



# The level of farmer satisfaction with the citronella partnership in Patikraja District (Case in Kedungrandu Village)

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**Abstract**—Citronella (*Cymbopogon nardus*) is a type of essential oil plant. One of the districts in Central Java that has high potential to develop citronella oil is Banyumas Regency. PT Dewara Nusa Jaya is one of the essential oil refining factories in Banyumas Regency, Central Java which has a partnership with farmers. The purpose of this study was to examine the level of farmer satisfaction with the existing partnership pattern. Research respondents consisted of 40 respondents. Respondents came from fragrant lemongrass farmer groups, namely partner farmers, chairmen and administrators of farmer groups. The data analysis method used the farmer satisfaction analysis method using the Customer Satisfaction Index (CSI) and Importance Performance Analysis (IPA) analysis. The results showed that the level of farmer satisfaction with the attributes of the partnership was quite satisfied. While the results of the analysis of Importance Performance Analysis (IPA) the level of importance of the partnership attribute is greater than the level of partnership performance that occurs.

**Keyterms**— satisfaction, partnership, citronella, CSI, IPA

## I. INTRODUCTION

Citronella (*Cymbopogon nardus*) is a type of essential oil plant that is classified as having developed from the distillation of its leaves, obtained by fragrant citronella oil which in the world of trade is known as Citronella Oil,

Indonesian citronella oil in the world market is known as Citronella Oil of Java. Citronella can be an alternative that can be used for development on dry land and sub optimal land [1].

One of the districts in Central Java that has high potential to develop citronella oil is Banyumas Regency. In this district there is an essential oil processing factory that is able to export 3,000 tons per year. Generally citronella in this place is grown on plantation lands, both on people's plantations and on government property. One of the plantation lands planted with citronella plants is in Kedungrandu Village, Patikraja District. Lemongrass in Kedungrandu Village is planted on land owned by farmers and on plantations belonging to the Class II Penitentiary (Bapas) Purwokerto. In 2021 the number of farmers who plant lemongrass is 38 people. The results of the citronella plant are used as raw materials for the manufacture of essential oils. The processing of essential oils requires certain technology and relatively expensive equipment, so that farmers independently and in groups have not been able to do it. In addition, the sale of citronella plants is not as easy to do as other citronella plants which are often used for flavoring dishes. If the old citronella is not harvested, then the plant becomes dry and the oil yield is reduced. These conditions encourage farmers to form partnerships with essential oil processing companies.

PT Dewara Nusa Jaya is one of the essential oil refining factories in Banyumas Regency, Central Java which has a partnership with farmers. The citronella distillery at the company has a capacity of 500 kg for one cooking. The production of citronella oil distillation in Kedungrandu Village was sent to Jakarta and used as raw material for making aromatherapy oil, carboic acid, hand sanitizer and cosmetics. Citronella distillation at PT Dewara Nusa Jaya is still not optimal due to limited raw materials, namely fragrant lemongrass plants. The lack of supply of citronella plants that is felt in the essential oil industry encourages companies to determine strategies to overcome these problems. One of the strategies used by the company in overcoming the lack of supply of citronella plant raw materials for its production is to establish partnerships with citronella farmers. The forms of cooperation carried out are as follows: the company provides seeds and fertilizers to farmers, and on the other hand the farmers will sell their products to the company.

In economic development, the partnership pattern is the embodiment of the ideals to implement a mutual cooperation economic system that is formed between partners who are strong in terms of capital, market and technological capabilities with inexperienced weak and poor farmers. The goal is to increase productivity and effort in the common interest. Therefore, economic development with a partnership pattern is considered a profitable business, especially in terms of achieving long-term national development goals. The partnership between citronella farmers and PT Dewara Nusa Jaya will run smoothly and sustainably if both parties benefit, view positively about the partnership, and both are satisfied with the partnership relationship so far. Positive perceptions and satisfaction will be realized if each partnering party carries out its rights and obligations correctly and appropriately. Deviations that often occur in the implementation of partnerships are deviations from the agreed agreement such as obligations that are not fulfilled by the partnering party.

Another obstacle that occurs in partnerships is that the partnership foundation that underlies the partnership is less strong, such as a partnership that is based on compassion or on the basis of coercion from other parties, not a reason to move forward and develop with the partnership party. Another reason for the failure of the partnership is the lack of business ethics applied in the implementation of the partnership so that the partnership will become fragile and cause the partnership to not work well. This condition makes the position of small businesses on the weak side and medium and large businesses are very dominant tend to exploit the small ones, in addition, the weak human resources owned by small businesses are also often a factor in the failure of business partnerships.

As for the problems of lemongrass farmers, they hope that the partnership provided by PT Dewara Nusa Jaya can solve their farming problems effectively. So that the partnership can help solve problems and provide solutions. If the partner (PT Dewara Nusa Jaya) has carried out the attributes of the partnership well, the

farmers will be satisfied with the performance of the partnership carried out by PT Dewara Nusa Jaya. Based on the identification of these problems, this study tries to analyze the level of satisfaction of lemongrass farmers on the performance of the partnership conducted by PT Dewara Nusa Jaya in Kedungrandu Village, Patikraja District.

## II. RESEARCH METHOD

The research was conducted at the Citronella Farmers Group in the village of Kedungrandu, Patikraja District, Banyumas Regency. The research method uses a survey method. The types of data are primary and secondary. Primary data is data obtained from interviews with the Citronella Farmers Group using a questionnaire. Secondary data were obtained from documents from farmer groups and related institutions, such as the Agriculture Service, Patikraja District Extension Center (BPK) and BPS. The selection of research respondents was carried out intentionally (purposive sampling) by selecting certain people who were considered capable of providing information about the partnership between farmers and the company. The number of farmers who were used as respondents was 40 people.

Data collection techniques using instrumental such as interviews, observations, documentation and questionnaires. Analysis of the data used are validity and reliability tests, analysis of Customer Satisfactions Index (CSI) and Importance Performance Analysis (IPA). Customer Satisfaction Index is a method of measuring the overall level of consumer satisfaction with the performance of the extension worker. The steps in measuring the Customer Satisfaction Index (CSI) include the following stages: (1) Determining the Mean Importance Score (MIS) and Mean Satisfaction Score (MSS). (2) Calculating Weight Factor (WF). (3) Calculating the Weight Score (WS). (4) Calculating the Customer Satisfaction Index (CSI). The Importance Performance Analysis (IPA) method is an application technique to manage attributes from the level of importance to the level of implementation [2]. The assessment of each attribute that will be the subject of questions is as follows:

- 1) Score 5 (very important)
- 2) Score 4 (important)
- 3) Score 3 (quite important)
- 4) Score 2 (less important)
- 5) Score 1 (not important)

Table 1. Attribute assessment

Level of importance		Satisfaction level	
Interval	Criteria	Interval	Criteria
1.00 – 1.79	not important	1.00 – 1.79	not satisfied
1.80 – 2.59	less important	1.80 – 2.59	less satisfied
2.60 – 3.39	quite important	2.60 – 3.39	quite satisfied
3.40 – 4.19	important	3.40 – 4.19	satisfied

4.20 – 5.00	very important	4.20 – 5.00	very satisfied
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Each attribute is positioned into the diagram, the horizontal axis (X) is filled with the average value of the i-th attribute performance level, and the vertical axis (Y) is filled with the average value of the i-th attribute importance, with the Importance Performance formula Analysis from Rangkuti (2006) [3] which is described and divided into four quadrants into a Cartesian diagram.

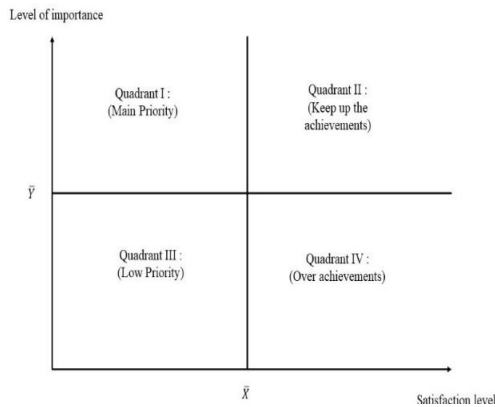


Fig. 1. Matriks importance performance Source: Rangkuti, 2006

### III. RESULTS AND DISCUSSION

#### A. Validity test results

The validity test was conducted to determine the validity or suitability of the attributes used in this study. Measurement of validity test is done by measuring the significance value of the variables or attributes used. If the significance value of the attribute used is greater than 0.30, it indicates that the attribute used is valid. Based on the results of the validity test, it shows that each attribute is valid, and can be used to conduct research or test research hypotheses. This is because the attribute significance value is greater than 0.30 [4]. The data from the validity test results can be seen in Table 2.

Table 2. Validity test results

No.	Partnership Attribute	Level of importance of Citronella partnership			Satisfaction level of Citronella partnership			Result
1	The quality of the seeds provided	0.623	0.741	0.580	0.512	0.654	0.648	Valid
2	Leasing of production facilities	0.594	0.694	0.536	0.699	0.607	0.581	Valid
3	Cultivation fee assistance	0.567	0.681	0.594	0.669	0.620	0.643	Valid
4	The quality of the fertilizer provided	0.718	0.632	0.660	0.633	0.634	0.626	Valid
5	Respond to all complaints	0.605	0.653	0.694	0.704	0.493	0.635	Valid
6	Honesty from the core	0.560	0.608	0.634	0.671	0.553	0.583	Valid
7	Communication built	0.733	0.600	0.729	0.623	0.741	0.580	Valid
8	Timeliness of working costs	0.596	0.546	0.662	0.377	0.695	0.708	Valid
9	Mapping of garden area	0.623	0.724	0.667	0.495	0.682	0.645	Valid
10	Frequency of technical guidance	0.700	0.502	0.601	0.679	0.718	0.575	Valid
11	Payment system from the core	0.579	0.633	0.604	0.513	0.667	0.699	Valid
12	Yield information	0.638	0.558	0.649	0.527	0.707	0.669	Valid
13	Determination of the quality of citronella	0.562	0.662	0.595	0.563	0.674	0.652	Valid

14	Help with harvesting and transportation costs	0.749	0.590	0.647	0.683	0.712	0.697	Valid
15	Harvest payment time	0.595	0.650	0.588	0.457	0.722	0.688	Valid
16	Determination of the selling price of the product	0.583	0.695	0.591	0.712	0.548	0.653	Valid
17	Determination of the contents of the cooperation contract	0.743	0.460	0.599	0.685	0.462	0.645	Valid
18	Matching the output price in the market	0.553	0.583	0.676	0.591	0.692	0.727	Valid
19	Giving bonus	0.643	0.672	0.510	0.689	0.507	0.739	Valid
20	Compensation	0.677	0.511	0.711	0.619	0.516	0.686	Valid

Source: Primary data, 2022

Table 2 shows that the results of the validity test of all partnership variables at the level of satisfaction of the Seraiwangi farmer group on the partnership attributes and the level of interest of the partnership are said to be valid because the corrected item-total correlation value of each variable is above the significant value in the table r product moment, which is more than 0.30.

#### B. Reliabilities test results

Reliability test can be done through Cronbach's alpha value, namely if it is greater than 0.60 then the variable is reliable [5]. The results of the reliable test can be seen in Table 3.

Table 3. Reliabilities test results

No.	Partnership Attribute	Cronbach level of importance of Citronella partnership	Cronbach satisfaction level of Citronella partnership	Result
1	The quality of the seeds provided	0.466	0.561	Reliable
2	Leasing of production facilities	0.529	0.482	Reliable
3	Cultivation fee assistance	0.548	0.478	Reliable
4	The quality of the fertilizer provided	0.528	0.607	Reliable
5	Respond to all complaints	0.485	0.569	Reliable
6	Honesty from the core	0.460	0.461	Reliable
7	Communication built	0.561	0.624	Reliable
8	Timeliness of working costs	0.454	0.467	Reliable
9	Mapping of garden area	0.485	0.609	Reliable
10	Frequency of technical guidance	0.577	0.471	Reliable
11	Payment system from the core	0.521	0.473	Reliable
12	Yield information	0.540	0.485	Reliable
13	Determination of the quality of citronella	0.526	0.472	Reliable
14	Help with harvesting and transportation costs	0.653	0.577	Reliable
15	Harvest payment time	0.515	0.486	Reliable
16	Determination of the selling price of the product	0.547	0.508	Reliable
17	Determination of the contents of the cooperation contract	0.465	0.480	Reliable
18	Matching the output price in the market	0.609	0.462	Reliable
19	Giving bonus	0.560	0.485	Reliable
20	Compensation	0.495	0.538	Reliable

Source: Primary data, 2022

Based on table 3, the value of Cronbach's alpha on all variables is greater than t-table which is more than 0.60, meaning the satisfaction level of the Citronella farmer group on the performance of the partnership and the level of importance of the partnership can be said that all the variables in this study are reliable.

#### C. Result of customer satisfaction index (CSI) analysis

Customer satisfaction index (CSI) is a method that uses an index to measure the level of customer satisfaction based on certain attributes. If the attributes of the partnership carried out by the partner (PT Dewara Nusa Jaya) are as expected by the respondent, the respondent will feel very satisfied, but if the opposite is not in accordance with what is expected, the respondent will feel disappointed and dissatisfied with the services provided. partner. As a comparison on the level of satisfaction of respondents, it is necessary to analyze the satisfaction of farmer groups on the performance of partners (PT Dewara Nusa Jaya), namely the CSI value obtained from the total weight score divided by the maximum scale multiplied by 100%. The consumer satisfaction index on the performance of the instructor can be seen in table 4.

Table 4. Calculation of customer satisfaction index (CSI)

No.	Partnership Attribute	Mean Importance Score (MIS)	Mean Satisfaction Score (MSS)	Weight Factors (WF)	Weight Score (WS)
1	The quality of the seeds provided	10.56	10.25	3.86	18.36
2	Leasing of production facilities	12.06	10.64	4.52	21.58
3	Cultivation fee assistance	11.21	8.63	4.15	16.51
4	The quality of the fertilizer provided	10.21	7.90	3.71	13.88
5	Respond to all complaints	9.40	8.03	3.36	13.48
6	Honesty from the core	8.75	8.70	3.07	13.97
7	Communication built	10.25	10.48	3.73	17.92
8	Timeliness of working costs	10.50	10.25	3.84	16.95
9	Mapping of garden area	8.21	7.90	2.84	11.35
10	Frequency of technical guidance	8.24	8.06	2.86	12.42
11	Payment system from the core	10.15	10.15	3.68	17.38
12	Yield information	9.96	9.88	3.60	16.74
13	Determination of the quality of citronella	9.89	9.86	3.56	16.79
14	Help with harvesting and transportation costs	10.29	10.45	3.75	0.14
15	Harvest payment time	6.55	10.21	3.43	16.81
16	Determination of the selling price of the product	10.18	10.23	3.69	17.32
17	Determination of the contents of the cooperation contract	10.05	3.66	3.66	16.90
18	Matching the output price in the market	9.91	8.86	2.12	9.82
19	Giving bonus	8.83	8.91	3.11	13.71
20	Compensation	9.28	9.08	3.31	14.86
Total		194.48	Weight Score Total (WST)		296.89
CSI : Weight Score Total : 5) x 100%		59.38			

Based on table 4, it can be seen that farmers' satisfaction with the attributes of the Seraiwangi partnership through the average value of the mean satisfaction score (MSS) owned by each attribute. The attributes of Leasing of production facilities, Communication built, The quality of the seeds provided, and Timeliness of working costs have the highest MSS values, meaning that farmers are very satisfied with these attributes. The lowest Mean Satisfaction Score (MSS) is owned by the attributes Determination of the contents of the cooperation contract, The quality of the fertilizer provided, and Mapping of garden area attribute visits on time, respondents think that these attributes have not been carried out as expected.

D. The results of the important performance analysis (IPA)

Analysis of the level of importance and the level of performance of partnership attributes using the Important Performance Analysis (IPA) method. IPA is used to measure the extent to which the performance of the partnership attributes given by PT Dewara Nusa Jaya to the lemongrass farmer group affects farmers' expectations, so that farmers are satisfied with the partner's performance. The following is the average value of the level of importance and performance of PT Dewara Nusa Jaya can be seen in Table 5.

Table 5. Calculation of the average value of interest on the attributes of a partnership

No.	Partnership Attribute	Level of importance of Citronella partnership (Y)	Performance of Citronella partnership (X)
1	The quality of the seeds provided	4.40	3.93
2	Leasing of production facilities	4.33	3.58
3	Cultivation fee assistance	4.43	2.73
4	The quality of the fertilizer provided	4.38	3.20
5	Respond to all complaints	4.33	2.50
6	Honesty from the core	4.68	2.85
7	Communication built	4.50	2.73
8	Timeliness of working costs	4.43	2.90
9	Mapping of garden area	4.30	3.20
10	Frequency of technical guidance	4.28	3.05
11	Payment system from the core	4.45	3.25
12	Yield information	3.90	2.80
13	Determination of the quality of citronella	4.15	3.65
14	Help with harvesting and transportation costs	4.48	3.23
15	Harvest payment time	4.60	3.08
16	Determination of the selling price of the product	4.43	2.83
17	Determination of the contents of the cooperation contract	4.35	3.18
18	Matching the output price in the market	4.40	2.60
19	Giving bonus	4.38	2.55
20	Compensation	4.40	2.33
Average total		4.38	3.01

Source: Primary data, 2022

Based on table 5, it shows that the average value of farmers' interests is greater than the level of performance of PT Dewara Nusa Jaya, which means that farmers really hope for the role of PT Dewara Nusa Jaya in improving the welfare of lemongrass farmers through a partnership scheme from PT Dewara Nusa Jaya both economic and non-economic.

PT Dewara Nusa Jaya's efforts to improve performance through participating in technical trainings or guidance regularly or periodically [6]. The IPA value is applied to get the more important attributes. The Cartesian diagram itself is divided into four quadrants with a dividing center line based on the total value of the average level of importance (Y) which is 4.38 and the average value of the level of performance (X) is 3.01. Based on Figure 2, it can be seen that each partnership attribute occupies a position according to its respective quadrant.

Quadrant I : Main priority

Attributes in quadrant I are considered very important by farmers, while the level of implementation is not satisfactory. Attribute in quadrant I and efforts that can increase farmer satisfaction are the attributes of Cultivation fee assistance, Honesty from the core, Communication built, Timeliness of working costs, Determination of the selling price of the product, Matching the output price in the market, and Compensation are in Quadrant I of this attribute is important for farmers, some of the items in this attribute need to be improved, such as Compensation and Matching the output price in the market.

#### Quadrant II : Keep up the achievements

Attributes in quadrant II need to be maintained because the level of implementation is in accordance with the interests and expectations of farmers so as to provide farmer satisfaction. The results of the analysis show that the attributes of The quality of the seeds provided, Determination of the quality of citronella, Help with harvesting and transportation costs, Harvest payment time, and Payment system from the core PT Dewara Nusa Jaya are good in the eyes of farmers.

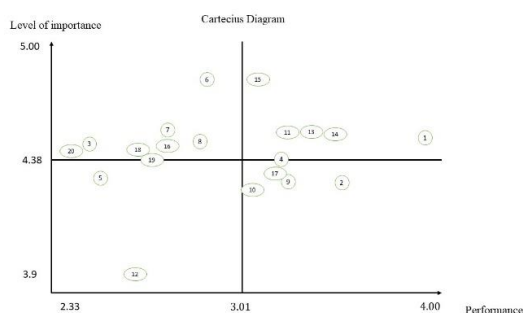
#### Quadrant III : Low priority

Attributes in quadrant III are still considered important for farmers in providing satisfaction, while the quality of their implementation is average or sufficient. The quality of partnership attributes can be measured how far the effectiveness between the gap and the expectations given [7]. The results of the analysis show that Respond to all complaints and Yield information should be considered again by partners (PT Dewara Nusa Jaya) because respondents think that PT Dewara Nusa Jaya has not responded to all complaints and yield information properly as desired by farmers.

#### Quadrant IV : Over achievements

Attributes in quadrant IV are considered excessive in their implementation because farmers think they are not too good important to the existence of these attributes, but the implementation is done very well by the partner (PT Dewara Nusa Jaya). The attributes included in this quadrant are Leasing of production facilities, Mapping of garden area, Frequency of technical guidance, and Determination of the contents of the cooperation contract.

Fig. 2. Cartecius quadran  
Source: Primary data, 2022



## IV. CONCLUSION

The conclusion obtained is that the level of satisfaction of farmer's group on the performance of the partnership is classified as satisfied with Customer Satisfaction Index (CSI) was 59.38 percent (0.5938). Important Performance Analysis (IPA) value shows an importance level value of 4.68 and a performance level value of 3.93 which means the importance level attribute is greater than the performance level attribute so that the partner's performance level (PT Dewara Nusa Jaya) has not met the expectations desired by the Citronella farmer group. The suggestion is that PT Dewara Nusa Jaya maintains and continues to improve its performance so that the Citronella farmer group is more advanced and becomes an outstanding farmer group.

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