

Any Correlation Between Agricultural Extension with Participation Farmer Groups in Guava Farming?

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ABSTRACT

Guava is a rapidly growing commodity. The management of guava farming carried out by the Sari Tani Mandiri farmer group could have been more optimal. Therefore, it has yet to be able to meet the demand for guava. This study intends to examine the correlation between the role of agricultural extension workers and the participation of members of farmer groups in guava farming management. The survey used a qualitative research approach conducted by interview, observation, and documentation. The Non-Probability Sampling technique determines the sample with a saturated sample type. It was then analyzed using Rank Spearman. The results showed a uni-directional and significant relationship with a moderate correlation between the role of agricultural extension workers and the participation of farmer groups in guava farming management. The research showed that the higher the part of agricultural extension workers, the higher the involvement of farmer group members in guava farming management.

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1. Introduction

The agricultural industry has contributed significantly to the economy in Tasikmalaya Regency, with a total land area of 2708.82 km² and agricultural land area reaching 17.48% or around 473.76 km² of the total area of Tasikmalaya Regency (BPS, 2021). This shows that the agricultural sector plays a vital role for Tasikmalaya Regency, then in advance by geographical conditions that lead to the growth of various agricultural commodities, one of which is the horticulture sub-sector.

The horticulture sub-sector comprises fruits, vegetables, medicinal and ornamental plants (BPS, 2020). Guava is one of the commodities of the horticultural sub-sector, which is included in the category of fruit plants that have rapid development. Tasikmalaya Regency, especially Mangunreja District, is an area that is a place for guava development. This is shown in Table 1, namely production data from guava in Mangunreja District. Mangunreja District is a sub-district consisting of 6 villages, with the number of farmer groups in 2020 is 51 farmer groups. The Sari Tani Mandiri Farmer Group is one of the farmer groups in Margajaya Village, the only farmer group specialising in guava farming with 30 members.

The guava cultivated by the Sari Tani Mandiri farmer group entirely uses seedlings derived from vegetative propagation of plants, called grafting, because it is considered to produce fruit faster than planting guava seeds generatively or from seeds.

Based on data from UPTD BPP, Mangunreja Margajaya Village was the largest guava producer in 2020, with total production reaching 75% of the total guava production in Mangunreja District or around 46.93 tons. (Mangunreja District Program, 2021). Guava production data in Margajaya Village in 2016-2020 can be seen in Table 2. Guava production decreased in production in 2017, then increased production until 2020. Although there was an increase in guava production from 2017-2020, the amount of guava has yet to meet the demand for guava, which has an average difference between production and demand of -3.17 tons.

Table 1. Guava Production in Mangunreja District 2016-2020.

Year	Production (tons)	Production Growth (%)	Percentage Production (%)
2016	58.73	-	19.48
2017	59.14	0.70	19.62
2018	59.72	0.98	19.81
2019	61.31	2.66	20.34
2020	62.58	2.07	20.76

Source: Program UPTD BPP Mangunreja District(2021)

This showed that guava production in Margajaya Village must continue to be increased with the help and encouragement of various related parties, especially from the role of agricultural extension workers. Agricultural extension workers are equal partners for farmers, especially guava farmers, who play an essential role in agricultural development to improve the abilities of farmers both in terms of attitudes, knowledge and skills, which are expected to enhance the welfare of farmers and their family members (Iqbal, 2014). Agricultural instructors in Mangunreja District 2020 amounted to 5 extension workers, with the number of assisted villages totaling 6 villages. This shows that there is still a shortage of agricultural extension workers, which has resulted in some Field Agricultural Extension Officers (PPL) fostering 2 assisted villages.

Farmer participation is defined as the active participation of farmers in the agricultural industry, both individually and in groups, with full awareness and a sense of responsibility. In agriculture, participation is critical to the success of many activities and projects (Kartika et al., 2018). The participation of members of the Sari Tani Mandiri farmer group in guava farming is still not maximized, so only some farmers can improve their abilities, attitudes, skills and knowledge, which causes farmers in guava cultivation to cultivate the traditional way or maintain only modest guava plants which result in the production of guava not being fully maximized.

Agricultural extension is expected to be a means for farmers to increase guava production. If supported by all parties with actual implementation in the field regarding all the information conveyed by extension workers and giving thorough attention to all members of farmer groups, there will be an increase in production (Lita, 2019). Based on the above background, it is necessary to do research that can prove the relationship between the role of agricultural extension workers and the participation of members of farmer groups in the

management of guava farming in Margajaya Village, Mangunreja District, Tasikmalaya Regency.

2. Methodology

The subject of this research was the Sari Tani Mandiri farmer group, located in Babakan Village, Margajaya Village, Mangunreja District, Tasikmalaya Regency. The non-probability Sampling technique was used in determining the sample, with the type of saturated sample for all Guava farmers in the site being 30 people. The data collection in this study was carried out by observation guided by a questionnaire that had been prepared and then photos to carry out data collection as documentation. Variable (X) is the role of agricultural extension workers, and variable (Y) is the participation of members of farmer groups in managing guava farming.

A five-point Likert scale from very low to very high was used to measure the role of agricultural extension workers in guava farming and the participation of farmer group members in guava farming management. To calculate the score of each role and participation variable in the following way:

$$\text{Sum Score} = \text{JRVn}_1 + \text{JRVn}_2 + \dots + \text{JRVn}_{30} \dots\dots\dots(1)$$

Where JRVn is the respondent's answer for each nth sample variable. The results of calculating the score can be used in determining the role category or participation category by using a Likert Scale measurement scale (Manein et al., 2016):

$$\text{Participation Level} = (\text{Collected data score}/\text{Highest Score}) \times 100\% \dots\dots (2)$$

To find out the value of the role of the extension worker and the participation of members of the farmer group based on the percentage of the calculation results can be seen in Table 3. The variable of the role of the agricultural instructor (X) consists of roles as facilitator, motivator, innovator, dynamist, educator, communicator, and technician. Then, the participation variable of farmer group members in guava farming business management (Y) consists of participation in planning, implementation, and evaluation.

The Likert Scale measurement tool measures the role of extension workers and the participation of farmer group members in managing guava farming. Spearman's Rank correlation test was used to determine the relationship between the role of agricultural extension workers and the participation of members of farmer groups in guava farming management. Spearman Rank in (Mamuko et al., 2016) the formula is as follows:

$$r_s = \frac{6 \sum_{i=1}^n d_i^2}{n^3 - n} \dots\dots (3).$$

Table 2. Assessment Criteria Based on Percentage of Role and Participation

Percentage Interval (%)	Level of Role and Participation
80.10 - 100.00	Highest
60.10 - 80.00	High
40.10 - 60.00	Medium
20.10 - 40.00	Low
20.00	Lowest

Source: Primary Data Processed, 2022

Table 3. Correlation Criteria Based on Correlation Value

Correlation Value Interval (rs)	Correlation Rate
0.00 – 0.19	Lowest/Poor
0.20 – 0.39	Low
0.40 – 0.59	Medium
0.60 – 0.79	High
0.80 – 1.00	Perfect

Source: Primary Data Processed, 2022

3. Results and Discussion

The study results showed that agricultural extension workers' roles are categorised in the high role category with a percentage of 79.75%. The results of the calculation (table 5). The variables of the role of agricultural extension workers, as agricultural instructors and facilitators, obtained a score of 608 or 81.07%, included in the very high role category. This research was in line with research conducted by Siti (2019) in Tegalmade Village, Mojolaban District, Sukoharjo Regency. The role of the instructor as a facilitator is significant because the extension worker has tried to provide facilities that follow the needs of farmers during the activity, such as always providing assistance and teaching assistance, resource persons, and counseling materials.

The agricultural instructor rule as motivator scored 601 or 80.13%, which was included in the very high role category. This study was in line with research from Natasha (2019), which mentions that the motivational function of the extension worker is to support farmers in gathering knowledge, such as how to process the product and offer instructions on how to cultivate suitable and good land, how to use technology, ways to increase value to increase production, as well as set an example and encourage farmers to use excellent and appropriate agricultural practices. Overall, it is concluded that the agricultural extension worker's role as a motivator is categorized in very high criteria. This showed that the extension worker's role in motivating members of farmer groups was going well.

Table 4. The Result of the Calculation of the Score of Agricultural Extension Role

No	Variable	Total score	Highest Score	Percentage	Assessment criteria
1.	Facilitator	608	750	81.07%	Very high
2.	Motivator	601	750	80.13%	Very high
3.	Innovator	598	750	79.73%	Tall
4.	Dynamist	608	750	81.07%	Very high
5.	Educator	613	750	81.73%	Very high
6.	Communicaton	581	750	77.47%	Tall
7.	Technician	578	750	77.07%	Tall
Amount		4.187	5.250	79.75%	Tall

Source: Primary Data Processed, 2022

The role of an innovator scored 598 or 79.73%, included in the high role category. This study is in line with research from Rumagit (2016), who explained that the role of the extension worker as an innovator was good. The function (innovation of the extension worker) could be adapted to the customs and habits of the farmers because it could increase their income and

welfare, as well as their views on feasibility. The role of the agricultural extension as a dynamist got a score of 608 or 81.07%, which was included in the very high role category. Research conducted by Lini (2018) explains that the position of the extension agent as a dynamist has shown impressive performance, as evidenced by the respondent's assessment of the role of "very good", with a range of 65 per cent. Farmer groups need this function as a dynamist in order to develop farmer groups that are creative and inventive in their agricultural activities.

The agricultural extension worker's role as an educator got a score of 613 or 81.73%, which was included in the highest category. This aligns with research conducted by Hasrin (2017), which states that the agricultural extension worker's role as the educators of 23 respondents based on scores is in the very high category. It is said to act as an educator because of all the indicators used in the role of an educator. All of them can be carried out frequently by agricultural extension workers. The agricultural extension worker's role as a communicator scored 581 or 77.47%, categorised as the high role category. This is in line with research conducted by Anti (2021), which explains that the role of communication is categorized in the high category. Direct contact allows farmers to offer feedback to agricultural extensionists if there are questions or problems with their application in the field. However, group communication is also beneficial as it allows for direct connection with many individuals simultaneously.

The technician's role gets a score of 578 or 77.07%, including in the high role category, according to research conducted by Ariana (2021), with a total percentage of 46.83% in the good enough category for the instructor's function as a technician. Agricultural extension workers can continue improving demonstration or training activities so farmers can easily understand them. For farmers to get the most out of a new technology, it must be introduced according to their needs and available resources.

Participation of farmer group members as a whole included the moderate category with a percentage of 57.40%. The calculation results can be seen in Table 6. Of the three stages of farmer group members' participation in this study, the participation variable at the planning stage obtained a score of 695 or 66.19%, including the high category. This study is following research conducted by Puspitaningsih (2016). The participation of farmer group members at the planning stage in the beginner and advanced farmer group classes is included in the high category. Farmer group members are advised to be involved in every activity because group activities will answer every need of farmers in their farming business. As a result, groups will need input from farmer group members to develop programs for farmers. Furthermore, the organization anticipates members being encouraged to participate in activities to improve their well-being.

Table 5. Results of Calculation of Participation Scores for Farmer Group Members

No	Variable	Total score	Highest Score	Percentage	Assessment criteria
1.	Planning	695	1.050	66.19%	Tall
2.	Implementation	524	1.050	49.90%	Enough/Medium
3.	Evaluation	589	1.050	56.10%	Enough/Medium
	Amount	1,808	3.150	57.40%	Enough/Medium

Source: Primary Data Processed, 2022

Farmer group members' participation at the implementation stage obtained a score of 524 or 49.90%, included in the sufficient/medium category. Research conducted by Kurniadi (2015) stated that the participation of farmers at the implementation stage was a good category because it had a real positive impact on the level of participation in the mangosteen farming business. The participation of the farmer group in the evaluation stage obtained a score of 589 or 56.10%, which was included in the sufficient/moderate category.

The research conducted by Victoria (2016) said that the farmer group were active in the evaluation because the respondents were less active in providing input or opinions. This is due to their low level of education, which means they only finished elementary school, and also because the attendance rate in the group still needs to improve due to their activities.

Table 6. Spearman Rank Correlation Test Results

			Agricultural Extension Role	Farmer Group Member Participation
Spearman's rho	Extension Role Agriculture	Correlation coefficient	1,000	0.454*
		Sig (2-tailed)	.	0.012
		N	30	30
	Member Participation Farmers	Correlation coefficient	0.454*	1,000
		Sig (2-tailed)	0.012	.
		N	30	30

*. Correlation is significant at the 0.05 level (2-tailed)

Analysis data using Spearman's Rank correlation can be seen in Table 6, which showed a significant correlation between agricultural extension workers' role and farmer groups' participation in guava farming management. A sample of 30 people and a confidence level of 95% ($\alpha = 0.05$) obtained a significant value of 0.012. This significance value is smaller than 0.05 (0.05 0.012). Then, the Spearman Rank correlation value is 0.454, which shows that the correlation strength between these variables is included in the moderate correlation level.

The positive correlation value indicated a unidirectional relationship between the two variables. The more critical the agricultural extension is in the management of guava farming, the higher the participation of farmer group members. This follows research from Padjari (2021) that stated a strong correlation between farmer involvement and the function of agricultural extension workers, with high association requirements and a Spearman Rank correlation score of 0.523. The relationship between the two factors is unidirectional: the more role of agricultural extension workers, the more farmers participate.

4. Conclusion

The agricultural extension worker's role in Mangunreja District as a facilitator, motivator, innovator, dynamist, educator, communicator, and technician in the management of guava farming is in the high role category with a total score of 4,187 by percentage of 79.75%. The participation of the farmer group was good enough at the planning, implementation, and evaluation stages in the management of the guava farming business. The category was moderate participation with 1,808 total score (57.40%). There was a significant and positive

direction with a moderate correlation between the agricultural extension worker's role and the participation of members of the farmer group in guava farming management. The higher the role of agricultural extension workers, the higher the participation of members of farmer groups in managing guava farming.

By looking at the potential and opportunities in the guava farming business, the management of the guava farming business must be carried out more optimally with assistance from various parties, especially the role of agricultural extension workers who are then expected to increase guava productivity and the welfare of farmers and their family members. It needs to research further related to infographics and farmer regeneration in Guava farming to fulfil market needs.

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