



## Unlocking Prosperity: Identifying Key Sectors For Tourism Development In Yogyakarta

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### ABSTRACT

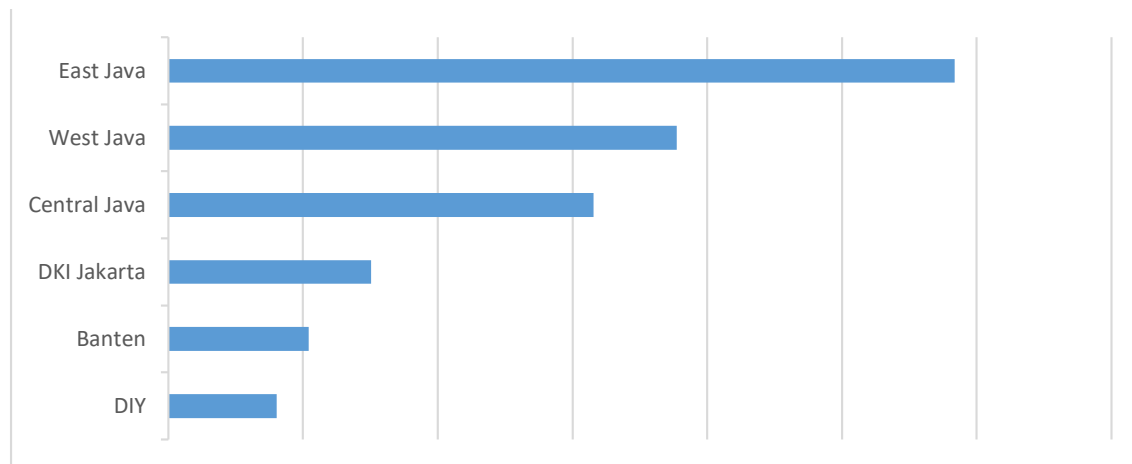
Tourism has great potential to create jobs and improve Indonesia's competitiveness in the global market. The Special Region of Yogyakarta (DIY) is one of the provinces in Indonesia that has comparative advantages and good prospects in tourism. This study aims to determine the economic sectors that are the basis and have prospects for growth and to determine the development that can be done in these sectors to optimize tourism in each regency and city in the Special Region of Yogyakarta. Based on analysis using Location Quotient (LQ) and Dynamic Location Quotient (DLQ), the agriculture, forestry, and fisheries sector, the water supply, waste management, waste, and recycling sector, the wholesale and retail trade sector, car and motorcycle repair, the transportation and warehousing sector, as well as the accommodation and food supply sector are the basic and prospective sectors in the regencies and cities in Yogyakarta. Optimization of tourism can be done through the intensification of these basic and prospective sectors through strengthening agro-tourism, waste management, local shopping, and public transportation in each district and city in DIY. By strengthening the basic sectors and taking strategic steps in tourism development, DIY can strengthen its position as an attractive and sustainable tourism destination.

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## 1. Introduction

Tourism, as one of the creative economic sectors, has great potential to create jobs and improve Indonesia's competitiveness in the global market. Sustainable tourism development and the empowerment of local communities in the tourism industry can provide significant economic benefits. The focus on the sector is one of the nine "Nawa Cita" promoted by President Joko Widodo, namely encouraging the development of industry and the creative economy to create jobs and increase Indonesia's competitiveness in the global market. This makes tourism one of the government's leading sectors in the development plan.



**Figure 1.** Indonesia's Most Local Tourists, 2021  
Source: BPS (2022)

In 2021, the Special Region of Yogyakarta (DIY) was recorded as the 6th province with the highest number of local tourists in Indonesia, with 22.22 million trips (BPS, 2022). As a province with the smallest area in Indonesia at 3,186 square kilometres, the number of tourists is relatively large. In line with the survey results of Jakpat Company, it shows that DIY ranks as the third most popular local tourist destination, with a percentage of 9.7% from a total of 1,141 respondents (Rizaty, 2022).

As the only province that implements a royal system, DIY is known as the centre of Javanese culture. In DIY, there are several historical monuments, such as temple sites, palaces, and other historical places. Besides historical buildings, Yogyakarta also has traditional arts that are still preserved in the community (DIY Tourism, 2021). Apart from the cultural side, DIY is also famous for its potential natural beauty, such as mountainous areas and southern beaches. This makes DIY a strong attraction in terms of tourism.

To support DIY tourism demand, which has increased every year, it is necessary to optimize other economic sectors. This study aims to determine the economic sectors that are the basis and have prospects for growth, as well as the development that can be done in these sectors to optimize tourism in each regency and city in the Special Region of Yogyakarta. Identification of the basic and potential economic sectors in a region can be done using Location Quotient (LQ) and Dynamic Location Quotient (DLQ) analyses. Location quotient is an approach used to look at the economic base of a region and measure its performance. LQ can be calculated by measuring the concentration of activity in the economic sector of a region, then compared with its role regionally or nationally in the same sector (Arsyad, cited in Widianingsih et al., 2015). Meanwhile, Dynamic Location Quotient (DLQ) is a modification of LQ by accommodating the growth rate factor of economic sector output over time. Based on the growth rate, the development potential of the sector can be seen (Nugroho, cited in Widianingsih et al., 2015).

## 2. Literature Review

This research is supported by several previous studies, both in terms of tourism and in terms of the intensification of the economic sector, using the Location Quotient (LQ) and Dynamic Location Quotient (DLQ) analysis methods. These studies are the basis for the author's initial assumptions as well as a guide for conducting research.

According to Saputro (2017), based on his research using Location Quotient (LQ) and Shift Share analysis, it suggests that the most superior sector and priority for optimization in Bantul Regency is the agriculture, forestry, and fisheries sector, while Yogyakarta City has a superior sector in the processing industry. Sleman Regency, on the one hand, has a superior sector in transportation and warehousing. Gunungkidul Regency and Kulon Progo Regency have the same leading sectors, namely agriculture,

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forestry, and fisheries. Priority sectors in each regency and city can be improved through proportional development policies. In this study, the data taken is GRDP data for 2011–2015.

Basuki & Mujiraharjo (2017), in their research on the leading sectors of Sleman Regency, concluded that the leading sectors in Sleman Regency are the construction sector, transportation and warehousing sector, real estate sector, and corporate services sector. In contrast, several sectors are still underdeveloped in Sleman Regency, namely the agriculture, forestry, and fisheries sector, the mining and quarrying sector, the electricity and gas procurement sector, the wholesale and retail trade sector, car and motorcycle repair, and finally the government administration, defence, and mandatory social security sector. In the author's opinion, the transport sector, which is the leading sector in Sleman Regency, is closely related to the tourism potential in Sleman Regency. In addition, the construction sector, which is also a leading sector, is also related to the tourism sector in Sleman Regency. This assumption is also one of the bases for the author's further examination of the relationship.

In provinces other than Yogyakarta, Hajeri & Dolorosa (2015), in their research using Location Quotient (LQ) analysis, analyzed the Gross Regional Domestic Product (GRDP) of Kubu Raya Regency from 2008 to 2013 and produced findings that Kubu Raya Regency has a basic sector in the manufacturing industry sector, the electricity, gas, and clean water sector, and the transportation and communication sector. Meanwhile, from the Dynamic Location Quotient (DLQ) analysis, it was found that the prospective sectors in Kubu Raya Regency are the agricultural sector, mining and quarrying sector, manufacturing sector, electricity, gas, and clean water sector, building sector, transport and communication sector, finance, rental, corporate services, and services sector.

Several literature reviews that the author has listed above are some of the sources and references used by the author in conducting research. Based on the analysis of previous studies, it can be seen that the potential sectors boost the economy of a region. In this research, the author will connect the leading sectors in regencies and cities in the Special Region of Yogyakarta found through LQ and DLQ analyses and their relation to efforts to encourage the tourism sector in DIY.

### 3. Research Method

The research method used by the author is the quantitative method. Quantitative research is research that involves numbers, starting with data collection, analysis, and presentation of results (Sugiyono, 2017). Using quantitative methods, this research is expected to identify and measure the leading sectors and their relationship with tourism in an area objectively.

Location Quotient (LQ) and Dynamic Location Quotient (DLQ) analyses were conducted on Gross Regional Domestic Product (GRDP) data based on 17 economic sectors. GRDP is the sum of added value generated by all business units in a particular region, or the sum of the value of final goods and services produced by all economic units in a region (BPS, 2023). The determination of the base sector in this study was carried out by calculating the percentage concentration of activity in the economic sector of Yogyakarta City, Sleman Regency, Bantul Regency, Gunungkidul Regency, and Kulon Progo Regency, then compared with the contribution of each sector in each region to the Gross Regional Domestic Product in the Special Region of Yogyakarta.

Based on the results of the analysis using Location Quotient (LQ), the base sector of each regency and city will be known based on the growth of the GRDP of the regency and city. Furthermore, by analyzing the Dynamic Location Quotient (DLQ), potential or prospective sectors in each regency and city can be identified. Based on the information obtained from the two quantitative analyses, a descriptive analysis and a literature study were conducted to see its relationship to tourism in the Special Region of Yogyakarta.

This research uses secondary data collection techniques, which are collection techniques that utilize data already provided by third parties (Martono, 2010). The data used in this research is taken from the website of the Central Bureau of Statistics, including:

1. Indonesia's Gross Domestic Product (GRDP) from 2017 to 2021 by Business Field at 2010 Constant Prices
2. Gross Regional Domestic Product (GRDP) of Yogyakarta Province from 2017 to 2021 by Business Field at Constant 2010 Prices
3. Gross Regional Domestic Product (GRDP) of Yogyakarta City from 2017 to 2021 by Business Field at Constant 2010 Prices
4. Gross Regional Domestic Product (GRDP) of Sleman Regency from 2017 to 2021 by Business Field at Constant 2010 Prices
5. Gross Regional Domestic Product (GRDP) of Bantul Regency from 2017 to 2021 by Business Field at Constant 2010 Prices
6. Gross Regional Domestic Product (GRDP) of Gunungkidul Regency for 2017 to 2021 by Business Field at Constant 2010 Prices
7. Gross Regional Domestic Product (GRDP) of Kulon Progo Regency for 2017 to 2021 by Business Field at Constant 2010 Prices

Furthermore, the data will be processed and analyzed using the Location Quotient (LQ) and Dynamic Location Quotient (DLQ) economic analysis methods.

Location Quotient (LQ) is an approach used to look at the economic base of a region and measure the performance of that base. LQ can be calculated by measuring the concentration of an activity in the economic sector of a region, then compared with its role regionally or nationally in the same sector (Arsyad, cited in Widianingsih et al., 2015). The basic assumption of this LQ method is that all residents in a region have the same demand pattern as the national demand pattern. Workers in the industrial sector in the region have the same level of productivity as workers in the national industrial sector, with a closed economic system (Kurniawan, 2016).

The results of the LQ calculation for each regency and city are used to identify sectors that are included in the economic base sector of the regency or city. The respective results of the LQ calculation can be categorized as follows:

1.  $LQ > 1$ , indicating that the sector is classified as the base sector of the regency/city economy (Superior)
2.  $LQ < 1$ , indicating that the sector is not a basic sector of the economy in the regency/city.

It can be said that the higher the LQ value of a sector, the higher the competitive advantage of the region concerned in developing the sector, and is the leading sector of the region.

Meanwhile, the Dynamic Location Quotient (DLQ) is a modification of the LQ by accommodating the factor of the growth rate of economic sector output over time. Based on the growth rate, the development potential of the sector can be seen (Nugroho cited in Widianingsih et al., 2015). Dynamic Location Quotient (DLQ) is similar in principle to LQ, by introducing a growth rate using the assumption that each sector's value-added and GRDP has its average growth rate per year within that period. DLQ analysis is used to fill the gap in LQ analysis which has several weaknesses in assuming the consumption of people who in reality have different tastes and consumption patterns, average consumption needs for one type of goods that are different for each region, as well as differences in industrial sectors in each region. The results of each DLQ calculation can be categorized as follows:

1.  $DLQ > 1$ , the proportion of a sector's growth rate to the regency's GRDP growth rate is faster than the growth rate of the same sector to the provincial GRDP, indicating that the sector is a prospective sector in the future.

- DLQ < 1, the proportion of a sector's growth rate to the regency's GRDP growth rate is slower than the growth rate of the same sector to the provincial GRDP, indicating that the sector is less prospective in the future.

After determining the Location Quotient (LQ) and Dynamic Location Quotient (DLQ) values for each sector in each regency and city, categorization can be done according to the quadrants in Table 1 to see the characteristics of each sector according to its type and prospectivity.

The basis for choosing quantitative methods with LQ and DLQ analyses is their ability to objectively identify and measure the level of sector advantage in a region. LQ and DLQ allow a clear comparison between the amount of employment or production of a sector in an area and the amount expected based on national or regional averages. In addition, this method also allows researchers to collect accurate statistical data on the dominant economic sectors in a region and the region's degree of specialization in those sectors. The results of this LQ and DLQ analysis provide an overview of the sectors that have a comparative advantage or competitive advantage in the region. Numerical data generated from calculations using the LQ and DLQ methods can form the basis of policies for development in related sectors, which can then be analyzed against these economic sectors to increase tourism potential.

**Table 1.** Economic Sector Categorization

	DLQ > 1 (Prospective)	DLQ < 1 (Non-prospective)
LQ > 1 (Base sector)	Type I, Base, prospective sector	Type III, Base, non-prospective sector
LQ < 1 (Non-base sector)	Type II, Non-base, prospective sector	Type IV, Non-base, non-prospective sector

The selection of the LQ and DLQ analysis methods in this study is based on the author's objective, which is to identify leading sectors and link them to tourism development. The LQ and DLQ methods, which are quantitative, will provide objective and measurable data, as well as reliable analysis results for decision-making in the context of tourism development in regencies and cities in the Special Region of Yogyakarta.

## 4. Result and Discussion

### 4.1. Tourism as a Leading Sector in DIY

Based on the analysis using Location Quotient (LQ) and Dynamic Location Quotient (DLQ) methods to compare the Gross Regional Domestic Product (GRDP) of DIY Province with the Gross Domestic Product (GDP) of Indonesia nationally, the results are as written in the following Table 2:

**Table 2.** Results of Leading Sector Analysis in DIY

Business Sector (2010 series)	LQ	DLQ	Interpretation	
			LQ	DLQ
Agriculture, Forestry, and Fisheries	0.63	0.97	Non Base	Non Prospective
Mining and Quarrying	0.07	0.97	Non Base	Non Prospective
Processing Industry	0.58	0.99	Non Base	Non Prospective
Electricity and Gas Procurement	0.15	0.98	Non Base	Non Prospective
Water Supply, Waste Management, Waste and Recycling	1.14	0.99	Base	Non Prospective
Construction	0.96	1.12	Non Base	Prospective
Wholesale and Retail Trade; Repair of Cars and Motorcycles	0.60	0.98	Non Base	Non Prospective
Transport and Warehousing	1.18	0.91	Base	Non Prospective
Provision of Accommodation and Drinking Food	2.99	1.02	Base	Prospective

Information and Communication	2.13	1.16	Base	Prospective
Financial Services and Insurance	0.85	1.00	Non Base	Non Prospective
Real Estate	2.37	0.99	Base	Non Prospective
Company Services	0.60	0.92	Non Base	Non Prospective
Public Administration, Defense, and Compulsory Social Security	2.08	0.94	Base	Non Prospective
Education Services	2.76	1.08	Base	Prospective
Health and Social Services	2.25	0.99	Base	Non Prospective
Other Services	1.44	1.01	Base	Prospective

Source: processed by the author

Based on Table 2, the provision of accommodation and food and beverages sector obtained LQ and DLQ coefficients  $> 1$ , which indicates that the sector is basic in the Special Region of Yogyakarta (DIY), and its growth is included in the potential sector. According to (BPS, 2023), the provision of accommodation and food and beverages itself includes the provision of short-term lodging accommodation for visitors as well as the provision of food and beverages for immediate consumption, so this sector can describe the condition of tourism in DIY. Based on this, it can be inferred that tourism is one of the leading sectors in DIY.

#### 4.2. Leading Sectors of Regencies and Cities in DIY

Based on Table 3 and Table 4, there are a number of economic sectors that are both basic and prospective in the regencies and cities in the Special Region of Yogyakarta. The following are the results of the analysis of economic sectors in each regency and city in Yogyakarta:

##### a. Sleman Regency

In Sleman Regency, the Agriculture, Forestry, and Fisheries sector, the Mining and Quarrying sector, and the Electricity and Gas Procurement sector, the Water Supply, Waste Management, Waste, and Recycling sector, the Wholesale and Retail Trade, Car and Motorcycle Repair sector, the Information and Communication sector, the Financial Services and Insurance sector, the Government Administration, Defence and Compulsory Social Security sector, and the Health Services and Social Activities sector are non-basic but prospective sectors. This indicates good growth potential in these sectors.

Furthermore, the Manufacturing Industry sector, Accommodation and Drinking Food Provision sector, Real Estate sector, Corporate Services sector, and Education Services sector are included in the basic and prospective sectors in Sleman Regency. This indicates that these sectors have good comparative advantages and strong growth potential.

Meanwhile, the economic sectors that are included in the main sectors but do not have significant growth potential in Sleman Regency are the Construction sector and the Transportation and Warehousing sector. Both sectors are included in the non-prospective basic sectors. In Sleman Regency, the other services sector is the only non-basic and non-prospective sector.

**Table 3.** Location Quotient Analysis Results

Business Sector	City/Regency				
	Sleman	Bantul	Kulon Progo	Gunung Kidul	Yogya
Agriculture, Forestry, and Fisheries	0.77	1.38	1.82	2.54	0.02
Mining and Quarrying	0.70	1.03	3.02	2.50	0.01
Processing Industry	1.01	1.17	0.96	0.74	1.02
Electricity and Gas Procurement	0.81	1.05	0.62	0.66	1.50
Water Supply, Waste Management, Waste and Recycling	0.46	0.83	1.26	1.61	1.42



Construction	1.16	0.94	1.48	0.95	0.71
Wholesale and Retail Trade; Repair of Cars and Motorcycles	0.91	1.03	1.60	1.16	0.84
Transport and Warehousing	1.08	0.96	1.62	0.99	0.74
Provision of Accommodation and Drinking Food	1.03	1.16	0.38	0.64	1.21
Information and Communication	0.98	0.93	0.55	0.88	1.27
Financial Services and Insurance	0.83	0.74	0.74	0.59	1.68
Real Estate	1.14	0.95	0.48	0.51	1.27
Company Services	1.66	0.47	0.28	0.44	1.03
Public Administration, Defense, and Compulsory Social Security	0.80	0.92	1.02	1.18	1.21
Education Services	1.17	0.83	0.67	0.76	1.12
Health and Social Services	0.93	0.73	0.55	0.82	1.49
Other Services	0.85	0.82	1.37	1.36	1.00

#### b. Bantul Regency

The Agriculture, Forestry and Fisheries sector and the Processing Industry sector are the basic and prospective sectors in Bantul Regency. This means that these sectors have good growth potential. The Electricity and Gas Procurement sector, the Wholesale and Retail Trade sector, Car and Motorcycle Repair, and the Accommodation and Drinking Food Provision sector are also among the basic and prospective sectors in Bantul Regency. This indicates the existence of comparative advantages, as well as strong growth opportunities in these sectors.

Meanwhile, the Water Supply, Waste Management, Waste and Recycling sector, the Transportation and Warehousing sector, the Information and Communication sector, the Financial Services and Insurance sector, the Real Estate sector, the Corporate Services sector, and the Government Administration, Defence and Compulsory Social Security sector are prospective non-base sectors in Bantul Regency. This indicates strong growth potential in these sectors.

The Mining and Quarrying sector is included in the non-prospective basic sector in Bantul Regency, which indicates that the sector is the main sector but does not have significant growth potential in the future. Meanwhile, the other four sectors, namely the Construction sector, the Education Services sector, the Health Services and Social Activities sector, and the Other Services sector, are included in the non-basic and non-prospective sectors.

**Table 4.** Dynamic Location Quotient Analysis Results

Business Sector	City/Regency				
	Sleman	Bantul	Sleman	Gunung Kidul	Sleman
Agriculture, Forestry, and Fisheries	1.02	1.02	0.89	0.98	1.01
Mining and Quarrying	1.00	0.85	1.08	0.96	0.92
Processing Industry	1.03	1.01	0.95	0.99	1.01
Electricity and Gas Procurement	1.01	1.02	0.94	0.99	1.04
Water Supply, Waste Management, Waste and Recycling	1.00	1.01	0.90	1.00	1.00
Construction	0.99	0.89	1.98	0.91	0.84
Wholesale and Retail Trade; Repair of Cars and Motorcycles	1.00	1.01	0.95	1.01	1.01
Transport and Warehousing	0.78	1.13	1.22	1.11	1.15
Provision of Accommodation and Drinking Food	1.01	1.06	1.05	1.12	0.95

Information and Communication	1.02	1.01	0.92	1.01	0.99
Financial Services and Insurance	1.04	1.02	0.88	1.01	1.01
Real Estate	1.01	1.00	0.95	1.01	1.04
Company Services	1.02	1.01	1.09	1.00	1.00
Public Administration, Defense, and Compulsory Social Security	1.02	1.02	0.89	0.98	1.05
Education Services	1.03	1.00	0.86	0.99	1.01
Health and Social Services	1.02	1.00	0.89	0.99	1.03
Other Services	1.00	0.97	0.86	0.97	0.97

### c. Kulon Progo Regency

The Agriculture, Forestry and Fisheries sector, the Water Supply, Waste Management and Recycling sector, the Wholesale and Retail Trade, Car and Motorcycle Repair sector, the Government Administration, Defence and Compulsory Social Security sector, and the Other Services sector are basic but non-prospective sectors in Kabupaten Kulon Progo. This shows that although these sectors are still comparatively superior, their prospects in terms of growth have less potential.

In the Mining and Quarrying sector, Construction sector, and Transportation and Warehousing sector, the three sectors are included in the basic and prospective sectors in Kulon Progo Regency. This shows the comparative advantage of these sectors in the Special Region of Yogyakarta and the existence of good growth potential.

In addition, sectors such as the Provision of Accommodation and Drinking Food and the Company Services sector are included in the non-basic but prospective sectors in Kulon Progo Regency. This shows that there are growth opportunities in these sectors.

Meanwhile, other sectors such as the Manufacturing Industry, Electricity and Gas Procurement sector, Information and Communication sector, Financial and Insurance Services sector, Real Estate sector, Education Services sector, and Health Services and Social Activities sector are included in the non-base and non-prospective sectors.

### d. Gunungkidul Regency

The Agriculture, Forestry and Fisheries sector, Mining and Quarrying sector, Government Administration, Defence and Compulsory Social Security sector, and Other Services sector are basic but non-prospective sectors in Gunungkidul Regency. This indicates that there is less potential growth in these sectors. Nevertheless, these sectors still have comparative advantages that make the four sectors still the basic sectors.

Meanwhile, the Water Supply, Waste Management, Waste, and Recycling sector, as well as the Wholesale and Retail Trade, Car and Motorcycle Repair sector are included in the basic and prospective sectors in Gunungkidul Regency. This indicates a comparative advantage and good growth potential in these sectors.

The Transportation and Warehousing sector, Accommodation and Food Supply sector, Information and Communication sector, Financial and Insurance Services sector, and Real Estate sector are non-basic but prospective sectors in Gunungkidul Regency. This indicates that there are opportunities for further development in these sectors.

In addition, sectors that are included in the non-base and non-prospective sectors in Gunungkidul Regency include the Manufacturing Industry sector, the Electricity and Gas Procurement sector, the Construction sector, the Corporate Services sector, the Education Services sector, and the Health Services and Social Activities sector.



e. Yogyakarta City

In Yogyakarta City, the basic and prospective sectors include the Manufacturing Industry sector, the Electricity and Gas Procurement sector, the Water Procurement, Waste Management, Waste, and Recycling sector, the Financial and Insurance Services sector, the Real Estate sector, the Government Administration, Defence, and Compulsory Social Security sector, the Education Services sector, and the Health Services and Social Activities sector. This shows that these sectors have comparative advantages in the Special Region of Yogyakarta, and have strong growth potential.

Furthermore, the Accommodation and Food Supply sector, Information and Communication sector, and Corporate Services sector are included in the basic and non-prospective sectors in Yogyakarta City. This indicates that these sectors are comparatively superior main sectors but do not have significant growth potential in the future.

Other sectors such as the Agriculture, Forestry, and Fisheries sector, Wholesale and Retail Trade, Car and Motorcycle Repair, and Transportation and Warehousing sector, are included in the non-basic but prospective sectors in Yogyakarta City. This indicates that there are opportunities for further development in these sectors because they have good growth prospects. Meanwhile, the Mining and Quarrying sector, Construction sector, and other Services sectors in Yogyakarta City are included in the non-basic and non-p prospective sectors.

#### **4.3. Tourism Optimisation through Economic Sector Intensification**

Based on Table 5, 6 (six) economic sectors fall into Types I, II, and III in all regencies and cities in the Special Region of Yogyakarta (DIY). These six sectors are economic sectors that are the basis and have comparative advantages in DIY or are economic sectors that have prospects to grow significantly in the future. These sectors include:

a. Agriculture, Forestry, and Fisheries

Agriculture, forestry, and fisheries are the basic sectors in Bantul, Kulon Progo, and Gunungkidul regencies. This sector has the prospect of growing in Sleman, Bantul, and Yogyakarta City.

b. Water Supply, Waste Management, Waste, and Recycling

Water supply, waste management, waste, and recycling are the basic sectors in Kulon Progo, Gunungkidul, and Yogyakarta City. This sector has the prospect of growing in Sleman, Bantul, Gunungkidul, and Yogyakarta City.

c. Wholesale and Retail Trade; Car and Motorcycle Repair

Wholesale and retail trade and repair of cars and motorcycles is a basic sector in Bantul, Kulon Progo, and Gunungkidul Regencies. This sector also has prospects for further development in Sleman, Bantul, Gunungkidul, and Yogyakarta City.

d. Transport and Warehousing

Transport and storage is a basic sector in Sleman and Kulon Progo regencies. This sector has the potential to develop further in Bantul, Kulon Progo, Gunungkidul, and Yogyakarta City.

e. Provision of Accommodation and Food and Drink

The provision of accommodation and food and beverages is a basic sector that has developed in Sleman, Bantul, and Yogyakarta City. This sector, which is also a picture of tourism, still has prospects for further development in Sleman, Bantul, Kulon Progo, and Gunungkidul Regencies.

f. Government Administration, Defence, and Compulsory Social Security

Government administration, defence, and mandatory social security are the basic sectors in Kulon Progo, Gunungkidul, and Yogyakarta City. This sector still has prospects to grow in Sleman, Bantul, and Yogyakarta City.

**Table 5.** Results of Economic Sector Type Analysis

Business Sector	City/Regency				
	Sleman	Bantul	Kulon Progo	Gunung Kidul	Yogya
Agriculture, Forestry, and Fisheries	Type II	Type I	Type III	Type III	Type II
Mining and Quarrying	Type II	Type III	Type I	Type III	Type IV
Processing Industry	Type I	Type I	Type IV	Type IV	Type I
Electricity and Gas Procurement	Type II	Type I	Type IV	Type IV	Type I
Water Supply, Waste Management, Waste and Recycling	Type II	Type II	Type III	Type I	Type I
Construction	Type III	Type IV	Type I	Type IV	Type IV
Wholesale and Retail Trade; Repair of Cars and Motorcycles	Type II	Type I	Type III	Type I	Type II
Transport and Warehousing	Type III	Type II	Type I	Type II	Type II
Provision of Accommodation and Drinking Food	Type I	Type I	Type II	Type II	Type III
Information and Communication	Type II	Type II	Type IV	Type II	Type III
Financial Services and Insurance	Type II	Type II	Type IV	Type II	Type I
Real Estate	Type I	Type II	Type IV	Type II	Type I
Company Services	Type I	Type II	Type II	Type IV	Type III
Public Administration, Defense, and Compulsory Social Security	Type II	Type II	Type III	Type III	Type I
Education Services	Type I	Type IV	Type IV	Type IV	Type I
Health and Social Services	Type II	Type IV	Type IV	Type IV	Type I
Other Services	Type IV	Type IV	Type III	Type III	Type IV

Intensification of the sector included in the regency and city bases is expected to further strengthen the comparative advantage of the sector in the region. Similar to the prospective sectors, intensification in the sector is expected to upgrade the sector into a basic sector in the future through significant growth in the sector from year to year. The strengthening of the six economic sectors of Agriculture, Forestry and Fisheries, Water Supply, Waste Management and Recycling, Wholesale and Retail Trade, Car and Motorcycle Repair, Transportation and Warehousing, Food and Drink Accommodation, and Government Administration, Defence, and Social Security must improve the competitiveness of each regency and city in Special Region of Yogyakarta.

#### 4.4. Agritourism

Based on the results of the LQ and DLQ analyses, the agriculture, forestry, and fisheries sectors are the base sectors in Bantul, Kulon Progo, and Gunungkidul regencies. In addition, this sector also has prospects for development in Sleman and Yogyakarta City. Especially in Bantul Regency, the agriculture, forestry, and fisheries sector is a basic sector that still has good prospects for development.

One of the optimization steps in the agriculture, forestry, and fisheries sectors that play a role in supporting tourism is through the development of agritourism. Agritourism is a type of tourism that places the agricultural sector in the tourism sector, intending to increase farmers' income and maintain agricultural sustainability (Windia et al., 2007). Agritourism can also help develop other related sectors, such as animal husbandry, plantations, and crafts (Artini et al., 2022). In addition, agritourism can have a positive impact on local communities, as it can create employment opportunities and increase household income (Ermawati et al., 2023).

The development of agritourism requires the involvement of various levels of society, especially those in the agricultural sector. To develop agritourism, two important factors are needed, namely agritourism

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products and supporting attractions in the village area, as well as the involvement of local communities, especially youth, mothers, and farmer groups (Ermawati et al., 2023). According to Windia et al. (2007), some agritourism areas in Bali are managed with different management models. The agritourism development model can be used as a reference for other regions in Indonesia.

The development of the agricultural sector can have a significant impact on the tourism sector, especially in creating an attraction for tourists. For example, in Subak Teges, Peliatan Village, Ubud District, and Gianyar Regency, farmers have felt the real economic benefits generated through the development of agritourism. Household income between farmers who work purely in the agricultural sector and the agritourism sector shows a significant difference (Artini et al., 2022). In addition, a study conducted in Central Java found that the agricultural sector has a negative and significant effect on poverty, while the tourism sector has a negative and insignificant effect on poverty (Rohmat & Indrawati, 2022).

Overall, the development of the agricultural sector through agritourism can have a positive impact on the tourism sector, as it can create attractions for tourists and increase the household income of local communities. However, the successful development of agritourism requires the involvement of various levels of society and the development of supporting attractions in the village area.

#### **4.5. Waste Management**

Waste management is also an important consideration for the tourism industry, as it can have a significant economic impact. For example, the hospitality industry is one of the most resource-intensive industries and generates a lot of waste, which can lead to environmental degradation if not managed properly (Agesa et al., 2022). In addition, tourism infrastructure in protected areas can increase the demand for waste management (Claassens et al., 2022).

Effective waste management practices can be found in several tourism industries around the world. International hotels operating in developed as well as developing countries have invested in and implemented effective waste management practices. However, poor waste management practices can lead to increased operational costs for hotels. A study conducted in Kenya found that waste management practices affect hotel operating costs, and waste reduction has a negative and statistically significant effect on operating costs (Agesa et al., 2022).

Various waste management strategies can be implemented in the tourism industry, one of which is the waste bank program. Waste Bank is a community-based waste management program that classifies waste based on its selling value and has been successfully implemented in coastal areas to manage waste generated by beachgoers. The implementation of waste banks can have a positive impact on tourism progress in terms of economic aspects (Gravitiani et al., 2021). The hierarchical model of waste management is a useful tool for waste management in the tourism industry. The model prioritizes waste prevention and reuse as the most preferred options, followed by recycling, energy recovery, and disposal as the least desirable options (Agesa et al., 2022).

Waste management is an important consideration for the tourism industry, as it can have a significant economic impact. Effective waste management practices can result in cost savings for hotels, while poor waste management practices can increase operational costs. Waste management strategies such as waste banks and waste management hierarchy models can be applied to manage waste generated by tourism activities.

#### **4.6. Local Shopping**

The wholesale and retail trade sector is also a sector that has a comparative advantage and good prospects in the regencies and cities of Yogyakarta Province based on LQ and DLQ analyses. This sector is still the basis of the economy in Bantul, Kulon Progo, and Gunungkidul Regencies and has the prospect to develop further in Sleman, Bantul, Gunungkidul, and Yogyakarta City Regencies. One way to optimize this sector is through the development of local shopping.

Tourism and local businesses have a symbiotic relationship, as tourism can have a significant impact on the local economy and local businesses can provide unique experiences for tourists. When tourists shop locally, they contribute to the local economy by supporting small businesses and creating jobs. In turn,

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local businesses can attract more tourists by offering unique products and experiences that cannot be found elsewhere.

Numerous studies show that tourist spending can make a significant economic contribution to the local economy. For example, Rahmanita (2019) through a study conducted in the Special Region of Yogyakarta, found that the Sekaten festival made a significant economic contribution to the Yogyakarta city economy through tourist spending. Similarly, a study conducted in Vietnam found that coffee and gastronomy have the potential to be "married" into tourism activities, which can have a positive impact on the local economy (Vu et al., 2022).

Local businesses can also benefit from tourism by offering unique products and experiences that cannot be found elsewhere. For example, small tourism enterprises in rural areas can generate income and contribute to local development through community tourism (Molina et al., 2021). In addition, community-based tourism can have a positive impact on women's empowerment, as it can provide economic and social empowerment for women involved in tourism (McCall & Mearns, 2021). The relationship between shop local and tourism can have a significant economic impact on the local economy. Travelers can contribute to the local economy by supporting small businesses, and local businesses can attract more tourists by offering unique products and experiences.

#### **4.7. Public Transport**

In addition to the trade sector, according to the results of the analysis using LQ and DLQ, the transport sector is also a base sector in several regencies, namely in Sleman and Kulon Progo. This sector still has further potential to be developed in Bantul, Kulon Progo, Gunungkidul, and Yogyakarta City. One of the efforts to optimize this sector is by strengthening public transport.

Transport, or public transport, is an important component of the tourism industry, as it provides access to connect tourists to tourist locations (Rebstock, 2017). The tourism industry is a significant source of income for many developing countries, such as India, which relies heavily on tourism revenue (Sharma & Nasreen, 2015). The development of the tourism industry requires a large amount of energy at various stages, including running offices, providing accommodation, marketing products, and transport. The rapid growth of the tourism sector may change travellers' preferences for energy-intensive transport and increase tourism's dependence on non-renewable energy (Amin & Rahman, 2018).

Several case studies have been conducted to analyze the relationship between public transport and tourism. For example, a study in Delhi, India, highlighted key learnings from the Delhi Tourism experience on how PPPs can be implemented in the tourism sector (Sharma & Nasreen, 2015). Another study in Hamadan province, Iran, aimed to evaluate the influence of transport networks on tourism development in the region. In that study, the transport industry plays a major role in promoting the country's destinations, and the impact of transport on travel and tourism is considerable as it is one of the factors that influence tourism growth and ultimately economic development. The coefficient of determination is 0.778, which confirms that 77.8% of changes in the dependent variable can be explained through the independent variable (Mashoufi & Azami, 2019). In addition, a study in Lagos, Nigeria, found that tourists are unwilling to adopt public mass transit for satisfactory travel due to unattractive service attributes, thereby encouraging increased use of private vehicles for active leisure travel, which technically hampers the city's tourist appeal (Oluwatosin et al., 2019).

Public transport plays an important role in the tourism industry, and the two components must align to maximize economic growth. The significant economic impact of tourism and the rapid development of the industry may increase tourism's dependence on non-renewable energy. Several case studies have been conducted to analyze the relationship between public transport and tourism, highlighting the importance of service attributes in attracting tourists to use public transport.

## **5. Closing**

### **5.1. Conclusion**

Based on the analysis using location quotients and dynamic location quotients, tourism is the leading sector in the Special Region of Yogyakarta (DIY). In addition, wholesale, retail, repair of cars, motorcycles, transportation, water supply, waste management, and recycling, as well as government

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administration, defence, and mandatory social security, are also included in the basic and prospective sectors in several regencies and cities in Yogyakarta.

To optimize tourism, several steps can be taken, including through the intensification of economic sectors that are the basis of each regency and city. Increased agritourism development within the agriculture, forestry, and fisheries sectors can increase tourism attractiveness and farmers' income. Effective waste management is also important to reduce negative environmental and economic impacts. In this regard, the development of waste banks and the implementation of a hierarchical model of waste management can be effective strategies. In addition, supporting local shopping and strengthening public transport can also increase tourism's contribution to the local economy.

Overall, optimizing tourism in DIY requires cooperation between various parties, including the government, local communities, and tourism industry players. By strengthening the base sectors and taking strategic measures in tourism development, DIY can strengthen its position as an attractive and sustainable tourism destination.

## 5.2. Research Limitations

Contains things that are limitations in research which then become recommendations or ideas for further research.

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