COMPARATIVE ANALYSIS OF PROFITS OF AGROTOURISM AND NON-AGRTOURISM ORANGE FARMING BUSINESSES IN PAMATANG SILIMAHUTA DISTRICT SIMALUNGUN REGENCY

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Abstract

In Pamatang Silimahuta District, most of the people do orange farming. Facts in the field show that there are two types of citrus farming, namely agrotourism and non-agrotourism citrus farming. Agrotourism citrus farming applies a concept, where visitors can pick directly from the trees at a predetermined price and higher than sold directly to agents. This certainly causes the difference in profits between agrotourism and non-agrotourism citrus farming. This study aims to analyze the amount of profit of agrotourism and non-agrotourism citrus farming and analyze the significant profit difference between agrotourism and non-agrotourism citrus farming in Pamatang Silimahuta District. Sampling in this study used purposive and census methods with a total sample of 46 respondents. The types of data used in this study are primary data and secondary data. Data analysis in this study used a difference test of two free samples (Mann-Whitney test). The results showed that the significance value (0.000) < α (0.05), meaning that there is a significant difference between the average profit of agrotourism and non-agrotourism citrus farming. The results of data analysis show that the average profit of agrotourism farming is greater than non-agrotourism farming.

Keywords: Agrotourism, comparative, Orange, Non Agrotourism.

INTRODUCTION

Indonesia has a great opportunity to develop tourism in the agricultural sector, this can be seen from the many natural beauties that can be an attraction for tourists. A series of agricultural activities such as cultivation to post-harvest can be a separate attraction for tourism activities, if the agricultural sector and tourism sector are developed together, it can spur the progress of Indonesia's economic development. The use of tourism and the agricultural sector in a place is called agrotourism. This is in accordance with the statement of Sutjipta (2001), agrotourism is a system of integrated and coordinated activities for the development of tourism and agriculture, in relation to environmental conservation and improving community welfare. Agrotourism has different meanings depending on the services, activities and facilities available at the tourist attraction (Mwaijande 2007).

Agrotourism is one of the tourism activities that utilizes the potential of agriculture as a tourist attraction, either in the form of natural scenery of agricultural areas or agricultural production activities such as picking one's own agricultural products. Agrotourism activities can support farmers' income and increase profits for the surrounding community. The benefits/advantages of developing agrotourism for local farmers are as follows:

a. Agrotourism can create opportunities for local farmers to increase their income and improve their standard of living and business continuity; b. Reduce the flow of urbanization to urban areas because people have been able to get a decent income from their businesses in the village; c. Become a good medium to educate the public/community about the importance of agriculture and its contribution to the economy in general and improve the quality of life;
d. Agrotourism can be a promotional medium for local products, help regional development in marketing businesses, create added value and direct marketing that can stimulate economic activities and provide benefits to the community in the area where agrotourism is developed.

Based on the scope and potential of its appeal, there are several types of agrotourism, namely food crop and horticulture agrotourism, plantations, fisheries, livestock, and forestry. Each type of

agrotourism has a different character so that it requires different management. Pick-your-own orange agrotourism is included in food crop and horticulture agrotourism (Ahmadi, 2017). Oranges (Citrus sp.) are one of the leading national fruit commodities whose existence is spread almost throughout Indonesia. Indonesia's orange production in 2017, 2018, 2019 respectively reached 2,165,184 tons, 2,408,029 tons, 2,444,518 tons. According to data from the Food and Agriculture Organization (FAO), Indonesia ranks eighth in the largest orange center with a production of 2,722,952 tons in 2020 (FAO, 2020).

Oranges are popular with all levels of society which are generally consumed in the form of fresh fruit. Oranges are useful to help meet the nutritional needs of the community. Oranges contain vitamin C, vitamin A, and other minerals in sufficient quantities (Sarwono, 1982 in Wahyuningsih, 2009). Every 100 grams of fresh oranges contain 28.00 kcal of energy; 0.50 g protein; 0.10 g fat; 7.20 g carbohydrates; 18.00 mg calcium; 10.00 mg phosphorus; 0.20 g fiber; 0.10 g iron; 160 RE vitamin A; 0.60 mg vitamin B1; 0.03 mg vitamin B2; 0.30 g niacin; and 29.00 mg vitamin C (Andriani, 2008). The economic value of orange plants is quite high and can improve the welfare of farmers to be relatively better. Simalungun Regency is one of the orange producing areas in North Sumatra Province. In 2021, it is known that orange production was 119,770 tons (Simalungun Regency in Figures 2022). This can be seen from several sub-districts in Simalungun Regency cultivating oranges. One of them is Pamatang Silimahuta District, which is the 3rd largest orange producer in Simalungun Regency. As the data in Table 1, where the orange production of Pamatang Silimahuta District is 11,500 tons/year.

Table 1. Citrus plant production in Simalungun Regency by District 2021

No	Subdistrict	Production (Tons)
1	Silimahuta	84,000
2	**Silimahuta River**	**11,500**
3	Ancient	6.150
4	Panei Hill	1,470
5	Sidamanik	98
6	Girsang Sipangan Bolon	62
7	Raya	14,850
8	The Glare of the Dolok	1,640
	Amount	**119,770**

Source: Simalungun Regency in Figures, 2022

In addition to being an agricultural center, citrus farming is also used as a tourist spot with a combination of natural beauty and agricultural potential providing bright prospects to be used as a tourist attraction. Pamatang Silimahuta District is the district that applies the most agrotourism concepts than other districts. With an area that has fertile soil and beautiful panoramas, so that the development of agrotourism will have double benefits because in addition to selling services from objects and natural beauty attractions, it also obtains results from the sale of citrus cultivation. Horticultural farmers, especially citrus fruit plants in Pamatang Silimahuta District, many apply the concept of agrotourism. The concept of agrotourism that is applied is that visitors can buy oranges by picking the fruit directly from the tree.

This attracts visitors or tourists who want to experience firsthand how to pick fruit directly from the tree. Visitors only need to pay for the fruit they pick at the price that has been determined. Based on data from the Pamatang Silimahuta sub-district agricultural service, the number of orange farmers who have orange farming businesses in Pamatang Silimahuta sub-district is 963 farmers, with details of 16 agrotourism and 947 non-agrotourism. The advantage of farmers who implement the concept of pick-your-own fruit agrotourism is that farmers can sell the fruit they produce directly without intermediaries (direct selling), so that the price received by farmers is higher than selling to

agents or selling to local markets. In addition, orange farmers who implement the concept of pick-your-own/agrotourism spend their time in the garden every day waiting for visitors or tourists. Orange cultivation activities can provide income for farmers, both farmers who implement agrotourism and farmers who do not implement agrotourism. However, it is generally explained that farmers in the sub-district who carry out agrotourism farming and non-agrotourism farming never calculate profits.

So far, farming has been done to meet the needs of life, then selling some to meet the needs is estimated to be enough and the proceeds from the sale are used to meet other needs. In fact, if viewed from the production, selling price and costs incurred, the profits are different between agrotourism and non-agrotourism farming businesses, where based on the survey results, agrotourism farming businesses require more working hours than non-agrotourism farming businesses because agrotourism farming businesses spend their time maintaining orange groves waiting for tourists to visit. In addition, the selling price obtained by agrotourism farming businesses is higher than non-agrotourism farming businesses, starting from a price of IDR 25,000-IDR 30,000/Kg, while non-agrotourism farming businesses start from a price of IDR 8,000 - IDR 12,000/Kg. The income obtained depends on the price and quantity of each harvest of its production.

LITERATURE REVIEW

Agrotourism Concept

Agrotourism is a combination of the agricultural sector and the tourism sector. According to Nunsjah (2001), agrotourism is defined as a series of tourism activities that utilize a location and the agricultural sector from the beginning to agricultural products in various systems, scales, and forms that aim to expand knowledge, understanding, experience, and recreation in the agricultural sector. Agrotourism is carried out in agricultural areas and these activities include land preparation, planting, maintenance, harvesting, processing of crops until they are ready to be marketed so that tourists can buy the products as souvenirs.

Orange Plants

Orange plants are annual fruit plants that originate from Asia. China is believed to be the first place where oranges grew. For hundreds of years, oranges have grown in Indonesia either naturally or cultivated. The orange plants in Indonesia are a legacy of the Dutch who brought sweet oranges from America and Italy.

Farming Concept

The science of farming has been defined by many people who have analyzed farming. According to Soekartawi (2006), farming science is a goal to achieve maximum profit when someone does it effectively and efficiently in allocating available resources. Farming will be said to be effective when producers can allocate resources as well as possible and farming will be said to be efficient when the utilization of these resources can produce output that exceeds input.

Production cost

Production costs are the total costs incurred to meet production needs, which can be in the form of services or goods (Wanda, 2015). Costs are the total expenditure in the form of money used to produce a product during a period. The cost value in the form of money, which includes the cost of used production facilities such as seeds, fertilizers and medicines, land and costs of production tools (Syafruwadi et al., 2012). According to Hansen and Mowen (2000), costs are the cash value sacrificed to obtain goods and services that can provide benefits in the present and the future. Production costs can be divided into two, namely: fixed costs and variable costs.

Concept of Profit

Profit is the difference between total revenue and costs. According to Kartasapoetra (1998), profit is net revenue or net profit received by the business owner after all business costs have been incurred. Furthermore, the level of farming profit according to Soekartawi (1995) is measured by the net profit of the farming business. The amount of revenue obtained from the sale of production results and the costs incurred for one production process indicate the farmer's profit. This large farmer's profit is obtained at a production level that provides a large difference between revenue and production costs. Revenue in the agricultural sector is production expressed in the form of money before being reduced by the cost of expenses during business activities (Mosher, 1987).

Comparative Analysis

Misbahuddin (2013) stated that comparative analysis is an analysis that is comparative in nature. Comparative analysis aims to compare the similarities and differences of two or more facts and characteristics regarding the object being studied based on a certain framework of thought. This comparative analysis or difference test is often referred to as a significant test.

Hypothesis

Based on the problems and theoretical basis above, a hypothesis can be formulated that there is a difference in profits in agrotourism and non-agrotourism orange farming businesses in Pamatang Silimahuta District, Simalungun Regency.

METHOD

Location, Object and Scope of Research

The research was conducted in Pamatang Silimahuta District, Simalungun Regency. The determination of the research location was carried out intentionally (purposive sampling), namely in Pamatang Silimahuta District, Simalungun Regency, considering that Pamatang Silimahuta District is one of the citrus production districts that most widely implements the concept of pick-your-own citrus agrotourism. Orange farmers in Pamatang Silimahuta District are divided into two categories, namely orange farmers who implement agrotourism and non-agrotourism farmers. The objects of this study are agrotourism and non-agrotourism orange farming businesses in Pamatang Silimahuta District, Simalungun Regency. The scope of this study is limited to the analysis of the differences in profits of agrotourism and non-agrotourism orange farming businesses.

Data Types and Sources

The data required in the study consist of primary data and secondary data. Primary data were obtained from direct interviews with orange farmers in Pamatang Silimahuta District as respondents, by filling out a questionnaire that had been prepared in advance by the researcher through observation activities. The data include farmer characteristics, the average amount of production in one harvest which includes fixed costs, variable costs, income and profits from farmers who implement agrotourism and farmers who do not implement orange agrotourism. Secondary data were obtained from the Pamatang Silimahuta District office, literature, the central statistics agency, and other sources that support the study.

Population and Sample

The population in this study were all orange farmers who implemented the agrotourism and non-agrotourism concepts in Pamatang Silimahuta District. The population was 963 orange farmers, of which 947 were non-agrotourism farmers and 16 were agrotourism farmers. The number of samples taken for non-agrotourism was 30 farmers. This is in accordance with the opinion of Kerlinger and Lee (2000) who suggested 30 samples as the minimum number of samples in quantitative research. The considerations for taking samples were the land area owned 1 hectare and orange plants aged 7 to 9 years. This sample was taken using the Purposive sampling technique,

namely by using several specific considerations according to the desired criteria to determine the number of samples to be studied (Sugiyono 2018). Meanwhile, for farmers who implemented the agrotourism concept, the entire population was sampled, namely 16 farmers. So the total sample was 46 people. The use of the entire population without having to draw research samples as observation units is called the census technique. A sample like this is called a saturated sample, which is usually carried out when the population is relatively small or less than 30 people (Sugiyono, 2016).

Data Analysis Methods

Analysis of citrus farming costs

a. Fixed Costs

Fixed costs in this study are costs incurred by orange farmers that are incurred and are not affected by the amount of orange production produced. Fixed costs include land tax costs and equipment depreciation costs.

b. Cost (Variable)

Variable costs or fixed costs in this study are costs incurred by orange farmers according to the needs of orange production. Variable costs in this study include costs for organic and inorganic fertilizers, pesticides and labor.

c. Total Cost

The total cost in this study is the total cost incurred by farmers in citrus farming. The cost includes the amount of fixed costs and variable costs incurred by farmers. The amount of total costs can be calculated in the following way:

TC = TFC + TVC (Suratiyah, 2006)

Information:

TC = Total cost of citrus farming per year (Rp/Ha/Year)

TFC = Total fixed costs in citrus farming per year (Rp/Ha/Year)

TVC = Total variable costs in citrus farming per year (Rp/Ha/Year)

RESULT AND DISCUSSION

Analysis of Orange Farming Costs

Fixed Cost

Fixed costs are costs incurred by agrotourism and non-agrotourism farmers whose amounts are fixed and do not depend on production volume. Fixed costs also have a depreciation value each year. In agrotourism and non-agrotourism citrus farming, fixed costs include depreciation of the equipment used, which is calculated based on the economic life of each piece of equipment, and other fixed costs in this study are land rental costs incurred for one year. The average fixed costs incurred by agrotourism and non-agrotourism farmers can be seen in the following table.

Table 7. Details of average depreciation of fixed costs per hectare for agrotourism and non-agrotourism citrus farming businesses

No	Fixed Costs	Average/Ha/Yr	
		Agrotourism	Non Agrotourism
1	Pump Machine (Rp)	419,392.35	406,990.22
2	Grass Cutting Machine (Rp)	237,327.74	236,345.48
3	Scissors (Rp)	576,701.11	17,936.38
4	Hoe (Rp)	19,056.42	22,037.03
5	Machete (Rp)	22,492.18	13,981.94
6	Bucket (Rp)	6,515.62	6.225
7	Blue Drum (Rp)	68,665.38	68,944.09

8	Sorong Backhoe	59,850.01	53,782.32
9	Scale (Rp)	108,971.52	97,495
	Amount	**1,518,972.37**	**923,737.49**

Source: Primary Data (processed), 2023

Based on Table 7, it is known that fixed costs in agrotourism farming are greater than non-agrotourism. This is because equipment such as scissors are used more by agrotourism farming because they are used by visitors to pick oranges.

Variable Cost

Variable costs are costs incurred in farming and are used up in one production process. Variable costs are used to purchase production facilities and support such as fertilizers and pesticides. In addition, labor costs are needed to be able to run a citrus agrotourism farming business or non-agrotourism farming business. The number of variable costs used in running a farming business is as follows.

Table 8. Details of average variable costs per hectare of agrotourism farming business

No	Variable Costs	Cost/Ha/Year
1	Manure Cost (Rp)	51,750,000
2	Chemical Fertilizer Cost (Rp)	86,250,000
3	Pesticide Cost (Rp)	56,358,125
5	Fuel Cost (Rp)	898,437.5
6	Transportation Cost (Rp)	4,050,000
7	Plastic Bags (Rp)	1,783,562.5
8	Equipment Maintenance Costs	1,906,250
9	Labor Cost (Rp)	122,400,000
Amount		**325,396,375**

Based on the table above, it can be seen that labor costs are higher than other variable costs. Agrotourism farming requires more labor because the agrotourism orange garden must be guarded every day to wait for tourists to visit. In addition, this farming business also has additional costs, namely the cost of plastic bags for visitors who will buy oranges.

Table 9. Details of average variable costs per hectare of non-agrotourism farming businesses

No	Variable Costs	Cost/Ha/Year
1	Manure Cost (Rp)	53,524,800
2	Chemical Fertilizer Cost (Rp)	89,208,000
3	Pesticide Cost (Rp)	55,200,000
5	Fuel Cost (Rp)	1,221,750
6	Transportation Cost (Rp.	910,000
7	Harvest Labor Cost (Rp)	2,610,000
8	Equipment Maintenance Cost (Rp)	1,836,666.67
9	Labor Cost (Rp)	91,800,000
Amount		**296,311,217**

Source: Primary Data (processed), 2023

Based on Tables 8 and 9, it is known that the production costs incurred in agrotourism and non-agrotourism farming businesses are different. From the total production costs, it is known that the use of labor costs in agrotourism farming businesses is greater than non-agrotourism because the number of working days and workers in agrotourism farming businesses is greater than non-agrotourism where on big days and Sundays agrotourism workers continue to work guarding the garden waiting for tourists to visit while non-agrotourism workers do not work. The work carried out is fertilizing, cutting, spraying, cutting grass, collecting fallen oranges which are then buried, cleaning the orange trunk area and supervising the workers. Meanwhile, non-agrotourism farming businesses have two types of workers, namely permanent workers who work every day except Sundays and big days and workers for harvesting, where this workforce is used during the regular orange harvest. During the regular harvest, farmers harvest it themselves and sell it to agents, while during the main harvest, it is usually bought directly by the agent to the garden directly with the harvest costs borne by the agent who buys the oranges.

Total Cost

Total production cost is the total cost incurred in running an agrotourism and non-agrotourism farming business in a year. Cost calculation is very important to find out how much cost has been incurred. Each business has a different total cost, where the amount of total business cost is determined by the amount of fixed costs and variable costs. Total production cost is the sum of fixed costs and variable costs in agrotourism and non-agrotourism farming businesses in Pamatang Silimahuta District in a year.

Table 10. Average total production costs per hectare of agrotourism and non-agrotourism farming businesses

No	Cost	Average Cost Total/Ha/Year	
		Agrotourism	**Non Agrotourism**
1	Total Fixed Cost	6,518,972.37	5,923,737.49
2	Total Variable Cost	325,396,375	296,311,217
	Amount	**331,915,347**	**302.234.954**

Source: Primary Data (processed), 2023)

Based on the table above, it can be seen that the total fixed cost of agrotourism is higher than non-agrotourism. This is because one of the tools, namely scissors, is used more in agrotourism because it is used by visitors to pick oranges and cut orange branches. While non-agrotourism only uses oranges as a pruning tool for unnecessary orange branches.

Acceptance Analysis

Revenue is the result of multiplying the amount of production by the selling price of agrotourism and non-agrotourism oranges. The following is a table of the average total revenue of agrotourism and non-agrotourism farming businesses.

Table 11. Average production and income per hectare of agrotourism farming

No	Agrotourism	Selling Price (Rp)	Production (Kg)	Reception
1	Sales to Tourists	26,562.5	17,835,625	468,618,750
2	Sales to Agents	8,750	24,468.75	214,406,250

	Amount	**35,312.5**	**42,304,375**	**683,025,000**

Source: Primary Data (processed), 2023

Based on the table above, it can be seen that the average income of agrotourism farming business per year in one hectare is Rp. 683,025,000, where sales to tourists are made every day and sales to agents are made during the main harvest because during the main harvest the orange production is high and is not completely absorbed by tourists. The selling price during the main harvest also decreases due to the large amount of orange production, while for sales to tourists which are made every day the selling price is relatively higher. The selling price of oranges to tourists remains high even during the main harvest because visitors are free to choose the oranges in the garden both in terms of size and level of ripeness. Meanwhile, sales to harvesting agents are done by shoveling, which means all oranges that are ready to be harvested at a certain level of ripeness will be taken without considering size.

Table 12. Average production and income per hectare of non-agrotourism farming businesses

No	Non Agrotourism	Selling Price (Rp)	Production (Kg)	Reception
1	Harvest 1	8,566.67	21,186.67	180,913,333.3
2	Harvest 2	11,333.3	4.110	46,553,333
3	Harvest 3	11,333.3	3,416.67	37,976,667
4	Harvest 4	8,733.3	16,086.67	140.193.333,3
	Amount	**9,991.64**	**44,800**	**405,636,666.7**

Source: Primary Data (processed), 2023

Non-agrotourism farming experiences 4 harvests a year, 2 of which are major harvests and 2 small harvests. All harvests will be sold to agents. The first and fourth harvests are major harvests with a larger production volume than harvests 2 and 3, which are small harvests with lower orange production, but prices are higher during small harvests because production is small. The profits of agrotourism and non-agrotourism farming are different, this is due to differences in production volume and selling price.

Profit Analysis

Profit is the difference between the amount of income and the costs incurred. In agrotourism farming and non-agrotourism farming, profit is the value obtained after the total income is reduced by the total production costs in one year. The profits obtained in agrotourism farming and non-agrotourism farming can be seen in the following table.

Table 13. Average profit per hectare of agrotourism and non-agrotourism farming businesses

No	Farming	Receipts (Rp)	Total Cost (Rp)	Profit (Rp)
1	Agrotourism	683,025,000	331,915,347	351,109,652.6
2	Non Agrotourism	405,636,666.7	302.234.954	103,401,712.5

Based on the table above, it can be seen that the profits obtained by farmers who implement agrotourism and non-agrotourism are different. Agrotourism farming businesses gain a profit of Rp. 351,109,652.6 and non-agrotourism farming businesses gain a profit of Rp. 103,401,712.5. From the table, it can also be seen that farmers who implement agrotourism are more profitable than farmers

who do not implement agrotourism. This is because the selling price of farmers who implement agrotourism is greater than the selling price of non-agrotourism sold to agents. Therefore, it affects the profits obtained by farmers.

Two Independent Sample Difference Test (Mann-Whitney Test)

The difference in profit between agrotourism and non-agrotourism farming in Pamatang Silimahuta District. It can be clearly seen through the Mann-Whitney test analysis as follows.

Table 14. Results of the Mann-Whitney test analysis of the average profit of agrotourism and non-agrotourism farming businesses.

	Benefits of Agrotourism and Non-Agrotourism Farming Businesses
Mann-Whitney U	.000
Wilcoxon	465,000
Z	-5.535
Asymp.Sig. (2-tailed)	.000

Source: Processed Primary Data, 2023

The SPSS Output Results from the Mann-Whitney Test above explain that in asymp.Sig. (2-tailed)/significance for the Mann-Whitney test is (0.000) <α (0.05), thus the hypothesis is accepted meaning that there is a significant difference between the average profit of agrotourism orange farming businesses and non-agrotourism farming businesses. The average profit received by agrotourism farming businesses is Rp. 351,109,652.6 /Ha/Year. While the average profit received by non-agrotourism farming businesses is Rp. 103,401,712.5 /Ha/Year. The difference between agrotourism and non-agrotourism farming businesses is Rp. 247,707,940 /Ha/Year. The difference in profit between agrotourism farmers and non-agrotourism farmers is due to different product selling prices, where agrotourism farmers can sell their harvests for up to Rp. 25,000 to Rp. 30,000/Kg to tourists while non-agrotourism farmers can only sell their harvest at a price of Rp. 8,000 to Rp. 12,000/Kg to agents, so the profits received by each farming business show differences.

CLOSING

Conclusion

Based on the results of the study on the differences in profits of agrotourism and non-agrotourism farming in Pamatang Silimahuta District, Simalungun Regency using the two-sample independent difference test (Mann-Whitney test), it can be concluded that there is a significant difference between the profits of agrotourism and non-agrotourism citrus farming with an average profit of agrotourism of Rp. 351,109,652.6 / Ha / Year and non-agrotourism of Rp. 103,401,712.5 / Ha / Year, meaning that the average profit of agrotourism farming is higher than non-agrotourism.

Suggestion

Based on the conclusion above, the author suggests that farmers in Pamatang Silimahuta District apply the agrotourism concept to their respective orange gardens, because it has greater benefits and is more profitable for farmers.

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