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Analysis of Farmers' Satisfaction Level with the Performance of Agricultural Extension Agents (Case Study of Rantau Kasai Village, North Tambusai Subdistrict, Rokan Hulu Regency, Riau Province)

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ABSTRACT

Extension is a form of effort to educate and improve the lives of Indonesian citizens. In particular, the performance of agricultural extension agents is a measurement of the success of agricultural extension activities. This is certainly inseparable from the quality of human resources that available in supporting the implementation of agricultural extension activities. Rantau Kasai Village is one of the villages located in North Tambusai Subdistrict, Rokan Hulu Regency, Riau Province, which based on data from the Agricultural Extension Agency has seven farmer groups and the majority of the population are farmers. Agricultural extension in Rantau Kasai Village has been carried out, but the level of farmers' satisfaction with the performance of extension agents needs to be deeply investigated. This research was conducted using the survey method. Sampling using the Slovin technique obtained a sample size of 84 respondents from 174 farmers. The results showed that the level of conformity shows the highest level (100%), namely at the attribute of extension agents' understanding to the specific needs of farmers and their groups. The results of Importance Performance Analysis (IPA) reveal that quadrant III (Low Priority) is the dominant quadrant containing 12 attributes of agricultural extension agents' performance. The result of the Customer Satisfaction Index (CSI) analysis shows a value of 81.19% or 0.8119, which is classified into the "very satisfied" category, meaning the farmers are very satisfied with the performance of agricultural extension agents.

1. Introduction

Extension is a form of effort to educate and improve the lives of Indonesian citizens. In particular, agricultural extension aims to change and improve the knowledge, skills, attitudes, and motivation of the main actors, namely farmers, in terms of their behavior and economy (Ministry, 2009). Government services that aim to provide education, training, and activities that benefit farmers are known as agricultural extension (Hidayat et al., 2017). The success benchmark of this activity is largely determined by the performance of agricultural extension agents. Therefore, it is certainly determined by the quality of human resources that availaible in supporting the implementation of agricultural extension activities.

The performance standards of agricultural extension agents as implementers of their duties and obligations are regulated in Law No. 16/2006 regarding the function posts of village extension agents. According to Jailani (2012), there are three aspects of assessing the performance of an agricultural extension agent, namely the quantity and quality produced, the disciplinary behavior of a extension agent, and the cooperation between extension agents and farmer groups. Exploring potential, solving agricultural problems effectively, and facilitating access to market information, technology, capital, and other resources are expected to be achieved by providing recommendations to farmer groups. Providing informal education to farmers and their families plays an important role in revitalizing agricultural development through the provision of advice in the form of extension.

The performance and responsibilities of an agricultural extension agent are related to the process of delivering agricultural knowledge to farmers. Performance is the work achievement conducted by extension agents in terms of quality and quantity based on their responsibilities. According to Mangkunegara (2000) in Sari (2017), Field Agricultural Extension Agents (*Penyuluh Pertanian Lapangan*/PPL) who are expected to be able to bring fundamental changes in agriculture, especially in supporting agricultural activities, in fact have not yet run optimally as expected. PPLs often face various challenges and obstacles, ranging from work productivity problems to problems in their personal lives. These problems not only interfere with task performance, but also affect the effectiveness of PPLs when conducting routine tasks in the field (Khalida, 2009).

In addition to the above cases, in carrying out their duties in the field, PPLs are often faced with the characteristics of local residents regarding the findings they report. Some local residents welcome the changes, but there are also some others who oppose the changes. This certainly shows the dynamics of the extension agents' struggle in their efforts to serve and foster farmer groups to achieve farmers' satisfaction.

Rantau Kasai Village is one of the villages in North Tambusai Subdistrict, Rokan Hulu Regency, Riau Province, with an area of 480.55 km^2, which based on data from BPP (Agricultural Extension Agency, 2022), this village has seven farmer groups. The majority of the area of Rantau Kasai Village consists of flat hilly terrain. This makes the land suitable for agriculture and plantations. Therefore, the majority of the residents in this village work as farmers (Rantau Kasai Village, 2022).

Rantau Kasai Village is one of the villages where the majority of the residents work as farmers and has seven farmer groups. Therefore, in order for the farmers to achieve maximum satisfaction from the extension activities provided by the agricultural extension agents, more professional

attention and services from the agricultural extension agents are required. An agricultural extension agent is put at the forefront of increasing agricultural production, and contributing to enable farmers to improve their standard of living.

Based on this background statement, it appears that an agricultural extension agent has policies and work guidelines in carrying out his duties. Therefore, the author is interested in conducting research entitled "Analysis of Farmers' Satisfaction Level with the Performance of Agricultural Extension Agents in Rantau Kasai Village".

2. Methods

This research was conducted from January to April 2022 in Rantau Kasai Village, North Tambusai District, Rokan Hulu Regency. Determination of the research location was carried out by purposive method. The purpose of choosing this location was because the majority of the population works as farmers, besides that Rantau Kasai Village is a village that has a farmer groups (*gapoktani*) with the largest number of members compared to other villages. The number of farmers in Rantau Kasai Village is 174 people who are members of seven farmer groups. Data sampling employed the Slovin technique using the following formula:

$$n = \frac{N}{N.d^2+1} \quad (1)$$

where:
n = sample
N = population
d = precision value

The data in this study were obtained through observation, interviews, and documentation. The types and sources of data used were primary data and secondary data. Primary data were collected through interviews using questionnaires between sample farmers and extension agents, while secondary data were obtained from agencies related to this study, such as the North Tambusai District Extension Office and the North Tambusai Village Head's office.

The analysis method used to measure the attitudes, opinions, and perceptions of individuals or groups in the questionnaire was an instrument known as Likert scale with a scale of 1 to 5, namely strongly agree (5), agree (4), agree (3), disagree (2), and strongly disagree (1). The data obtained were then analyzed descriptively using Importance and Performance Analysis (IPA) to determine the conformity level between the degree of importance and the degree of effectiveness of the performance attributes of agricultural extension agents, which was determined using the following formula:

$$Tki = \frac{Xi}{Yi} \times 100\% \quad (2)$$

where:
Tki = Conformity level of extension agents
Xi = Assessment score of performance level
Yi = Assessment score of importance level

After obtaining the attribute of conformity level, the average value of each attribute was displayed in a cartesian diagram. The horizontal axis (x) is the rating of performance level and the vertical axis (y) is the rating of importance level. The average score of the x and y axes on the cartesian diagram was calculated using the following formula:

$$\overline{X} = \frac{\sum x_i}{n} \quad \text{.....(3)}$$

$$\overline{Y} = \frac{\sum y_i}{n} \quad \text{.....(4)}$$

where:
$\overline{Y}$ = Average score of importance
$\overline{X}$ = Average score of performance
n = Number of respondents

A cartesian diagram consists of four quadrants bounded by two straight lines that intersect at the coordinate points (X, Y) perpendicularly. The X score is the average score of the performance level for all attributes, and the Y score is the average score of the four levels of importance for all attributes. The coordinate point (X, Y) was determined using the following formula:

$$Y = \frac{\sum_{i=1}^{n} \overline{Y}}{K} \quad \text{.....(5)}$$

$$X = \frac{\sum_{i=1}^{n} \overline{X}}{K} \quad \text{.....(6)}$$

where:

$\overline{Y}$ = Average score of importance
$\overline{X}$ = Average score of performance
K = Number of satisfaction attributes

The average score of importance (Y) and performance (X) level for all attributes were used to construct a cartesian diagram of the attributes that influence and satisfy the farmers, where the correct high value of the certain attribute is indeed considered important. To measure the importance and performance level of attributes on the cartesian diagram, the importance level is divided into four quadrants based on the measurement results using the IPA (Importance Performance Analysis) method.

Y (Importance Level)	Quadrant I	Quadrant II
	Quadrant III	Quadrant IV

X (Performance Level)

Figure 1. Cartesian diagram of importance and performance level.

Description of each quadrant:
I : Top Priority: high expectation level but low implementation level
II : Maintain the Achievement: the attributes implemented are in accordance with the farmers'

expectations

III : Low Priority: both the importance and the performance level are relatively low or not in line with the farmers' expectations

IV : Excessive: the importance level is low compared to the performance level

The identification of farmers' satisfaction with the performance of agricultural extension agents was conducted using a descriptive analysis known as Customer Satisfaction Index (CSI). According to Stramford in Joni (2009), the CSI method comprises the following calculations:

1. Calculating the Mean Importance Score (MIS) and Mean Satisfaction Score (MSS)

$$MIS = \frac{\sum_{i=1}^{n} Y_i}{n} \quad \text{.....(7)}$$

$$MSS = \frac{\sum_{i=1}^{n} X_i}{n} \quad \text{.....(8)}$$

where:
n = number of respondents
Y_i = i - th Y importance value
X_i = i - th X performance value

2. Calulating Weight Factor (WF), which is the percentage weight of the MIS value per attribute to the total MIS of all attributes.

$$WF = \frac{MIS_i}{\sum_{i=1}^{P} MIS_i} \times 100\% \quad \text{.....(9)}$$

where:

P = p - th importance attribute
i = i - th performance quality attribute
MIS_i = importance's average score of the i - th attribute

3. Calculating Weight Score (WS), which is the multiplication of WF with the average level of satisfaction (MSS).

$$WS = WF \times MSS \quad \text{.....(10)}$$

4. Calculating Customer Satisfaction Index (CSI), which is the WS value divided by the maximum scale or Highest Scale (HS), then multiplied with 100%.

$$CSI = \frac{WS}{HS} \times 100\%$$

where:

WS = Weighted score
HS = Highest scale

The overall satisfaction of respondents is determined from criteria of the farmers'satisfaction level as follows:

Table 1. Criteria of farmers' satisfaction level.

No.	Kriteria	Kategori
1.	0 < Satisfaction index	Not satisfied
2.	0.2 < Satisfaction index	Less satisfied
3.	0.4 < Satisfaction index	Quite satisfied
4.	0.6 < Satisfaction index	Satisfied
5.	0.8 < Satisfaction index	Very satisfied

3. Results and discussion

3.1 Geography dan topography

Rantau Kasai Village is one of the villages in North Tambusai Subdistrict, Rokan Hulu Regency, comprises an area of 60,000 ha with flat hilly terrain, tropical climate with an average temperature of 26–33ºC during the day and 20–22ºC at night, rainfall 200-270 mm/month, has a population of 3,204 families and 13,027 people.

Rantau Kasai Village is located on Sultan Abidinsyah Street, North Tambusai Subdistrict, Rokan Hulu Regency, Riau Province, zip code 28558. It is bordered to the north by North Padang Lawas Regency; to the south by East Tambusai Village; to the west by Batang Kumu, Payung Sekaki, Bangun Jaya, and Mekar Jaya Villages; and to the east by Rokan Hilir Regency, Mahato Village, and Mahato Sakti Village. Rantau Kasai Village is divided into 6 hamlets, 8 neighborhood association (*RT*), and 20 citizens association (*RW*) that are scattered around the village as an extension of the government.

3.2 Characteristics of respondents

Respondents in this study were farmers who work in farm businesses or farmer groups. Based on the 84 farmers who were selected as sample for data collection, the characteristics of the respondents are displayed as follows:

Table 2. Total and percentage by respondent characteristics.

No.	Characteristics	Category	Total	Percentage (%)
1.	Age	17–32	6	8
		33–42	48	57
		43–62	30	35
2.	Education	Elementary school	8	9.5
		Junior high school	13	15.5
		High school	49	58.3
		University	14	16.7

Source: Primary data (processed), 2022

Based on Table 2, it is known that the highest age range of farmers are 33 to 42 years old as many as 48 people with a percentage of 57%, the second range are 43 to 62 years old as many as 30 people with a percentage of 35%, and the lowest range are 17 to 32 years old as many as 6 people with a

percentage of 8%. In the education category, the highest farmer group members are high school graduates as many as 49 people with a percentage of 58.3%, university graduates as many as 14 people with a percentage of 16.7%, junior high school graduates as many as 13 people with a percentage of 15.5%, and the lowest order is elementary school graduates as many as 8 people with a percentage of 9.5%.

3.3 Conformity level of service attributes of the performance of agricultural extension agents in Rantau Kasai Village

The conformity level of the performance of agricultural extension agents is the comparison of the overall percentage of performance with the overall importance of the performance attributes of agricultural extension agents. The conformity level is determined by comparing the satisfaction level (the reality received by farmers) with the importance level (farmers' expectations) of the work of extension agents in Rantau Kasai Village. Analysis of the following 33 attributes can be used to determine the priority order of attributes that influence the farmers' satisfaction.

Table 3. The conformity level of service attributes of the performance of agricultural extension agents in Rantau Kasai Village.

Capabilities		Attributes	Weight of Performance Level (X)	Weight of Importance Level (Y)	Conformity Level
Responsive-ness	A1	Extension agents are punctual in visiting farmers	321	369	86.99
	A2	Extension agents are willing to help farmers if needed	318	341	93.26
	A3	Extension agents are ready and responsive when farmers want to meet them	323	348	92.82
	A4	Extension agents are responsive to various information regarding farming business opportunities	293	343	85.42
	A5	Extension agents are responsive to various institutions that want to cooperate and benefit farmers	310	322	96.27
	A6	Extension agents are responsive to the research's results conducted by research institutions and universities	292	333	87.69

	A7	Extension agents are responsive to the problems faced by farmers	307	352	87.22
Reliability	B1	Timeliness of extension agents in fulfilling their promises	309	357	86.55
	B2	The sincerity of extension agents in providing training or extension materials	312	337	92.58
	B3	Conformity between the types of training conducted and the farmers' needs	302	335	90.15
	B4	Extension agents' ability to use tools needed by farmers	293	309	94.82
	B5	Conformity between the material provided and the farmers' needs	297	323	91.95
	B6	Appropriateness of solutions provided in overcoming farming problems	309	322	95.96
Confidence	C1	Extension agents' behavior gain the farmers' trust	329	355	92.68
	C2	Extension training/materials are useful for farmers	343	363	94.49
	C3	Polite attitude of extension agents towards farmers	288	312	92.31
	C4	Extension agents' knowledge and ability to answer the farmers' questions	287	324	88.58
	C5	Extension activities provide benefits for farming business development	336	363	92.56
	C6	Extension agents' ability to appropriately address the problems faced by farmers	325	352	92.33
	C7	Extension agents can set an example by providing demonstration plots	304	331	91.84
Empathy	D1	Extension agents' attention to farmers' individual needs	317	347	91.35
	D2	Extension agents' ability to provide training to farmers	299	345	86.67
	D3	Fit and comfort during mentoring	275	291	94.50

	D4	The sincerity of extension agency in paying attention to the interests of farmer groups in obtaining business capital	332	341	97.36
	D5	The sincerity of extension agents in helping farmers market their agricultural products	307	351	87.46
	D6	The sincerity of extension agency in paying attention to the interests of farmer groups to market their agricultural products	304	330	92.12
	D7	The sincerity of extension agents in helping to find entrepreneurs who want to help farmers	296	321	92.21
	D8	Extension agents' understanding of the specific needs of farmers and their groups	308	308	100.00
Physical Ability	E1	The neatness of the extension agents' appearance in providing training and extension materials	304	351	86.61
	E2	Appropriateness of technology and information media during extension	304	307	99.02
	E3	Completeness of technology and information media during extension	257	296	86.82
	E4	Extension agents' ability to use technology and information media in providing extension materials	310	349	88.83
	E5	Extension agents' ability to use technology and information media in providing materials	314	333	94.29
		Average			**91.63**

Based on Table 3, it can be seen that the conformity level that results in a highest value of 100% is found in attribute D8, namely the extension agents' understanding of the specific needs of farmers

and their groups. This attribute is indeed considered very important according to the farmers in Rantau Kasai Village. This means when extension agents are able to understand what the specific needs of farmers and their groups are, the results will be more effective, considering that extension agents will definitely be able to provide better detailed and in-depth soultions of what is being needed by farmers and their groups, and that is also what the farmers really expect.

Meanwhile, the lowest conformity level (85.42%) is resulted by attribute A4, namely extension agents are responsive to various information regarding farming business opportunities. This result indicates that the extension agents' performance on this attribute does not meet the farmers' expectations. Thus, attribute A4 is considered a major performance concern in order to be improved and enhanced in the future. Overall, the conformity between the degree of importance and performance reveals an average value of 91.63%. This means that the average percentage of all attributes is classified into the "very conform" category. In other words, the level of fulfillment is considered "very conform" according to the farmers' expectations. According to Sukardi and Chandrawatisma (2006), the conformity value above the average or close to 100% can be considered a good level of conformity. Based on the conformity criteria, the conformity level category between the degree of importance and the resulting level of effectiveness is shown in Table 4.

Table 4. Categories of conformity level.

Conformity Level	Conformity Range (%)
Very conform	80–100
Conform	70–79
Quite conform	60–69
Less conform	50–59
Not conform	40–49

Source: Indrawinangsih and Sudaryanto (2007)

3.4 Importance and performance position on Importance Performance Analysis (IPA)

The instrument to measure the importance and quality of agricultural extension in Rantau Kasai Village is Importance Performance Analysis (IPA). Performance analysis was used to measure the attributes to the extent of which the performance of agricultural extension agents related to the services they provide in Rantau Kasai Village can meet the farmers' expectations so as to yields maximum farmers' satisfaction with extension agents' performance. The results of the calculation of the average value of importance and field performance in Rantau Kasai Village are shown in Table 5.

Table 5. Results of Importance Performance Analysis (IPA) calculation.

Capabilities		Attributes	Performance Level (X)	Importance Level (Y)
Responsive-ness	A1	Extension agents are punctual in visiting farmers	4	4.4
	A2	Extension agents are willing to help farmers if needed	3.8	4.1

	A3	Extension agents are ready and responsive when farmers want to meet them	3.8	4.1
	A4	Extension agents are responsive to various information regarding farming business opportunities	3.7	4.3
	A5	Extension agents are responsive to various institutions that want to cooperate and benefit farmers	3.7	3.8
	A6	Extension agents are responsive to the research's results conducted by research institutions and universities	3.7	4
	A7	Extension agents are responsive to the problems faced by farmers	3.7	4.2
Reliability	B1	Timeliness of extension agents in fulfilling their promises	3.7	4.3
	B2	The sincerity of extension agents in providing training/extension materials	3.7	4
	B3	Conformity between the type of training conducted and the farmers' needs	3.6	4
	B4	Extension agents' ability to use tools needed by farmers	3.6	3.8
	B5	Conformity between the material provided and the farmers' needs	3.5	3.8
	B6	Appropriateness of solutions provided in overcoming farming problems	3.8	3.8
Confidence	C1	Extension agents' behavior gain the farmers' trust	3.9	4.2
	C2	Extension training/materials are useful for farmers	4.1	4.3
	C3	Polite attitude of extension agents towards farmers	3.9	4.2
	C4	Extension agents' knowledge and ability to answer the farmers' questions	3.5	3.9
	C5	Extension activities provide benefits for farming business development	4	4.3
	C6	Extension agents' ability to appropriately address the problems faced by farmers	3.9	4.2
	C7	Extension agents can set an example by providing demonstration plots	3.7	4
Empathy	D1	Extension agents' attention to farmers' individual needs	3.8	4.1

	D2	Extension agents' ability to provide training to farmers	3.7	4.1
	D3	Fit and comfort during mentoring	3.5	3.8
	D4	The sincerity of extension agency in paying attention to the interests of farmer groups in obtaining business capital	4	4.1
	D5	The sincerity of extension agents in helping farmers market their agricultural products	3.7	4.2
	D6	The sincerity of the extension agency in paying attention to the interests of farmer groups to market their agricultural products	3.6	3.9
	D7	The sincerity of extension agents in helping to find entrepreneurs who want to help farmers	3.5	3.8
	D8	Extension agents' understanding of the specific needs of farmers and their groups	3.7	3.8
Physical Ability	E1	The neatness of the extension agents' appearance in providing training and extension materials	3.6	4.2
	E2	Appropriateness of technology and information media during extension	3.8	4
	E3	Completeness of technology and information media during extension	3.7	4.1
	E4	Extension agents' ability to use technology and information media in providing extension materials	3.8	4.2
	E5	Extension agents' ability to use technology and information media in providing materials	3.7	4
		Average	**3.7**	**4.06**

Source: Primary data (processed), 2022

The average performance level for each attribute is the basis for determining how good the quality of service provided by agricultural extension agents in Rantau Kasai Village for each attribute. To do this, the average performance value of each attribute (X) was compared. The average importance level of an attribute is the basis for determining the importance level of an attribute, namely the comparison of the average importance score of each attribute (Y). The average calculation of all performance level attributes (X) reveals a value of 3.7, while the average calculation of all importance level (Y) reveals a value of 4.06. This value is used in the Importance

Performance Analysis (IPA) diagram to divide it into four quadrants, namely Quadrant I (Main Priority), Quadrant II (Maintain the Performance), Quadrant III (Low Priority), and Quadrant IV (Excessive).

Importance Performance Analysis (IPA) is a service analysis method for farmers that focuses on the match between the importance level and the performance level based on the performance characteristics of agricultural extension agents. The conformity point between the importance level and the performance level is depicted through the coordinates, which reveals the position of each attribute. The results are presented in a cartesian diagram as follows:

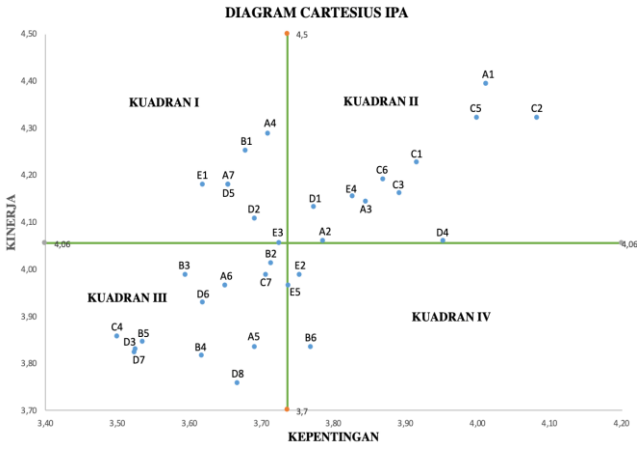

Figure 2. Cartesian diagram of Importance Performance Analysis

Each quadrant describes its own circumstance. This comparison is made based on the importance level and the performance level, allowing the extension agents to immediately improve the characteristics that are considered important by the farmers in Rantau Kasai Village. The results displayed in each quadrant can be interpreted more deeply as follows:

1. Quadrant I (Main Priority)

The top priority quadrant is a quadrant that contains attributes that are considered important by Rantau Kasai Village farmers, despite in reality, these attributes are not in accordance with the farmers' expectations. To improve performance in this quadrant, agricultural extension agents can take several steps. Quadrant I contains seven attributes as follows:

1. A4: Extension agents are responsive to various information regarding farming business opportunities
2. A7: Extension agents are responsive to the problems faced by farmers
3. B1: Timeliness of extension agents in fulfilling their promises
4. D2: Extension agents' ability to provide training to farmers
5. D5: Extension agents' sincerity in helping farmers market their agricultural products
6. E1: The neatness of extension agents' appearance in providing training/extensionmaterials
7. E3: Completeness of information and technology media during extension

Based on several attributes obtained in quadrant I, Rantau Kasai Village farmers consider all of these attributes are important, but in reality, the implementation of these attributes still has not met

the farmers' expectations. Thus, the performance on these attributes still need to be improved. Quadrant I reveals a number of attributes that influence farmers' satisfaction and are considered very important, but according to their expectations, the extension activities have not yet implemented these attributes appropriately.

2. Quadrant II (Maintain the Achievement)

Quadrant II is a quadrant that contains attributes that are considered important by farmers in Rantau Kasai Village, and the implementation of these attributes is in accordance with the expectations and feelings of the farmers. The implementation of the main elements indicated by the attributes of quadrant II needs to be supported because it is considered both very important and very satisfying.

All the qualities resulted in this quadrant must be maintained, because all of these qualities reflect the achievements of extension agents who are considered excellent according to the farmers of Rantau Kasai Village. The following 11 attributes are considered excellent by the farmers, thereby must be supported.

1. A1: Extension agents are punctual in visiting farmers
2. A2: Extension agents are willing to help farmers if needed
3. A3: Extension agents are ready and responsive when farmers want to meet them
4. C1: Extension agents' behavior gain the farmers' trust
5. C2: Extension training/materials are useful for farmers
6. C3: Polite attitude of extension agents towards farmers
7. C5: Extension activities provide benefits for farming business development
8. C6: Extension agents' ability to appropriately address problems faced by farmers
9. D1: Attention of extension agents to farmers' individual needs
10. D4: Sincerity of extension agencies in giving attention to the interests of farmer groupsin obtaining business capital
11. E4: Extension agents' ability to use technology and information media in providing extension materials

3. Quadrant III (Low Priority)

Quadrant III is a quadrant that contains attributes which qualities are considered low by the farmers in Rantau Kasai Village. This quadrant reveals a number of attributes that are less important according to the farmers, also their implementation by agricultural extension agents is considered mediocre, less significant, and unsatisfactory.

Increasing the quality of attributes in quadrant III can be reconsidered because the impact on the benefits expected by farmers in Rantau Kasai Village is still minor. Quadrant III contains the following 12 attributes:

1. A5: Extension agents are responsive to various organizations that want to cooperate and benefit farmers.
2. A6: Extension agents are responsive to the research results conducted by research institutions and universities.
3. B2: The sincerity of extension agents in providing training/extension materials
4. B3: Conformity between the types of training conducted and the farmers' needs
5. B4: Extension agents' ability to use tools that farmers need

6. B5: Conformity between the materials provided and the farmers' needs
7. C4: Extension agents' knowledge and ability to answer farmers' questions
8. C7: Extension agents can set an example by providing demonstration plots.
9. D3: Fit and comfort during mentoring
10. D6: The willingness of extension agencies to pay attention to the interests of farmer groups to market their agricultural products
11. D7: The sincerity of extension agents in finding entrepreneurs who are willing to help farmers
12. D8: Extension agents' understanding of the specific needs of farmers and their groups

4. Quadrant IV (Excessive)

Quadrant IV is a quadrant containing attributes that are considered less important by the farmers of Rantau Kasai Village. In fact, their implementation is not very good. This quadrant shows that the implementation of attributes that influence farmers' satisfaction is considered excessive and less important, despite on the other hand it is considered satisfactory.

Improving the quality of attributes in this quadrant can be reconsidered because the impact on the benefits expected by farmers in Rantau Kasai Village has proven to be insignificant. Quadrant IV contains the following three attributes:

1. B6: Appropriateness of solutions provided in overcoming farming problems.
2. E2: Appropriateness of technology and information media during extension.
3. E5: Extension agents' ability to use technology and information media in providing extension materials.

3.5 Customer Satisfaction Index (CSI) analysis

The Customer Satisfaction Index (CSI) is used to measure overall farmers' satisfaction in Rantau Kasai Village using an approach that considers the importance and performance level of 33 performance indicators of agricultural extension agents. The CSI score is directly proportional to the average score of importance and performance. This means an increase in the average score of importance and performance generates an increase in the CSI score (Aritonang, 2005). Table 6 presents the results of the Customer Satisfaction Index (CSI) analysis.

Table 6. Results of Customer Satisfaction Index (CSI) analysis.

No.	Attributes	Average of Importance Score (MIS)	Weighted Factor (WF)	Average of Performance Score (MSS)	Weighted Score (WS)
A1	Extension agents are punctual in visiting farmers	4.393	3.25	4.013	14.30
A2	Extension agents are willing to help farmers if needed	4.060	3.07	3.786	12.46
A3	Extension agents are ready and responsive when farmers want to meet them	4.143	3.12	3.845	12.92

A4	Extension agents are responsive to various information regarding farming business opportunities	4.288	3.01	3.709	12.90
A5	Extension agents are responsive to various institutions that want to cooperate and benefit farmers	3.833	2.99	3.690	11.47
A6	Extension agents are responsive to the research's results conducted by research institutions and universities	3.964	2.96	3.650	11.74
A7	Extension agents are responsive to the problems faced by farmers	4.179	2.96	3.655	12.39
B1	Timeliness of extension agents in fulfilling their promises	4.250	2.98	3.679	12.68
B2	The sincerity of extension agents in providing training/extension materials	4.012	3.01	3.714	12.09
B3	Conformity between the types of training conducted and the farmers' needs	3.988	2.92	3.595	11.63
B4	Extension agents' ability to use tools needed by farmers	3.815	2.93	3.617	11.19
B5	Conformity between the material provided and the farmers' needs	3.45	2.87	3.536	11.03
B6	Appropriateness of solutions provided in overcoming farming problems	3.833	3.06	3.768	11.72
C1	Extension agents' behavior gain the farmers' trust	4.226	3.18	3.917	13.43
C2	Extension training/materials are useful for farmers	4.321	3.31	4.083	14.31
C3	Polite attitude of extension agents towards farmers	4.160	3.16	3.892	13.13
C4	Extension agents' knowledge and ability to answer the farmers' questions	3.857	2.84	3.5	10.95
C5	Extension activities provide benefits for farming business development	4.321	3.24	4	14.02
C6	Extension agents' ability to appropriately address the problems faced by farmers	4.190	3.14	3.869	13.15
C7	Extension agents can set an example by providing	3.988	3.01	3.707	11.99

	demonstration plots				
D1	Extension agents' attention to farmers' individual needs	4.131	3.06	3.774	12.64
D2	Extension agents' ability to provide training to farmers	4.107	2.99	3.691	12.30
D3	Fit and comfort during mentoring	3.829	2.86	3.526	10.95
D4	The sincerity of extension agency in paying attention to the interests of farmer groups in obtaining business capital	4.060	3.21	3.952	13.01
D5	The sincerity of extension agents in helping farmers market their agricultural products	4.179	2.96	3.655	12.39
D6	The sincerity of the extension agency in paying attention to the interests of farmer groups to market their agricultural products	3.929	2.94	3.619	11.53
D7	The sincerity of extension agents in helping to find entrepreneurs who want to help farmers	3.821	2.86	3.524	10.92
D8	Extension agents' understanding of the specific needs of farmers and their groups	3.756	2.97	3.667	11.17
E1	The neatness of the extension agents' appearance in providing training and extension materials	4.179	2.94	3.619	12.27
E2	Appropriateness of technology and information media during extension	3.987	3.04	3.753	12.14
E3	Completeness of technology and information media during extension	4.055	3.02	3.725	12.25
E4	Extension agents' ability to use technology and information media in providing extension materials	4.155	3.10	3.827	12.90
E5	Extension agents' ability to use technology and information media in providing materials	3.964	3.03	3.738	12.02
	Total	123.29	100	133.82	405.96
	Customer Satisfaction Index (CSI)				**81.19**

Source: Primary data (processed), 2022

Based on Table 6, analysis of the farmers' satisfaction with the performance of agricultural

extension agents reveals a CSI score of 81.19% or 0.8119. Based on the Satifaction Index on customer satisfaction survey guide by PT Succofindo (Kartikawati, 2008), CSI value of 0.8 < Satisfaction index < 1 is included in the "very satisfied" category. Thus, it can be inferred that the farmers are very satisfied with the performance of agricultural extension agents. The range of CSI values from 0.81 to 1.00 is classified as very satisfied, indicating that the farmers' satisfaction with the performance of agricultural extension agents has increased in terms of farmers' activities, problem complaints, and the extension agents' ability to solve problems. This makes farmers satisfied with the performance of agricultural extension agents in terms of dissemination of agricultural knowledge. Nonetheless, the performance and productivity of agricultural extension agents still need to be improved and increased in order to achieve 100% farmers' satisfaction.

Meanwhile, agricultural extension agents should pay attention to the deviation results regarding the performance of agricultural extension agents that resulted from performance analysis using the Importance Performance Analysis (IPA) method. This is important for them in order to improve their performance in the future. Improved performance of the concerning attributes will increase Weighted Score (WS) and Customer Satisfaction Index (CSI). According to Diyahya et al. (2016), the more the performance quality of a service increases, the more farmers' satisfaction increases.

What should be considered in order for farmers to be satisfied is the farmers' expectations. The most important factors that influence farmers' expectations are farmers' needs, such as subsidy distribution. According to Vijayanti et al. (2015), the basic needs of farmers are factors that greatly influence farmers' expectations of agricultural extension activity. Farmers' satisfaction with the performance of agricultural extension agents will shape their loyalty to the implementation of agricultural extension activities. The more satisfied a farmer is with the services he receives, the more loyal he will be (Suwarman, 2011). Analysis of the Customer Satisfaction Index (CSI) shows that the level of farmers' satisfaction with the performance of agricultural extension agents is classified into the very satisfied category with a CSI value of 81.19%.

4. Conclusions and suggestions

4.1 Conclusions

Based on the discussion above, the following conclusions are drawn:

1. The conformity level that results in a highest value (100%) is attribute D8, namely the extension agents' understanding of the specific needs of farmers and their groups. This attribute is considered very important because when extension agents are able to understand what the specific needs of farmers and their groups are, the results will be more effective because the implementation is tailored to the specific needs of farmers and their groups.
2. Importance Performance Analysis (IPA) reveals the following results:
   a. Quadrant I (Top Priority) contains seven attributes. Attributes in this quadrant are considered important, but apparently still have not met the farmers' expectations. Therefore, improvement of the attributes in this quadrant is prioritized in order to achieve better performance and quality.
   b. Quadrant II (Maintain the Achievement) contains 11 attributes. The attributes resulted in this quadrant must be maintained because they reflect the excellent performance of agricultural extension agents according to the farmers' expectations.
   c. Quadrant III (Low Priority) contains 12 attributes. This quadrant contains the most

attributes. Agricultural extension agents are advised to continue to improve the quality of these attributes and review them because the expected benefits are minor. The attributes in this quadrant have less impact on farmers, and implementation by extension agents is considered mediocre. These attributes are considered less important and unsatisfactory.

d. Quadrant IV (Excessive) contains three attributes. This quadrant contains attributes that farmers consider less important and insignificant. The attributes contained in this quadrant can be revised due to its minor impact.

3. *Customer Satisfaction Index* (CSI) analysis results in a score of 81.19% or 0.8119, which is classified into the "very satisfied" category. This means the farmers are very satisfied with the performance of agricultural extension agents.

4.2 Suggestions

Based on the results of the study, the following things are suggested:

1. The performance of agricultural extension agents in quadrant I, namely the appropriateness of the solutions provided in overcoming farming problems, needs to be improved.
2. The creativity of extension agents in communicating with farmer groups to solve problems in farming needs to be improved, as well as the participation and activeness of extension agents inthe implementation of agricultural extension activities.
3. Farmer groups can cooperate with agricultural extension agents and participate in agricultural extension activities to increase knowledge in agriculture.
4. It is recommended for future research to further deepen similar topics in the hope of exploring further the level of farmers' satisfaction in agricultural extension.

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