic data and related indicators, this study aims to elucidate the role of each sector in advancing the regional economy as a whole. This study will examine trends and patterns in key sectors, including agriculture, industry, and services, to gain insight into the dynamics of economic growth in Karangasem. The data is analyzed using several techniques, including Location Quotient (LQ), Growth Ratio Model (GRM), and Overlay. The findings of the study indicate that six economic sectors can be classified as either basic or leading sectors. These include the agriculture, forestry, and fisheries sectors; mining and quarrying; transportation and warehousing; financial services and insurance; government administration, defense, and compulsory social security; and other service sectors. These sectors are classified as leading sectors due to their high growth rates and significant contributions to GRDP. Additionally, sectors such as transportation and warehousing, corporate services, government administration, defense, and compulsory social security, and health services and social activities are designated as potential sectors, given that their contributions to GRDP are positive but their growth rates remain relatively slow.

Keywords: Contribution of Economic Sectors, Gross Regional Domestic Product, Karangasem Regency, Location Quotient

1 Introduction

The implementation of Regional Autonomy Law No. 23 of 2014 confers authority and flexibility upon regions, enabling them to devise economic development strategies that are tailored to the inherent potential of their respective regions. This autonomy affords regions the flexibility to establish targets for enhancing economic growth, thereby creating optimal employment opportunities that are characterized by both quantity and quality. As emphasized by Hawanda et al. (2022), endeavors to enhance regional economic growth as a benchmark for development are inextricably linked to the inherent potential of the region, particularly in terms of its resources and regional capabilities. The success of development efforts can be gauged by examining key

indicators such as economic growth, economic structure, and the extent of inequality between residents, regions, and sectors (Marini, 2016).

As posited by Sadono Sukirno and referenced by Utari and colleagues, economic growth necessitates the introduction of production activities in a specified region (Sukirno, 2015). This, in turn, elevates per capita income and ultimately optimizes the quality of life for individual members of society (Utari et al., 2016). Economic growth serves as a crucial metric for evaluating the economic well-being of a region (Soelistyo, 2016). This growth trajectory is typically gauged through indicators such as the Gross Domestic Product (GDP) or the Gross Regional Domestic Product (GRDP) (Adisasmita, 2013). It is emphasized that economic growth is closely related to the resources owned by a region and its capacity to utilize these resources effectively. The gross regional domestic product (GRDP) is a measure of the total value added by all business entities within a defined geographical area, reflecting the total value of final goods and services produced by economic units. It is therefore crucial to comprehend the role of disparate economic sectors (such as agriculture, industry, and services) in driving GRDP growth.

The calculation of GRDP at current prices provides a snapshot of the value added of goods and services, utilizing prices that are current at the time of assessment. This approach provides a contemporaneous view of economic activity, reflecting the immediate impact of price changes and market dynamics on a region's economic output. Conversely, the GRDP calculated at constant prices provides a more stable and consistent measure by utilizing prices set in a particular base year. By maintaining a constant price level over time, this methodology allows for the separation of genuine economic growth from the impact of price volatility. This provides a more profound comprehension of the intrinsic trends and patterns in economic activity, uninfluenced by inflationary or deflationary pressures. The two methodologies are mutually reinforcing, providing distinct insights into economic activity and enabling analysts to comprehend the intrinsic growth dynamics.

A comprehensive understanding of the contribution of each economic sector to gross regional domestic product (GRDP) is vital to facilitating economic growth in Karangasem Regency. Attaining high levels of economic growth is of considerable strategic importance for several reasons, including the improvement of living standards, the creation of employment opportunities, the enhancement of productivity, and the promotion of income equality. The attainment of these objectives is contingent upon the realization of sustainable economic growth. However, data presented by the Bali Provincial Statistics Agency indicates that the economic growth of Karangasem Regency is among the lowest in comparison to other regencies and cities in Bali (see Figure 1).

In 2022, the economic growth rate was recorded at 2.58 percent, with a slight increase to 3.1 percent in 2023 (BPS, 2023). This low economic growth represents a significant challenge for the regional government in fulfilling its obligations, particularly in terms of improving the quality of life for the community. To achieve this, the government must be able to increase its income by providing employment opportunities, access to healthcare, education, and other essential services, including a sense of security. This highlights the pressing need to ascertain the impediments to robust economic growth in Karangasem Regency and to devise efficacious strategies to reinforce economic performance in pivotal sectors. A clear understanding of the contribution of specific

sectors to GDP, coupled with an analysis of the constraints to growth, will enable policymakers and stakeholders to develop strategies to revitalise economic growth and advance socio-economic development in the region.

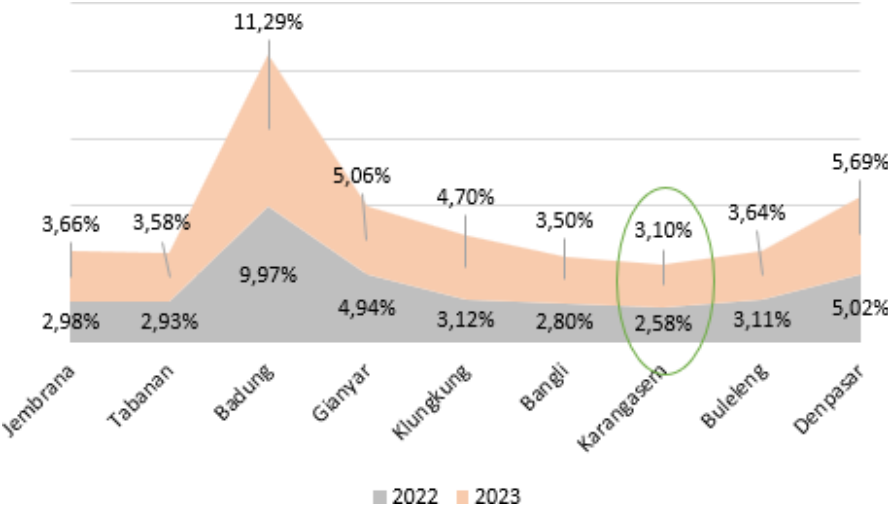


Figure 1. Economic growth of each district/city 2022-2023

As posited by Hawanda et al. (2022), the growth of regional economies is a key indicator of development, and this growth cannot be dissociated from the inherent potential of the region, particularly in terms of regional potential. Effective economic development hinges on meticulous planning. It is therefore crucial for regions to be able to identify and analyze economic potential, and to select priority sectors that align with existing potential (Hawanda et al., 2022). Satria (2014) posited that the acceleration of regional economic growth can be achieved by the triggering of growth centres. Furthermore, Sutiyo and Maharjan (2017) posit that development planning in the era of regional autonomy will be successful if it is carried out by prioritizing the potential and superior sectors of each region.

This research aims to ascertain the extent of the contribution made by various economic sectors, such as agriculture, tourism, industry, and so forth, to the Gross Regional Domestic Product (GRDP) of Karangasem Regency. It is crucial to ascertain which sectors exert the most significant influence on regional economic growth. The objective of this study is to identify the economic sectors that provide the most significant contribution to the GRDP in Karangasem Regency. The identification of economic potential can serve as a foundation for the formulation of effective economic development policies, which can in turn support economic growth in the region.

2 Methodology

2.1 Research approach and research location

This study employs a survey methodology to examine economic sectors within Karangasem Regency. The research was conducted in eight sub-districts of Karangasem Regency, including The research encompasses the Karangasem District, Manggis District, Abang District, Kubu District, Bebandet District, Rendang District, Selat District, and Sidemen District.

2.2 Data and data collection techniques

The data required for this study are primary, specifically about the economic sectors present in each sub-district. The data were collected through observation and interviews with sub-district government officials and economic sector actors in the field. Secondary data were gathered through the utilization of documentation techniques, regarding the Karangasem Regency in Figures and Sub-districts in Figures documents from 2019 to 2023, obtained from the Regency BPS and the Sub-district Profile and Monograph documents.

2.3 Data Analysis Techniques

Several analysis techniques used in this study are described as follows:

Determining Superior Potential with Location Quotient (LQ). The analysis was conducted by comparing the provincial GRDP and Regional GDP based on Constant Prices according to the business field this year and the previous year. The analysis is formulated as follows:

$$LQ = (X_{ij}/X_j):(Y_i/Y)$$

- LQ : Location Quotient Index
- X_{ij} : GRDP value of sector i in one region
- X_j : Total GRDP value in one region
- Y_i : GRDP value of sector in other reference provinces or regions
- Y : Total GRDP value in other reference provinces or regions

Shift Share Analysis (SSA). Shift Share Analysis (SSA) to measure the competitive advantage of regional subsectors based on their growth rates (Muta'ali, 2015). The analysis is formulated as follows:

$$D_{ij} = N_{ij} + M_{ij} + C_{ij}$$

- D_{ij} : change in GRDP of sector/sub-sector i in region (province)
- N_{ij} : change in GDP of sector/sub-sector i nationally caused by the influence of national economic growth;

M_{ij} : change in GRDP of sector/sub-sector i in study area (province) caused by the influence of growth of sector i nationally

C_{ij} : change in GRDP of sector/sub-sector i in region caused by competitive advantage of sector i in the region

Sector Typology Analysis. A Sector Typology Analysis seeks to identify the positioning of leading economic sectors through an investigation of the sectoral growth ratio (SSA) and the concentration of economic activity (LQ). The two components, SSA and LQ, are expressed in a flat plane, with the SSA value represented on the vertical axis (y) and the LQ value on the horizontal axis (x). This allows for the identification of four categories of relative position of the regional economy, as illustrated in the following Table 1:Shift Share Analysis (SSA) to measure the competitive advantage of regional subsectors based on their growth rates.

Table 1. Sector typology matrix

Location quotient (LQ)	Shift Share Analysis (SSA)	
	Negative (-)	Positive (+)
Positive (+/>1)	Quadrant II Potential sectors or those that can still develop rapidly	Quadrant I Advanced and fast-growing sectors
Negative (-/<1)	Quadrant IV Relatively lagging sector	Quadrant III Advanced but depressed sector

3 Result and Discussion

3.1 Result

The Location Question theory, as proposed by Bendavid (1991), is used to analyze the diversity of economic bases. Economic sectors that have an LQ coefficient value > 1 indicate that the sector is a base sector, meaning that this sector, in addition to being able to meet the needs in Karangasem Regency itself, also has export potential to other regions because there is a surplus in the sector concerned. Meanwhile, sectors that have an $LQ < 1$ are often also referred to as non-base sectors, that the sector has not been able to provide a large contribution to the economy of Karangasem Regency.

In light of the findings of the LQ calculation, it can be posited that six business sectors can be categorised as either base or leading sectors. These sectors comprise agriculture, forestry and fisheries; mining and quarrying; transportation and warehousing; financial services and insurance; government administration, defence and mandatory social security; as well as other services. Conversely, non-basic sectors are those with lower potential but serve as supporting sectors for base or service industries. The category of non-basic sectors encompasses eleven distinct areas, including the manufacturing industry, electricity and gas supply, water supply, waste management and recycling, construction, wholesale and retail trade, automotive repair, accommodation and food services, information and communication, real estate, corporate services, education, and health and social services.

Table 2. Shift share analysis results

Business Field	Regional share	Proportional shift	Differential shift	Competitive or not
Agricultural, Forestry, and Fisheries	14,615.69	-16,089.41	3,782.51	Competitive
Mining and Quarrying	1,958.74	-1,787.07	1,644.64	Competitive
Processing industry	2,410.68	-2,242.80	147.63	Competitive
Electricity and Gas Procurement	52.33	-31.89	4.84	Competitive
Water Supply, Waste Management and Recycling	94.99	-101.37	29.59	Competitive
Construction	4,021.55	-3,673.00	1,052.23	Competitive
Wholesale and Retail Trade; Car and Motorcycle Repair	3,392.37	-2,971.64	-64.21	Not comp.
Transportation and Warehousing	8,647.03	-9,827.14	- 2,237.88	Not comp.
Accommodation, Food and Beverage	4,547.83	-6,189.65	- 1,483.63	Not comp.
Information and Communication	2,745.87	-1,447.59	426.32	Competitive
Financial Services and Insurance	2,668.20	-949.99	802.00	Competitive
Real Estate	2,780.72	-2,281.86	158.79	Competitive
Corporate Services	467.40	-288.81	-80.63	Not comp.
Government Adm., Defense and Compulsory Social Sec.	4,857.24	-5,925.72	-432.58	Not comp.
Educational Services	1,646.52	-1,658.81	168.51	Competitive
Health Services and Social Activities	1,443.66	-645.51	-22.69	Not comp.
Other services	1,373.09	-783.96	16.93	Competitive

The PDRB approach is employed in the Klassen Typology analysis, specifically the growth rate and the contribution of PDRB for each business field type within the analysis area (Karangasem Regency) in comparison to Bali Province, which serves as a reference point. The Klassen Typology analysis identifies four distinct groups of business sectors: advanced and rapidly growing, advanced but experiencing depressed growth, potential, and lagging. These categories are defined in detail by Putra and Saptutyningasih (2017).

Table 3. Klassen typology analysis results

Location Quotient (LQ)	Shift Share Analysis (SSA)	
	Negative (-)	Positive (+)
Positive (+/>1)	Quadrant II Manufacturing Industry; Construction; Information and Communication; Education Services	Quadrant I Agriculture, Forestry, and Fisheries; Mining and Quarrying; Electricity and Gas Supply; Water Supply, Waste Management, Waste and Re-cycling; Financial Services and Insurance; Real Estate; Other Services
Negative (-/<1)	Quadrant IV Wholesale and Retail Trade, Car and Motorcycle Repair; Accommodation and Food and Beverages	Quadrant III Transportation and Warehousing; Corporate Services; Government Administration, Defense and Compulsory Social Security; Health Services and Social Activities

3.2 Discussion

The analysis of the Klassen typology, when considered alongside the results of the data calculations, serves to elucidate the economic landscape of Karangasem Regency, thereby underscoring the pivotal role played by certain sectors in contributing to the region's gross regional domestic product (GRDP). The sectors of agriculture, forestry, and fisheries; mining and excavation; electricity and gas supply; water supply, waste management, and waste recycling; financial services and insurance; real estate; and other services are identified as the most prominent sectors. These sectors not only represent a substantial portion of the regional economy but also exhibit robust growth, thereby positioning them as critical drivers of Karangasem's economic development. The robust performance of these sectors suggests that they are well-established and likely to benefit from both regional resources and favorable economic conditions.

Conversely, sectors such as transportation and warehousing, corporate services, government administration, defense, and compulsory social security, and health services and social activities, despite being identified as potential growth areas, are expanding at a relatively slower pace. The positive contribution of these sectors to the GRDP indicates their importance to the regional economy. However, the slower growth rate suggests that there may be challenges or constraints hindering their full potential. Further analysis is required to gain insight into the underlying factors affecting these sectors and to identify strategies for accelerating their growth. This may entail the resolution of infrastructure deficiencies, the provision of policy assistance, or the improvement of the business environment within these sectors.

In contrast, sectors such as manufacturing, construction, information and communication, and education services are categorized as developing sectors. Although their contribution to the GRDP is currently insignificant, the favorable growth trends indicate the potential for future expansion in these sectors. It would be beneficial for these sectors to receive targeted investments and supportive policies to enhance their role in the economy. Promoting growth in these sectors has the potential to diversify the economic base of Karangasem, thus enhancing resilience to sector-specific

downturns. Conversely, the sectors of wholesale and retail trade, car and motorcycle repair, and the provision of accommodation, food, and beverages are categorized as lagging. These sectors contribute only marginally to the gross regional product and exhibit slow growth. It is imperative to address the challenges within these sectors to prevent further decline and ascertain the possibility of revitalization or the reallocation of resources to more promising economic sectors.

4 Conclusion

The analysis results indicate that several primary sectors, including agriculture, forestry, and fisheries; mining and quarrying; electricity, gas, and water supply; waste management and recycling; financial and insurance services; real estate; and other services, have achieved significant success and made a notable impact on the regional economy. Sectors such as manufacturing, construction, information and communication, and education services show substantial potential for future growth. With targeted investments and supportive policies, these sectors are expected to increase their contributions to the economy. Diversifying these sectors can enhance the resilience of the Karangasem economy in the event of declines in other areas. In contrast, the wholesale and retail trade sector, car and motorcycle repairs, and the provision of accommodation, food, and beverages, classified as lagging sectors, contribute only marginally to the GRDP. In conclusion, the study suggests that economic development in Karangasem Regency should focus on balancing the promotion of diverse sectors and activities. It is recommended to support the growth of leading sectors while also paying attention to potential and developing sectors.

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References

- Adisasmita, R. (2013). Theories of economic development, economic growth and regional growth, first edition. Yogyakarta: Graha Ilmu.
- Bendavid-Val, A. (1991). Regional and local economic analysis for practioners 4th Ed. London: Praeger.
- Hawanda, P., Nasurion, A., & Harahap, S. M. (2022). The influence of the government's role as an investor in Indonesia's Economic Growth. *Edunomia: Jurnal Ilmiah Pendidikan Ekonomi*, 3(1), 10-15.
- Marini, T. (2016). Analysis of factors influencing economic growth and poverty levels in berau district. *Inovasi : Jurnal Ekonomi Keuangan, dan Manajemen*, 12(1), 108-137.
- Muta'ali, L. (2015). *Regional analysis techniques for spatial and environmental planning*. Yogyakarta: Badan Penerbit Fakultas Geografi (BPFG).

- Putra, G. A., & Saptutyningsih, E. (2017). Analysis of potential and leading economic sectors in determining regional development policy: case study in the Kubu Raya Regency. *Journal of Economics Research and Social Sciences*, 14(2), 130-143.
- Satria, B. W. (2014). Analysis of economic growth and determination of leading sectors in East Java Province 2010-2014. *Jurnal Ekonomi Pembangunan*, 1(2).
- Sukirno, S. (2015). *Basics of regional economics*. Yogyakarta: Graha Ilmu.
- Sutiyo, & Maharjan, K. L. (2017). *Decentralization and rural development in Indonesia*. Singapore: Springer.
- Utari, D., Cristina, R., & Prambudi, S. (2016). *Inflation in Indonesia: Characteristics and Control*. Jakarta: BI Institute.

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