

Analysis Location Quotient of Tourism Supply Using Geoda Approach in Indonesia

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Abstract

This research was conducted to identify economic sectors that are the basis of economic competitiveness in the tourism supply sector, in provinces in Indonesia. Descriptive quantitative analysis through secondary data sources derived from the publication of data from the Central Statistics Agency of the Province and National Statistical Agency was carried out using the Location Quotient and Geoda Analysis methods. The results of the study show that in three sectors that are economic benchmarks in tourism offerings based on the Location Quotient method and Geoda analysis. In Accommodation, Food and Beverage sector Bali province is the province with the largest Location Quotient. In the transportation sector, West Sumetara province is the province with the largest Location Quotient. In the communication sector, East Java province is the province with the largest Location Quotient. The results of the research can be used as input for policy makers to formulate economic development strategies, especially in the tourism sector to improve the regional economy.

Keywords: Geoda Analysis, Gross Domestic Product, Location Quotient, Tourism Supply.

INTRODUCTION

The economy is the basic foundation of how the welfare of the people in a region is. The higher the turnover of goods and services in the area, the higher the welfare there. In the process, there is a regional economic development in which there are 2 (two) roles, namely from the government and the community. The government emphasizes more on

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regulations to improve the economy, while the community is the implementer of the economy.

Regional development cannot be carried out in its entirety in all economic sectors, but it is prioritized on the development of economic sectors whose development potential is quite large. The sector is expected to grow and develop rapidly so that it can stimulate other related sectors to keep pace with the development of these potential sectors (Hashfi, 2023; Osly et al., 2020). Economic growth at the provincial level has a great influence on the national economy (Priana, 2017). The diversity of topographic conditions and the wealth of natural resources in Indonesia is an opportunity in realizing community welfare. This can be found out by analyzing the Location Quotient (LQ) (Rahayu et al., 2018). That way, it can be known that the business sector is superior to the potential to be developed in each region in Indonesia (Azaki, 2024).

Improving the economic welfare of the community in an area will increase the level of community competitiveness both at the local and national levels as a whole. In order to achieve this level of competitiveness, local governments need to evaluate the economic conditions in the area (Ariyanto et al., 2024). After the evaluation is carried out, the local government can set the right policies to develop potential economic sectors. One of these sectors is the tourism sector. Especially in the regions in providing tourism supply (Murayama et al., 2022; Tiberghien et al., 2018).

One of the sectors that can support the growth and development of a country's economy is the tourism sector. The economic contribution of tourism has a direct, indirect and induced impact. Direct economic impact is created when realising such as: accommodation and entertainment, food and beverage services, retail opportunities, visitors, expenditure or economic activities from the location of the tourism area (Gozgor et al., 2022). The indirect economic impact of the tourism sector is manifested by investment spending that covers the tourism sector, this investment may not be explicitly related to tourism (Sutono, 2019). Induced impact is a contribution to the role of the tourism sector in general by spending money from tourists as visitors, having a direct or indirect impact on the tourism sector (Tao & Huaju, 2020).

A tourist who travels with the aim of traveling buys services provided by travel trade, transportation services, accommodation, food and beverages, souvenirs of all kinds, entertainment services, etc. All of these commodities and services fall under the category of products or services in the provision of tourism offerings (Sari et al., 2022). Charles R. Goeldner (2011) stated that some of the components of supporting tourism



offerings are the Provision of Accommodation and Food and Drink, Information and Communication and Transportation.

An economy is said to experience economic growth, namely if it has achievements from the development of an economy. Measurement of the progress of an economy requires the right measuring tools, in the form of measuring economic growth, among others, namely Gross Domestic Product (GDP) or at the regional level called Gross Regional Domestic Product (GDP) is the number of goods or services produced by an economy within a period of one year and expressed in market prices (Beyene & Moineddin, 2005; Sausan et al., 2022). The existence of economic growth is an indication of the success of economic development.

Nguyen (2021) stated that the broad impact of tourism globally is to have an economic impact, social impact, and cultural and environmental impact on tourist destinations. Tourism is related to the provider of services or products in tourism activities and activities carried out such as the availability of hotels, restaurants and entertainment services from these activities will boost the economy of the tourist destination area (Sari et al., 2024). Not only related to the impact of the regional economy, that tourism plays a role in the global economy, international exports in creating flows from the entry of foreign currency in the economy to the destination country, thus which can contribute directly to the trade balance. Such as exports, income flows that create businesses, increase income, job creation and government revenue.

Objectives

This article intends

1. To understand the important facets of Location Quotient of Tourism Supply
2. To analyze tourism supply divided several provinces in Indonesia
3. To analyze the provinces that contribute the most in supporting the tourism sector in Indonesia
4. To analyze the competitiveness of tourism in Indonesia based on Geoda

METHOD

1. Location Quotient Analysis

In determining the economic base of a region, the commonly used approach is the Location Quotient (LQ) method. LQ analysis is used to determine the contribution of a region as a supplier or importer to an activity or economic sector in the area (Ariyanto et al., 2024; Jafar & Meilvidiri, 2021). One aspect of LQ



analysis is as one of the indicators to determine the leading sector (Manullang et al., 2019; Maspatella & Parinussa, 2021), measuring the relative concentration of economic activities in determining the leading sector as the leading sector of an economic activity (Yu, 2020). The LQ method uses the following formula :

$$LQ = \frac{\frac{V_1^R}{V^R}}{\frac{V_1}{V}}$$

V^R = Value of sector in National GDP / regency GDRP

$\frac{V_1^R}{V^R}$ = Total Value of National GDP / regency GDRP

V = Value of a sector in National GDP

$\frac{V_1}{V}$ = Total Value of National GDP

The criteria used for LQ assessment include (Li et al., 2022):

- 1) If the LQ value is greater than 1, the sector is categorized as a basis sector, indicating that a sector becomes more specialized in regency than at the provincial level
 - 2) If the LQ value is smaller than 1, the sector is categorized as a non-basic sector, meaning that a sector's specialization level in regency is lower than in the provincial level.
 - 3) If the LQ value is equal to 1, meaning that a sector's degree of specialization is the same between regency and provincial levels.
2. Geoda Analysis
- 1) Percentile
Election from the Province with the highest percentage
 - 2) Bubble chart

To see the relationship between each variable which is the division of the distribution of 34 provinces consisting of two variables that are interrelated by using the horizontal line is Accommodation, Food and Beverage Provision and the vertical line is Information and Communication with the display of "bubble size" and "bubble color" is Transportation. Bubble size indicates the size of the variable value, that the larger the value of the variable, the larger the size of the "bubble size". The bubble color shows the color of the variable value, that the more red it is, the greater the value of the variable.



DISCUSSION

The data used in this study is secondary data collected in the form of GDP on the basis of constant prices in the 2010 series between 2019-2023 in 34 provinces in Indonesia, and GDP on the basis of constant prices in the 2010 series between 2019-2023 in Indonesia. In 17 sectors related to tourism supply, 3 sectors are used, namely: Accommodation, Food and Beverage Provision, Information and Communication and Transportation.

Table 1.
Results of Average Provincial Location Quotient in Indonesia 2019-2023

Province	Accommodation, Food and Beverage Provision	Information and Communication	Transportation
ACEH	0.40	0.60	1.50
BALI	5.79	1.33	1.43
BANTEN	0.70	0.07	1.13
BENGKULU	0.60	0.60	2.20
DAERAH ISTIMEWA YOGYAKARTA	1.98	1.45	0.76
DKI JAKARTA	1.52	2.03	0.89
GORONTALO	0.14	1.45	0.16
JAMBI	0.70	1.30	1.50
JAWA BARAT	0.75	0.76	0.97
JAWA TENGAH	0.96	0.80	0.64
JAWA TIMUR	1.50	2.85	0.59
KALIMANTAN BARAT	0.72	0.94	0.91
KALIMANTAN SELATAN	0.57	0.57	1.27
KALIMANTAN TENGAH	0.36	0.14	1.02
KALIMANTAN TIMUR	0.30	0.29	0.73
KALIMANTAN UTARA	0.72	0.94	0.91
KEPULAUAN BANGKA BELITUNG	0.29	1.15	0.30
KEPULAUAN RIAU	0.51	0.43	0.36
LAMPUNG	0.51	0.88	1.37



MALUKU	0.11	0.13	0.24
MALUKU UTARA	0.13	0.65	1.05
NUSA TENGGARA BARAT	0.47	0.46	1.37
NUSA TENGGARA TIMUR	0.13	0.65	1.05
PAPUA	0.16	0.28	0.47
PAPUA BARAT	0.26	0.78	0.08
RIAU	0.19	0.15	0.60
SULAWESI BARAT	0.08	0.03	0.05
SULAWESI SELATAN	0.47	1.28	0.80
SULAWESI TENGAH	0.72	0.94	0.91
SULAWESI TENGGARA	0.19	0.44	0.11
SULAWESI UTARA	0.37	0.49	1.14
SUMATERA BARAT	0.37	1.36	2.67
SUMATERA SELATAN	0.41	0.52	0.40
SUMATERA UTARA	0.60	0.31	0.94

In Figure 1, data from the distribution of Accommodation, Food and Beverage Provision in Indonesia can be seen.



From Figure 1, it can be seen that in Indonesia the sector with the most distribution of Accommodation, Food and Beverage Provision in red is the province that has the

distribution of Accommodation, Food and Beverage Provision compared to other provinces. It was found that there are three provinces that are at a percentile of 90 - 99%, namely: Bali, Yogyakarta and Jakarta.

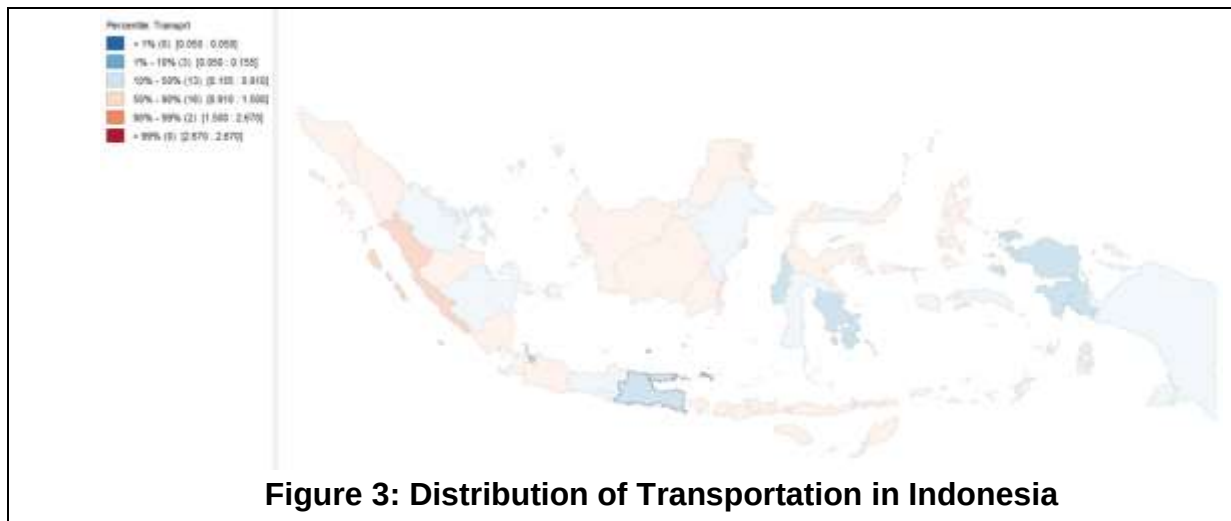
In Figure 2, data from the distribution of Information and Communication in Indonesia can be seen.



Figure 2: Distribution of Information and Communication in Indonesia

From Figure 2, it can be seen that in Indonesia the sector with the most distribution of Information and Communication in red is the province that has the distribution of Information and Communication compared to other provinces. It was found that there are two provinces that are at a percentile of 90 - 99%, namely: Jakarta and East Java.

In Figure 3, data from the distribution of Transportation in Indonesia can be seen.



From Figure 3, it can be seen that in Indonesia the sector with the most distribution of Transportation in red is the province that has the distribution of Transportation compared to other provinces. It was found that there are three provinces that are at a percentile of 90 - 99%, namely: Bengkulu and West Sumatera.

To see the relationship between each variable which is the division of the distribution of 34 provinces consisting of two variables that are interrelated by using the horizontal line is Accommodation, Food and Beverage Provision and the vertical line is Information and Communication with the display of "bubble size" and "bubble color" is Transportation. Bubble size indicates the size of the variable value, that the larger the value of the variable, the larger the size of the "bubble size". The bubble color shows the color of the variable value, that the more red it is, the greater the value of the variable. In Figure 4, data from the distribution of Accommodation, Food and Beverage Provision in Indonesia can be seen.

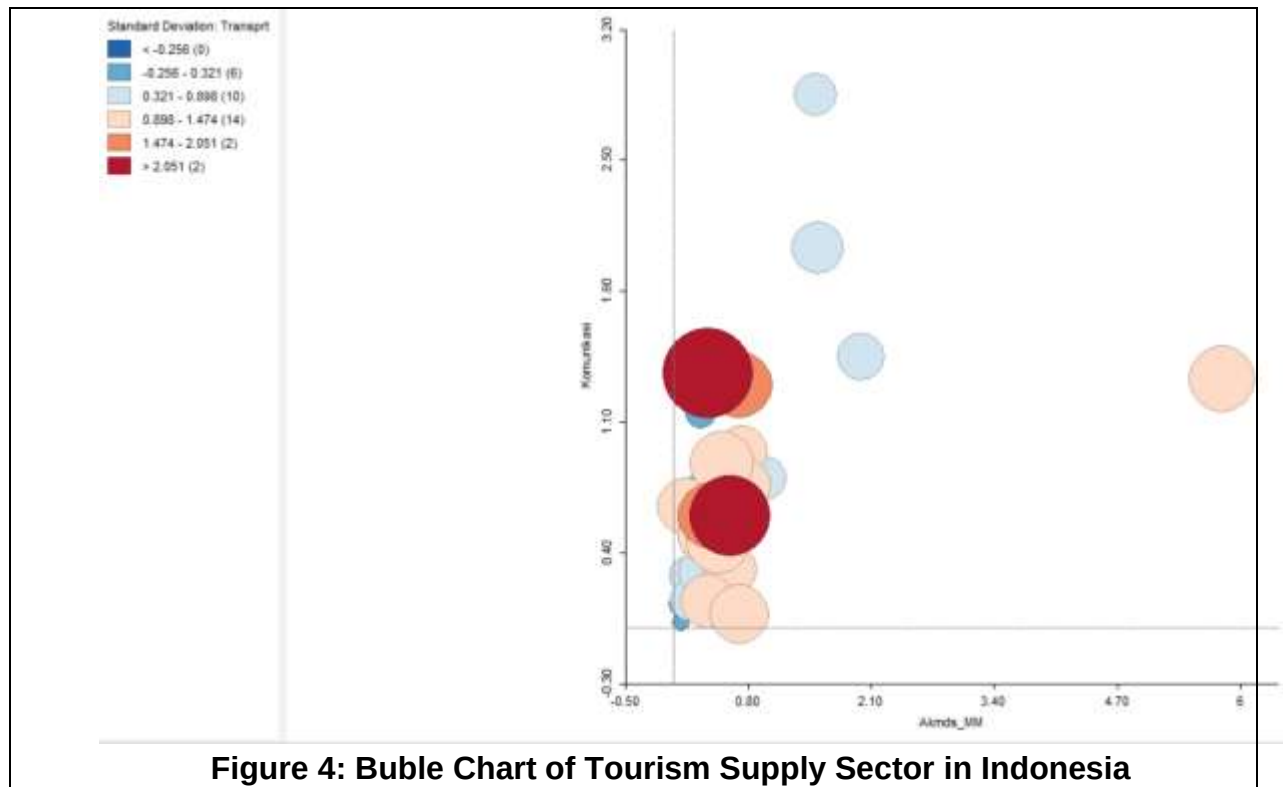


Figure 4: Buble Chart of Tourism Supply Sector in Indonesia

Figure 4 is a "bubble chart" of the relationship between the three variables of Tourism Supply Sector in Indonesia. The province that has the largest transportation sector with a red "bubble chart" and the largest size is West Sumatra with a Location Quotient value of 2.67 as well as the province with the highest communication sector. In the Accommodation, Food and Beverage Provision sector, the most bubble charts are in Bali Province with the bubble chart that is the farthest from point 0, with a Location Quotient value of 5.79.

CONCLUSION

The analysis of the calculation of Location Quotient in Provinces in Indonesia in the supporting sectors of tourism offers resulted in the conclusion that in the Accommodation, Food and Beverage sector, the largest province is Bali. Bali is the province with the largest Accommodation, Food, and Beverage sector in Indonesia. This is due to the highly developed tourism industry in Bali, where the demand for accommodation services as well as food and beverages is very high, both from domestic

and international tourists. Bali is known as a major tourist destination, so these sectors are the backbone of the province's economy.

The analysis of the calculation of Location Quotient in Provinces in Indonesia in the transportation sector resulted in the conclusion that the largest province in Transportation is West Sumatra. This is due to Topography and Infrastructure: West Sumatra has a diverse topography with mountains, hills, and a wide coastline. This makes transportation, both land, sea, and air, a very important sector for people's mobility and the distribution of goods. Tourism and Culture: The province is famous for its cultural and natural tourism destinations such as Bukittinggi, Lake Maninjau, and Sianok Gorge. Growing tourism is increasing the need for a reliable transportation sector to serve tourists.

The analysis of the calculation of Location Quotient in Provinces in Indonesia in the Information and Communication sector resulted in the conclusion that in Information and Communication the largest province is East Java. This is because Surabaya, as the capital of East Java, is the second largest metropolitan city in Indonesia after Jakarta. Surabaya is a center for business, trade, and education, which requires a strong information and communication infrastructure. Technology Development: East Java has many technology companies, startups, and data centers that are growing rapidly. The presence of various industries based on information and communication technology strengthens East Java's position in this sector. East Java has a relatively advanced and extensive communication network infrastructure, covering various urban and rural areas. It facilitates the development of communication and internet services, which are an important base for the development of the digital economy.

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