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MAPPING OF LEADING FRUIT COMMODITIES IN MALANG DISTRICT

Putri Aulia Ramadhani[1], M. Zul Mazwan[1], Wahid Muhammad Shodiq[1]*
[1]Department of Agribusiness, Faculty of Agricultural and Animal Science, University of Muhammadiyah Malang
Corresponding Author: wahidmshodiq@umm.ac.id

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ABSTRACT

Indonesia's economic development process is significantly influenced by the agricultural sector. The horticulture subsector is a promising industry that significantly contributes to economic development. Fruit commodities have become increasingly essential in the horticulture subsector and are in high demand by the community. This implies that the classification of a commodity as either basic or superior within the fruit sector is mostly determined by its fruit production. Conversely, commodities with lower fruit production are classified as non-base or non-primed within the sector. The objective of this study is to examine the fruit commodities that form the primary sector in Malang Regency, as well as analyse the fruit commodities that do not form the primary sector in Malang Regency. The employed data analysis method is descriptive quantitative. The findings of this study indicate that the primary or dominant fruit commodities in Malang Regency include apples, duku/langsat fruit, bananas, and salak fruit. The non-primary or non-dominant fruit commodities in Malang Regency include avocados, grapes, star fruit, durian fruit, guava fruit, large orange fruit, Siamese orange fruit, mango fruit, mangosteen fruit, passion fruit, jackfruit, pineapple, papaya, rambutan, sapodilla, soursop, and breadfruit.

Keywords: Leading Sector, Non Featured, and Fruits

INTRODUCTION

Indonesia is a nation that relies heavily on agriculture due to its plentiful natural resources. The agricultural sector can serve as a source of industrial raw materials, a provider of employment opportunities, and a generator of foreign exchange for the country (Cipta *et al*., 2018). Indonesia's economic development is significantly influenced by the agricultural sector. The horticulture subsector holds significant promise and plays a crucial role in fostering economic development. Horticulture is a subsector within the agricultural sector in Indonesia that has promising potential for growth and advancement. One example is the horticulture subsector that focuses on fruit commodities, which are highly favoured by the general population.

Fruit is an essential commodity that individuals will consistently require and seek out as a means of fulfilling their nutritional requirements, due to its abundance of vitamins and minerals. Fruit is a highly sought-after natural product, both domestically and internationally. Several indigenous Indonesian fruits are quite popular in neighbouring nations. This presents a favourable prospect for Indonesia as it can capitalise on its fruit exports to neighbouring nations, thereby augmenting its revenue and foreign currency reserves (Windarto, 2017).

Malang Regency, located in East Java, exhibits considerable potential in the horticulture subsector. This fruit, native to Malang Regency, has been extensively promoted both locally and outside the boundaries of Malang Regency. The Malang Regency itself boasts a diverse range of fruits, including as avocados, mangoes, jackfruit, starfruit, durian, oranges, and various other fruits.

The initial phase in achieving economic development and gaining comparative and competitive advantages in the face of global trade globalisation is identifying the superior commodities of a region (Rosa, 2019). An assessment is required to determine the priority of superior fruit commodities in the Malang Regency. This will enable the region to identify fruit commodities that possess high competitiveness and can be used as superior regional products. By doing so, the welfare of farmers can be enhanced, leading to both regional and national development. The objective is to enhance regional revenue by exporting commodities to regions that have a shortage of these commodities. Therefore, it is crucial for an area to assess which commodities have the potential to become dominant industries and contribute to the region's economic growth. The objective of this study is to determine the primary and non-primary fruit commodities in Malang Regency.

METHOD

The study was carried out in the Malang Regency region, located in the province of East

Java. The selection of this location was conducted using purposive sampling due to the specific criteria for choosing the research site. Malang Regency was chosen because it is one of the regions in East Java that has horticultural commodity harvests, which account for 29.63% of all sectors in Malang Regency (Widhaswara & Sardjito, 2017).

This study employs a descriptive research methodology with a quantitative approach. The data utilised is derived from secondary sources obtained from the Central Statistics Agency. This study employs the Location Quotient (LQ) methodology. According to Juarsyah (2015) , LQ analysis is employed to differentiate a commodity into its fundamental and non-fundamental sectors. The LQ approach use total production units (measured in tonnes) while analysing fruit commodities. Calculations utilising the LQ methodology are founded on comprehensive production factors. The term "LQ" refers to the ratio of the proportion of crop output in a certain regional subsector (district) to the proportion of total crop production of a specific commodity i at the province level. The LQ formula can be expressed operationally in the following manner:

$$LQ = \frac{pi/pt}{Pi/Pt}$$

Information:
pi : Production of fruit commodities at the district level.
pt : Aggregate yield of the fruit industry at the at the district level
Pi : Production of fruit commodities at the provincial-level
Pt : Aggregate yield of the fruit industry at the provincial level

The LQ computation yields three criteria, namely:

a. LQ > 1 : These commodities serve as the foundation or origin of growth. Commodities possess competitive advantages, enabling them to fulfil the requirements within the specific region and also be exported beyond the region.
b. LQ = 1 : This commodity is categorised as non-essential and lacks a comparative advantage. The production capacity is limited to fulfilling the local demand and does not allow for any exports.
c. LQ < 1 : This commodity is classified as non-basic. Commodity production in a region cannot meet its own needs so it needs to be supplied from outside or imported.

RESULTS AND DISCUSSION

The variety of fruits in Malang Regency is extensive. According to the statistics provided by the Badan Pusat Statistik Kabupaten Malang (2022), there are a total of twenty-two distinct varieties of fruit that are both grown and cultivated within the Malang Regency. Below is a table displaying the fruit production data for Malang Regency.

Table 1. Fruit Commodity Production in the Malang Regency in 2020

No	Commodity	Production (ton)
1	Avocado	35.424
2	Grapes	84
3	Apple	182.129
4	Star fruit	7.767
5	Duku/Langsat	6.234
6	Durian	54.383
7	Water Guava Fruit	704
8	Guava	3.988
9	Big Orange Fruit	58
10	Siam Orange	156.563
11	Manggo	20.470
12	Mangosteen	3.386
13	Passion fruit	37
14	Jackfruit	21.927
15	Pineapple	24
16	Papaya fruit	51.573
17	Banana	992.254
18	Rambutan	12.402
19	Snakefruit	56.820
20	Sapodilla fruit	421
21	Soursop	4.467
22	Breadfruit	3.085
	Total	1.614.200

Source: Secondary data processed by BPS Malang Regency, 2022

The fruit production in Malang Regency described earlier will be analysed using the LQ analysis method, which involves comparing the calculations with the production of fruit commodities in both Malang Regency and the entire East Java region. Subsequently, a LQ value will be acquired. If the LQ value exceeds one, the fruit commodity is classified as part of the superior commodity or base sector. Conversely, if the LQ value is equal to or less than one, the commodity is categorised as a non-leading or non-base sector. This makes it simpler to differentiate between superior fruit commodities and those that fall under non-leading commodities.

Table 2. Fruit Commodity Production in the East Java Province in 2020

No	Commodity	Production (ton)
1	Avocado	175.735
2	Grapes	692
3	Apple	515.619
4	Star fruit	59.383
5	Duku/Langsat	16.010
6	Durian	275.795
7	Water Guava Fruit	33.730
8	Guava	90.846
9	Big Orange Fruit	19.983
10	Siam Orange	712.585
11	Manggo	1.292.960
12	Mangosteen	43.664
13	Passion fruit	8.891
14	Jackfruit	177.413
15	Pineapple	220.552
16	Papaya fruit	268.375
17	Banana	2.618.795
18	Rambutan	126.863
19	Snakefruit	141.073
20	Sapodilla fruit	19.898
21	Soursop	40.819
22	Breadfruit	19.070
	Total	6.878.751

Source: Secondary data processed by BPS, 2021

The data will thereafter be examined with the Location Quotient (LQ) analysis methodology. Subsequently, a LQ value will be acquired. If the LQ value exceeds one, the fruit commodity is classified as part of the superior commodity or base sector. Conversely, if the LQ value is equal to or less than one, the commodity is categorised as a non-leading or non-base sector commodity. This makes it simpler to differentiate between excellent fruit commodities and fruit commodities that fall under the non-leading category.

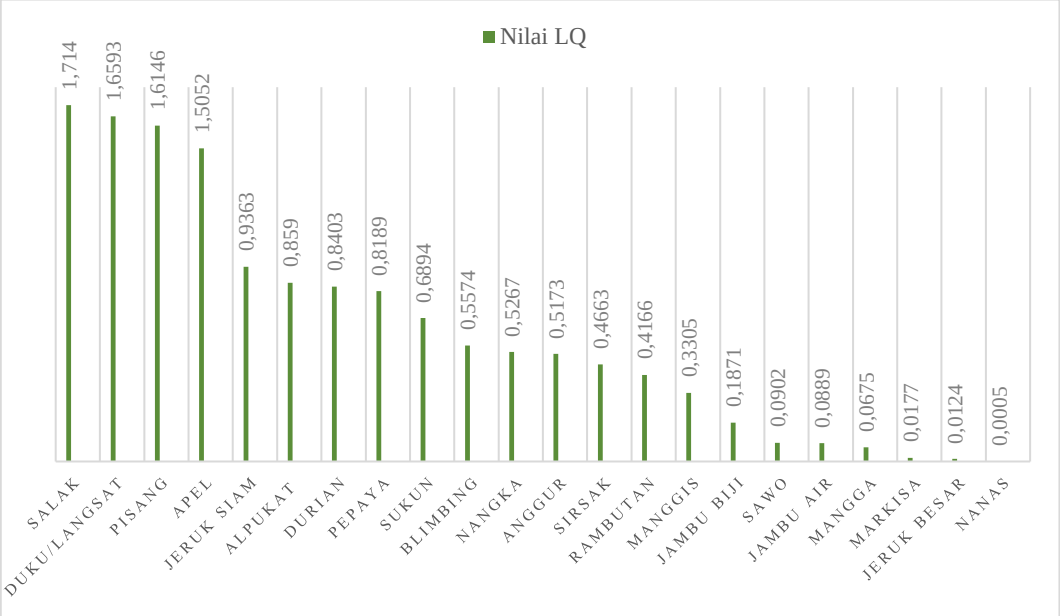
Ameliya *et al.* (2020) state that LQ analysis is a methodological instrument employed to discern economic conditions, with the ultimate goal of determining the specialisation of a certain region. The LQ analysis is derived by comparing the output of a certain sector within a district to the overall output of all commodities within the district, as well as comparing the output of the same sector within the province to the total output of that sector across the province. If the Location Quotient (LQ) calculation yields many outcomes (LQ > 1) in a certain sector, then that sector is considered the base sector or leading sector in Malang Regency. If the results of the Location Quotient (LQ) calculation in a sector show a value less than one (LQ < 1), then that sector is considered a non-base or non-leading sector in Malang Regency. This implies that the sector cannot supply products to other areas (Basuki & Mujiraharjo, 2017).

Table 3. LQ Analysis Calculation Results

No	Commodity	LQ value	Information
1	Avocado	0.8590	Non-leading sectors
2	Grapes	0.5173	Non-leading sectors
3	Apple	1.5052	Leading sectors
4	Star fruit	0.5574	Non-leading sectors
5	Duku/Langsat	1.6593	Leading sectors
6	Durian	0.8403	Non-leading sectors
7	Water Guava Fruit	0.0889	Non-leading sectors
8	Guava	0.1871	Non-leading sectors
9	Big Orange Fruit	0.0124	Non-leading sectors
10	Siam Orange	0.9363	Non-leading sectors
11	Manggo	0.0675	Non-leading sectors
12	Mangosteen	0.3305	Non-leading sectors
13	Passion fruit	0.0177	Non-leading sectors
14	Jackfruit	0.5267	Non-leading sectors
15	Pineapple	0.0005	Non-leading sectors
16	Papaya fruit	0.8189	Non-leading sectors
17	Banana	1.6146	Leading sectors
18	Rambutan	0.4166	Non-leading sectors
19	Snakefruit	1.7164	Leading sectors
20	Sapodilla fruit	0.0902	Non-leading sectors
21	Soursop	0.4663	Non-leading sectors
22	Breadfruit	0.6894	Non-leading sectors

Table 3 presents an analysis of the base sector in Malang Regency using the LQ analysis method. The analysis identifies four types of fruit as the base sector, namely apples with a LQ value of 1.5052, duku/langsat fruit with a LQ value of 1.6593, bananas with a LQ value of 1.6146, and

salak fruit with a LQ value of 1.7164. These four fruit commodities have a LQ value greater than 1, indicating that they are superior commodities in Malang Regency. The following is a graph of the results of analysis using the LQ method on superior fruit commodities in Malang Regency.



Grafik 1. LQ Value Calculation Results

The outcomes of employing the LQ analysis method to compute base or superior sector fruit commodities are illustrated in Graph 1. The outcomes of this analysis indicate that a commodity is classified as base or superior if its LQ value is greater than one (>1). Conversely, if the calculated value is less than one (<1), the commodity is classified as non-base or non-featured. If the computed value is greater than 1, then the fruit production is adequate to meet the needs of the local population. However, if it is less than 1, then the fruit production is insufficient to meet the needs of the local population. In order to stimulate regional economic expansion, leading sectors are those that can be further developed (Kesuma & Utama, 2015).

The quality of various fruit commodities is determined by factors such as plant cultivation practices, soil fertility, pest and disease management, weed control, and climate conditions (Ariadi, 2022). Optimal soil conditions will lead to robust growth of fruit plants, enabling them to yield high-quality goods that are equally competitive with fruit products from other regions engaged in horticultural cultivation (Agustina *et al*., 2020). The non-base sector refers to a sector that does not represent a superior product within a certain location, as is the case in this research conducted in Malang Regency. The non-based sector can be seen as indicating that the outcomes of current goods are only meant for the region (Hamdani, 2016). Table 3 provides information on the non-basic sector in Malang Regency, which has been analysed using the LQ analysis method. The analysis reveals the presence of 18 types of fruit, each with its respective LQ value. These fruits include avocados (LQ value: 0.8590), grapes (LQ value: 0.5173), star fruit (LQ value: 0.5574), durian fruit (LQ value: 0.8403), water guava fruit (LQ value: 0.0889), guava fruit (LQ value: 0.1871), large orange fruit (LQ value: 0.0124), Siam orange fruit (LQ value: 0.9363), mango fruit (LQ value: 0.0675), mangosteen fruit (LQ value: 0.3305), passion fruit (LQ value: 0.0177), jackfruit (LQ value: 0.5267), pineapple fruit (LQ value: 0.0005), papaya fruit (LQ value: 0.8189), rambutan fruit (LQ value: 0.4166), sapodilla fruit (LQ value: 0.0902), soursop fruit (LQ value: 0.4663), and breadfruit (LQ value: 0.6894).

These fruits belong to the non-basic or non-prime sector, which restricts their exportation beyond Malang Regency. They can only be supplied inside the boundaries of Malang Regency. Through this LQ analysis, it becomes simpler to identify the fruit commodities that serve as the foundation or primary sectors, as well as the non-primary sectors. This information can then be used to determine which leading sectors should have their production increased, with the aim of boosting the value of future exports. has the potential to enhance the financial earnings in Malang Regency.

Based on the aforementioned analysis, it is evident that fruit commodities with significant production volumes in Malang Regency may not necessarily be considered superior commodities

according to existing theory. Similarly, fruit commodities with limited production volumes in Malang Regency may not necessarily be considered non-dominant commodities, when evaluated according to established theories. According to a study conducted by Subambhi *et al.* (2020), the divisor value used in calculating the Location Quotient (LQ) can have an impact on determining the leading and non-leading sectors. This divisor value is based on the production per fruit commodity in East Java Province and the total fruit production in the same province.

Malang Regency benefits from a strong regional income due to the analysis of high-quality fruit commodities. This can be observed through the sectors categorised as basic and non-basic, which show significant potential in the region. The government's policies aim to ensure the well-being of the community. According to Nursan & Septiadi (2020), continuous development in the agricultural sector is necessary to establish a superior and sustainable agriculture system. This would enable the creation of added value in agricultural goods, leading to increased revenue for farmers. Alhaq (2017) asserts that the primary determinant of a region's economic growth is closely linked to the external demand for products and services.

CONCLUSIONS

Based on the findings and analysis, the subsequent deductions can be made. The basic or leading sector in Malang Regency consists of four types of fruit commodities: apples, duku/langsat fruit, bananas, and salak fruit. There are a total of 18 fruit commodities in the non-basic or non-leading sector in Malang Regency. These include avocado, grapes, star fruit, durian, water guava, guava, large orange, Siamese orange, mango, fruit mangosteen, passion fruit, jackfruit, pineapple, papaya, rambutan, sapodilla fruit, soursop, and breadfruit.

The author can provide the following recommendations to various entities. There is an expectation that the Government will enhance the production of high-quality fruit products and offer education on processing fruit to generate higher economic value. This is anticipated to result in a rise in regional income in Malang Regency. It is expected that students can use this as a guide to enhance the management system and empower farmers to enhance the economic value of fruit processing, hence increasing regional income in Malang Regency. Additional research is required to analyse the causative elements that contribute to the superiority of certain industries over others. Additionally, it is imperative to examine the strategies that will be used to facilitate the transformation of non-leading sectors into leading sectors.

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