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Analysis Location Quotient Analysis in Determining Leading Horticulture Products in Ngawi District

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Abstract: The agricultural sector is one sector that has great potential to improve the economy. To increase the role of the government and the income of fruit and vegetable farmers, the government and farmers need to better manage their business results for marketing or sale. The level of welfare of fruit and vegetable farmers is still low, this is not because the selling price of fruit and vegetables is low, nor is it because of the large number of imported fruit and vegetables, but rather because of the government's lack of attention to the fruit and vegetable sub-sector, especially durian. snakefruit. Oranges, bananas, mangoes and papaya. This research used a descriptive method, which was carried out in Ngawi Regency. The selection of the research area and determination of samples was carried out deliberately. Data collection uses the interview method using questionnaires to obtain primary data and documentation methods to obtain secondary data. The data analysis method uses qualitative and quantitative descriptive analysis using the Location Quotient approach which tests the validity of the data using methods, sources and theories. The results of the research show that the factors that have a real influence on the income of fish farmers in Nagari Andaleh, Luak District, Limapuluh Kota Regency, are the leading commodities for the Fruits and Vegetables sub-sector, namely Salak with an LQ value of 4.19 and Durian with an LQ value of 2.36. Other types of commodities such as Oranges with an LQ value of 0.64 also have the potential to be developed, in contrast to non-seeded commodities, namely Bananas with an LQ value of 0.03, Mangoes with an LQ value of 0.05 and Papaya with an LQ value of 0.06.

Keywords: Location Quotient; Leading Commodities; Income.

Introduction

Agriculture plays a crucial role in the economic progress and food security of many countries, including Indonesia. To achieve sustainable economic growth and face the challenges of food security, it is crucial to develop food crop commodities with high potential. Almost all districts in Indonesia have abundant natural resources that support the agricultural sector. With great agricultural potential, they have the opportunity to become major players in meeting food needs and supporting economic development at both local and national levels (Swinnen et al, 2016). Economic sectors that have gained competitiveness in recent years have promising prospects in the future (World Bank, 2021). On the other hand, while some economic sectors currently lack competitiveness, they have the potential to grow in the future. By identifying these potentials, development policies can be formulated based on efforts to increase economic growth (Todaro & Smith, 2014).

Community welfare is a very important component in the progress of a country. Along with improving the welfare of the community, an increase in living standards must always be pursued. As well as the national development goals that must be achieved, namely improving living standards in the regions through harmonious, integrated development between sectors with efficient and effective planning towards achieving regional independence (Suratiyah, 2015).

Regional development is considered very strategic within the framework of implementing national development. Not only is regional development an integral part of national development, but because regional development is recognised as successful in encouraging increased equity, stability, growth, and community welfare as the main actors of development (Paramartha et al., 2017). The economic development of

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a region can be measured through economic growth, which at the same time this indicator provides an overview of the extent to which regional economic activity in a certain period has resulted in an increase in income for the community as indicated by an increase in per capita income (Priangga et al., 2022).

Ngawi Regency with an area of 1298.58 km2 is known as the second highest rice producer in East Java province. In addition, Ngawi Regency is also a producer of various agricultural products ranging from horticultural crops, plantation crops such as durian, sugar cane, mangoes, teak wood producers, avocados, corn, tobacco, coffee, and others. The high awareness of the farming community in empowering land to develop agricultural resources has led to an increase in agricultural products. So that in the last five years there has been no research that raises related superior commodity products in the area. The number of agricultural sectors produced, so now a study of superior commodities is needed to find superior products among the farming community (Junari et al., 2020).

Basically, to increase farmers' income, farmers need to manage their products better before marketing or selling them. This of course will increase production costs, but production costs are as compensation received by them in the production process (Daniel, 2004). Superior commodities are factors that need to be considered and owned in increasing income, which includes: horticultural commodities. In general, these commodities are used by farmers to meet their daily needs, the main source of income and activities carried out continuously. Superior commodities that will be a source of income for farmers will increase income by looking at the potential based on the superiority of horticultural crops location in the area (Paramartha et al., 2017).

The level of welfare of farmers, is still low, this is not because the selling price of the product is low, nor is it because of the many imported products, but rather due to the lack of government attention to the superior commodity sector, especially horticulture. The government is less or even never able to see the main problems faced by our farmers, so the solutions provided are also always less precise (Tarigan et al., 2010). The leading commodities of horticultural crops in Ngawi Regency need to be known by horticultural farmers to obtain profits and efficient use of capital for farming.

Method

The research was conducted in Ngawi Regency. The selection of the research area was carried out by purposive method or deliberately (Sugiyono, 2013), Ngawi Regency was chosen, with the consideration that: 1) Ngawi Regency selected has never been conducted the same research, 2) Ngawi Regency currently has great potential in the agricultural sector both in its utilisation and to be developed, and 3) the high awareness of the farming community in empowering land to develop agricultural resources has led to an increase in horticultural products. This research was conducted for 4 months from June to September 2024.

The research design used is to use descriptive quantitative methods with census techniques (Priangga et al., 2022). The type of data used is secondary data in the form of agricultural commodity production data for 2018-2020. Quantitative descriptive analysis by conducting 1) understanding of the vision, mission, goals and objectives of development, strategies, development policies in investment, especially in the economic sector through strategic leading economic sectors that can stimulate the development of other fields in Ngawi Regency for the medium and long term, 2) understanding and analysis of the conditions and potential of the region, both directly and indirectly related to the development of the economic sector, 3) identification of leading economic sectors in Ngawi Regency, 4) Location Quotient (LQ) to identify the internal potential of a region, namely the economic sector. Location Quotient (LQ) to identify the internal potential of a region, namely which sectors are basic sectors and which sectors are non-basic sectors. 5) Weighting Analysis, to determine the size of the potential weight of a region's superior product based on certain indicators, structural shifts, the relative position of economic sectors and the identification of potential economic sectors of a region and then compare it with other regions Economic Feasibility Analysis of the development of superior agricultural sectors in Ngawi regency.

The analysis methods used include: 1) Location Quotient (LQ) Analysis: Used to determine the base and non-base commodities of a region. The classification criteria use LQ>1 for base commodities, LQ=0 for the same commodity specialization level at the district and provincial levels, and LQ<1 for non-base commodities (CIA, 20116); 2). Growth Ratio Model (GRM) Analysis: Used to compare the development of commodities in the study area with reference areas. The results of the GRM analysis yield four classifications of leading commodities based on the combination of the Reference Region Growth Ratio (RPr) and the Study Region Growth Ratio (RPs) (Haines-Young & Potschin, 2018); 3) Overlay Analysis: This method is used to depict commodities with potential based on growth ratios and comparative advantages. The classification criteria for commodities use the results of the Location Quotient

(LQ) analysis and Growth Ratio Model (GRM) analysis; 4). Shift-Share Analysis: The objective of this analysis is to determine the performance or productivity of commodities in the study area compared to a larger regional area. This analysis uses income based on staple crops as the main variable (Boschma & Fritsch, 2018).

Klassen Typology Analysis: This method is used to describe the patterns and structures of commodities in the study area. There are four classifications of agricultural sectors based on their characteristics (Smith & Johnson, 2012).

The stages of analysis

Location Quotient analysis tool is a comparison of the magnitude of the role of a sector/industry in a region against the role of a sector/industry nationally or in a district against the role of a sector/industry regionally or at the provincial level to determine the leading agricultural commodities of Ngawi Regency refers to the formulation of Bendavid (1991) with the following equation:

$$LQ = \frac{Pij \,/\, P_j}{P_{ir} / P_r} \quad (1)$$

Description:
Pij = Production value of horticultural commodities i in the sub-district area
Pj = Total production value of horticultural commodities in the sub-district
Pir = Production value of horticultural commodities i in the district area
Pr = Total production value of horticultural commodities in the district

Criteria for measuring the resulting LQ value as follows:

1. If the LQ> 1 means that the commodity becomes a base or a superior commodity, the results can not only meet the needs of the region concerned but also can be exported out of the region.
2. If LQ < 1 means that the commodity is classified as non-base, has no superiority, the production of these commodities in a region can not meet its own needs so that it needs supply or import from outside.
3. If LQ = 1 means that the commodity is classified as non-base, has no advantages, the production of these commodities is only able to meet the needs of the region itself and is not able to be exported.

Descriptive statistics is a part of statistics that studies how to collect data and present data so that it is easy to understand. Descriptive statistics only deals with describing or providing information about data or conditions. In other words, descriptive statistics functions to explain the situation, symptoms, or problems. Drawing conclusions on descriptive statistics (if any) is only aimed at the existing data set (Hasan., 2007).

Descriptive statistics are statistics that use data on a group to explain or draw conclusions about that group only. Descriptive analysis is a statistic used to analyse data by describing or describing the data that has been collected as it is without intending to make general conclusions or generalisations (Istiqamah & Novita, 2017).

The data collection methods used in this study include: Conducting observations and surveys at locations in the Lingga Regency area with location selection carried out purposively in rural areas with consideration of the number of potential villages, poor families and the number of residents per sub-district. The potential for community economic development and superior products in villages in each sub-district in Ngawi Regency. The survey was conducted by considering developmental research methods. Interviews with officials directly. Focus Group Discussion (FGD), this FGD method aims to find out the condition of the region and the existing economy in depth in each research area. To cross-confirm between policy makers, implementers and targets as well as the preparation of community economic planning. Questionnaires were distributed to the community to obtain opinions and aspirations about the products produced and economic development that can increase the income and standard of living of the community.

Result and Discussion

The high awareness of the farming community in empowering land to develop agricultural resources has led to an increase in agricultural products, especially horticulture. So that in the last five years there has been no research that raises related superior horticultural commodity products in the area. The number of agricultural sectors that are produced, it is currently necessary to study the superior horticultural commodities to find superior products that exist among the farming community (Sjafrizal, 1997). Theories in regional economic development are influenced by several factors, namely: 1. Economic Base Theory: This economic base theory was put forward by Harry W. Richardson who stated that the main determining factor for a region's economic growth is directly related to the demand for goods and services. services from outside the region (Arsyad et al., 2011). In the midst of changes in the world economy and shifting consumer interests, the tropical plant subsector is one of the great potentials

that can support economic growth (Pratap & Mamnun, 2017). Tropical plants have a high selling value and can compete in domestic and foreign markets. This is based on previous research, as revealed by Nugroho & Setiawan (2021), tropical plant commodities in this area have shown their ability to support community income, especially in rural areas.

This assumption provides the understanding that a region will have a superior sector if the region can win competition in the same sector as other regions so that it can produce exports (Suryana., 2000). 2. Central Place Theory Central Place Theory assumes that there is a hierarchy of places where each central place is supported by a number of smaller places that provide resources (industry and raw materials). Central place theory shows how land patterns from different industries form a regional system of cities (Supomo, 2000). 3. Spatial interaction theory is the flow of movement that occurs between service centers in the form of goods, people, money and others. For this reason, there is a need for relationships between one region and another because with interaction between regions, regions will complement each other and work together to increase the rate of economic growth (Syamsu, 2002).

Fruit and vegetable sub-sector commodities that have developed in the past 3 years based on production data of the fruit and vegetable sub-sector in Ngawi Regency are Mango, Durian, Orange, Banana, Papaya and Salak. The following results analyse the potential of the fruits and vegetables sub-sector based on production indicators for the last 3 years. I. LQ analysis in Table 1, shows that Ngawi Regency has the potential to develop Durian and Salak, for Citrus it is expected that there will be an approach taken by the government through programmes that can certainly raise the potential of Citrus in Ngawi Regency, then for Banana, Mango and Papaya there needs to be quite a lot of effort, so that the potential for the three commodities can develop well and can become a basic sector.

These three commodities, despite their high production levels, have not yet become a leading/base sector, so this needs to be resolved by making plans that will make these three commodities a leading commodity because the potential at the production level exceeds other commodities. Apart from the economic aspect, agriculture also has a social role. The agricultural sector is the main livelihood for most of the population in rural areas, and agricultural products are a source of food for the local community (Tschirley et al., 2015). Therefore, the strategic role of the agricultural sector in improving community welfare and reducing the level of economic inequality in this kabupaten is very important (Titikpina & Takele, 2015).

The leading commodities that affect farmers' awareness and income in Ngawi Regency analysed by LQ are presented in Table 1.

Table 1. Results of Location Quotient analysis of horticultural crops in 2018-2020 in Ngawi Regency.

Fruit and Vegetable Sub-Sector Commodities	Total (Kw)	Value LQ (%)
Mango	970.303	0.05
Durian	19959	2.36
Oranges	73.640	0.64
Banana	1.557.178	0.03
Papaya	760.897	0.06
Salak	11.239	4.19

Table 1 shows that the leading commodities in Ngawi Regency are Durian and Salak with LQ of 2.36 and 4.19, this can be seen from the LQ value which is more than 1 and seeded in 6 sectors. This identifies that the needs of Durian and Salak can be met from production in the Ngawi district itself and surplus production can be sold outside the region. Horticultural development has an important role in improving the economy, growth and in increasing the income of producers of fruits and vegetables through the receipt of added value, employment opportunities and an increase in exports (Tayibnapis & Wuryaningsih, 2017).

Calculations using coefficient techniques, namely localisation coefficient, shift coefficient and specialisation coefficient can be concluded as follows: (a). The value of α for 2 commodities of fruits and vegetables sub-sector in each commodity is > 1, meaning that there is a concentration of fruits and vegetables sub-sector in one district area; (b). The value of C.R > 1 is durian and salak commodities, this indicates that there is an absolute shift of durian and salak producing areas. Based on data on the amount of production of durian and salak commodities each year has shifted the location of production. Land allocation for durian and salak commodities is directed to increase farmers' income so that other supporting access needs to be improved and improved. This is indicated by the LQ value for the two commodities > 1. While for other commodities there is no shift or regional distribution each year remains. c. The value of ß < 1, indicates that there is no specialisation of certain fruits and vegetables sub-sectors in one sub-district area or the commodities produced are spread across almost all sub-districts.

Conclusion

Ngawi Regency is one of the potential areas of East Java province due to its abundant wealth, especially in the fruit and vegetable sector. The utilisation of natural resources processing is still not very optimal, so it

requires handling by the government without having to damage the conservation of natural resources. In the macro-region or in the context of a broader region, the leading potential of Ngawi Regency is mainly the fruit and vegetable sector. The agricultural sector of the Fruit and Vegetable sub-sector is currently more about fulfilling the local needs of the Ngawi Regency area and diversifying businesses for Small and Medium Enterprises, which make up the majority of the livelihoods of the Ngawi Regency community. The leading commodity types for the Fruit and Vegetable sub-sector are Durian and Salak. Other commodities such as oranges also have potential, as do bananas, mangoes and papaya.

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