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THE RELATIONSHIP BETWEEN PALM OIL FARMERS AND PALM OIL ENTREPRENEURS IN A SELF-HELP SCHEME IN PANTAI CERMIN VILLAGE, TAPUNG SUBDISTRICT, KAMPAR REGENCY

I Fajar Restuhadi[1], Yulia Andriani[2], Defri Aire Sujantara[3]

[12]Lecturer Department of Agribusiness, Faculty of Agriculture, Universitas of Riau., Riau, Indonesia
[3]Masterstudent Department of Agribusiness, Faculty of Agriculture, Universitas of Riau., Riau, Indonesia
Email Coressponding: f.restuhadi@lecturer.unri.ac.id

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Abstract

Independent palm oil smallholders cannot market fresh fruit bunches (FFB) directly to the mill. Various factors influence the marketing process of FFB. Tauke (middlemen or collectors) play a significant institutional role in the marketing of FFB for many independent smallholders. This study aims to (1) identify the characteristics of independent palm oil smallholders, (2) analyse smallholders' satisfaction with tauke performance and the importance of tauke attributes from the smallholders' perspective, and (3) examine the relationship between smallholder characteristics and their satisfaction with tauke attributes. A survey method was employed, and respondents were selected using purposive sampling, with a total sample of 88 smallholders. The findings reveal that the smallholders are predominantly of productive age, mostly senior high school graduates or equivalent, have 14–19 years of farming experience, manage land areas between 2.91 and 3.80 hectares, have 1–2 family dependents, exhibit a moderate to high level of cosmopolitanism, receive limited agricultural extension services, and access a relatively wide range of information sources. The level of satisfaction among smallholders is categorised as satisfied, and the attributes that need to be maintained are located in quadrant II of the importance-performance analysis. The relationships between smallholder characteristics and tauke performance are generally positive and significant, though with low correlation coefficients. An exception is found in the relationship between farming experience and the attribute of high pricing, which is negative and significant, albeit with a low correlation. Furthermore, smallholder characteristics are found to have a highly significant but weakly correlated positive relationship with the perceived importance of tauke attributes. Policymakers can better understand the consequences of research when it comes to bolstering agricultural supply chains. Without discounting the function of tauke or collecting dealers, the establishment of cooperative structures increases small farmers' negotiating power.

Keywords: Attributes of tauke , Characteristics, Policy, Satisfaction level, Smallholder

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INTRODUCTION

Palm oil is a strategic commodity that significantly contributes to the economic growth of Riau Province, with Kampar Regency accounting for approximately 955,735 tonnes of production in 2019 (BPS, 2020). A large portion of this production is managed by independent smallholders, cultivating around 226,085 hectares and relying heavily on tauke—middlemen who provide market access and capital. This relationship is largely informal, creating dependence and price asymmetries. Smallholders often act as price takers due to limited production capacity and lack of direct access to processing mills, a condition exacerbated by the inactivity of local cooperatives.

Research has highlighted the crucial role of intermediaries, or tauke, in supporting independent palm oil smallholders. A study by Nurjanah and Anggrasari (2023) revealed that marketing support, capital provision, and quality assurance are the key functions of tauke, based on smallholder perceptions. Raharja (2020) further emphasised the importance of institutional models in strengthening the bargaining position of independent smallholders. Reich et al. (2025) underscored that certification barriers limit market access and price predictability. Veriasa et al. (2024) demonstrated that RSPO certification enhances the productivity of smallholders through the strengthening of farmer groups in Riau. Suardi et al. (2022) identified that attributes such as market access and income generation are critical factors influencing the economic sustainability of smallholders. Fosch et al. (2023) pointed to socio-economic disparities between smallholders and the palm oil industry that perpetuate smallholder dependence on intermediaries.

The prevalence of informal rural institutions hampers smallholders' ability to become price makers. Martens (2020) reported that approximately 42% of Indonesian palm oil plantations are managed independently and face institutional constraints at the local level. Jelsma et al. (2017) differentiated between tied and independent farmer relationships, which influence capital access and bargaining power. Promudya et al. (2022) identified types of incentives necessary for supporting ISPO implementation among smallholders. However, research examining smallholder satisfaction with taukeperformance attributes and their relationship to smallholders' socio-economic characteristics remains limited. There has been no quantitative study applying the Importance-Performance Analysis (IPA) framework to map the attributes perceived as important and satisfactory in the smallholder–tauke relationship, particularly in micro-contexts such as Pantai Cermin Village.

The novelty of this study lies in the application of IPA to assess tauke performance from the smallholders' perspective and in linking these attributes with the characteristics of independent smallholders in areas with weak institutional structures. This research contributes to a deeper understanding of the dynamics between smallholders and tauke, offering a basis for institutional interventions that can improve marketing efficiency and strengthen smallholder bargaining power. Internally, the study has implications for refining smallholder group strategies; externally, its findings may inform policy efforts to reinforce institutional support and reduce smallholder dependency on intermediaries.

This study is based on two hypotheses: first, there is a relationship between smallholders' socio-economic characteristics and their satisfaction with tauke attributes; second, not all tauke attributes are perceived to have the same level of importance and satisfaction.

RESEACRH METHODS

The study was conducted in Pantai Cermin Village, Tapung Subdistrict, Kampar Regency. The location was selected based on several considerations: Pantai Cermin has extensive palm oil plantations, the majority of its residents sell their harvest to tauke (middlemen), and the village is located in close proximity to a palm oil mill (PKS). The research was carried out from January 2022 to November 2022.

This study employed a survey method using both primary and secondary data. The sampling technique applied was purposive sampling with the following criteria: smallholders with a minimum landholding of ≥ 2 hectares, practicing independent (non-nucleus) farming systems, consistently selling their harvest to the same tauke, and residing in Pantai Cermin Village. The sample size was determined using the Slovin formula (Pratiwi et al., 2018), resulting in a total of 88 smallholder respondents. The number of tauke involved in this study was six.

The data analysis methods employed in this study include:

1. Customer Satisfaction Index Analysis (CSI)

Customer Satisfaction Index (CSI) analysis is used to determine the overall level of satisfaction among farmers using an approach that reviews the level of importance of tauke attributes. This index is measured in four stages (Alfiansyah, 2021), namely by calculating:

a) Weighting Factors (WF)

Weighting factors are used to change the value of the average importance level or function of the Mean Importance Score (MIS) displayed as a percentage of the total average importance level for all indicators to be tested.

$$WF = \frac{MSi}{Total\ MSI} x100\%$$

***b) Weight Score* (WS)**

Weight Score is the product of the average Mean Satisfaction Score (MSS) multiplied by Weight Factors (WF).

$$WS = \text{MPS x WF}$$

***c) Weight Average Total* (WAT)**

Weight Average Total sums up the Weighted Score (WS) of all indicators.

$$WAT = Ws_1 + Ws_2 + ... + Ws_n$$

***d) Customer Satisfaction Index* (CSI)**

The Customer Satisfaction Index (CSI) is the result of the Weighted Average Total (WAT) divided by the Highest Scale (HS) or the maximum value used in the study.

$$CSI = \frac{WAT}{HS} x100\%$$

The CSI scores in this study were divided into five ranges, from very dissatisfied to very satisfied, as shown in Table 1.

Table 1. Range of Palm Oil Farmer Satisfaction Scale

No.	CSI Value Range	Satisfaction Criteria
1.	0%<CSI≤20%	Very Dissatisfied
2.	20%<CSI≤40%	Dissatisfied
3.	40%<CSI≤60%	Moderately Satisfied
4.	60%<CSI≤80%	Satisfied
5.	80%<CSI≤100%	Very Dissatisfied

Source: Amaliah et al., 2020

1. Importance Performance Analysis (IPA)

The satisfaction analysis tool used in this study was the Importance Performance Analysis (IPA) method, which was used to measure the attributes of tauke performance and farmer interests. After assessing each tauke performance and farmer interest attribute through a questionnaire, the scores given by the farmers were added up. The performance of the tauke is represented by the letter X, and the interests of the farmers are represented by the letter Y. The comparison between the performance of the tauke and the interests of the farmers is summarised in a Cartesian diagram divided into four quadrants (Wu et al., 2023; Askew, White, & Green, 2024). This diagram is used to identify which attributes are the top priorities for improvement or maintenance based on the gap between the level of importance and the level of performance.

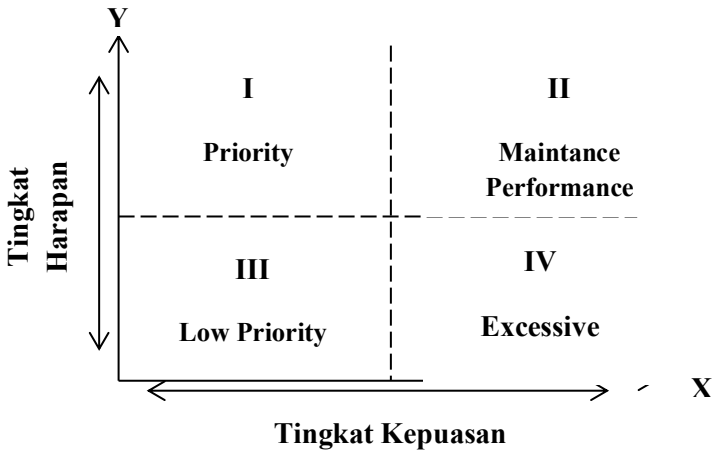

Figure 1. Cartesian Diagram of Importance and Performance Analysis

2. Spearman's rank correlation analysis

Spearman's rank correlation analysis was used to analyse the relationship between the characteristics of palm oil farmers and their satisfaction with tauke attributes. This method measures the degree of relationship between two ordinal variables by assessing the suitability of the same group and calculating quantitative data exactly. Variables are categorised as ordinal if the data is arranged based on ranking; this method is also known as ranked correlation and is denoted by :

$$r_s = 1 - \frac{6\sum d^2}{n(n^2-1)},$$

where:
r_s : Spearman's rank correlation coefficient value
d : Difference between each pair of ranks
n : Amount of data

The application of a similar methodology has been practiced in agricultural research and mapping of ordinal variable relationships. For example, a study by Du et al. (2024) used the Spearman test to assess the relationship between predicted land size and manual land labels, showing that rs is appropriate for ordinal data and produces coefficients between –1 and +1 with strong/weak correlation interpretations (Du et al., 2024). Research by Tu et al. (2025) expanded the use of Spearman for clustered data, showing that the total Spearman correlation can be broken down into inter-cluster and intra-cluster, suitable for structured agricultural datasets such as farmer data in a specific village (Tu, Li, & Shepherd, 2025).

RESULTS AND DISCUSSION

Farmers are individuals who engage in agricultural activities in order to meet their livelihood needs through the management of plantation land. In the context of this study, the focus is on palm oil farmers in Pantai Cermin Village, with a total of 88 respondents. Their characteristics were analysed to provide a deeper understanding of the socio-economic conditions and capacity of farmers in managing their agricultural businesses. The characteristics examined include gender, age, educational level, land area under cultivation, number of family dependents, cosmopolitanism, extension intensity, and sources of information used.

One important characteristic is the age distribution of respondents. As shown in Table 2, 94% of farmers are in the productive age category (15–54 years), while only 6% are in the non-productive age category (>54 years). This table shows that most palm oil farmers in the village are still physically and mentally active, making it relatively easier for them to receive, absorb, and apply information and innovations in their farming practices. This also reflects their readiness to participate in training and extension activities aimed at capacity building (Gusti, 2021; Setiawan, 2020).

Table 2. Age of Palm Oil Plantations

No	Age	Number (of People)	Percentage (%)
1	Productive (15-54 yo)	83	94
2	Non-productive (>54 yo)	5	6
	Total	88	100

Source: Processed Data, 2023

Furthermore, educational characteristics are another indicator that describes farmers' ability to absorb information. Table 3 shows that the majority of palm oil farmers in Pantai Cermin Village have a high school education (SMA/equivalent), accounting for 82% of the total respondents. This indicates that most farmers have sufficient literacy to understand technical information related to palm oil cultivation

and market dynamics. Education is correlated with the ability to grasp technology and agribusiness management (Hardin, 2019; Nurhasanah et al., 2020). Thus, this condition is an important asset in encouraging increased productivity and more rational decision-making in farming.

Table 3. Educational Level of Palm Oil Farmers

No	Education Level	Amount (of People)	Percentage (%)
1	No Schooling	-	-
2	Elementary School / Equivalent	3	3
3	Junior High School / Equivalent	9	10
4	Senior High School / Equivalent	72	82
5	Diploma / Bachelor's Degree	4	5
Totaly		88	100

Source: Processed Data, 2023

Table 3 overall, the profile of the farmers' characteristics provides an overview that palm oil farmers in Pantai Cermin Village have a relatively good capacity in terms of productive age and educational level. The combination of these two factors supports the potential success of sustainable farmer development and empowerment programs. Several studies emphasise that farmer groups in productive age with secondary education levels tend to be more responsive to technological innovations and access to digital information (Suryani et al., 2021; Wulandari & Rahut, 2020).

The educational level of the palm oil farmers in Pantai Cermin Village is dominated by senior high school graduates or their equivalent, totalling 72 individuals or 82 percent of all respondents. This relatively good level of education is considered adequate to support farmers' abilities to independently absorb both technical and non-technical information related to their farming activities. Education also plays an important role in shaping mindset, decision-making processes, and openness to innovation in agribusiness practices. According to Hardin (2019), a higher level of education can encourage farmers to adapt to technological and market changes. This is supported by findings from Kusnadi, Sumarno, and Haris (2021), which show that education is a significant factor in increasing the productivity and efficiency of palm oil farmers. In addition to education, farming experience is another important variable that influences the effectiveness of palm oil plantation management. The distribution of farmers' experience in palm oil farming can be seen in Table 4**.**

Table 4. Experience in Palm Oil Farming

No	Farming Experience	Amount (of People)	Percentage (%)
1	8 - 13 year	20	14
2	14 - 19 year	33	35
3	20 - 25 year	19	30
4	26 - 31 year	13	20
5	31 - 38 year	3	3
Totaly		88	100

Source: Processed Data, 2023

Based on Table 4, it can be observed that the majority of oil palm farmers in Pantai Cermin Village have 14–19 years of farming experience, totaling 33 individuals or approximately 35 percent. This indicates that most farmers possess adequate

knowledge to manage oil palm plantations in a sustainable manner. The longer a farmer's experience, the more advanced their technical and managerial skills, including in pest control, fertilization, and marketing. Yulida (2018) states that farming experience is one of the key factors influencing farmers' capacity to adapt and innovate in response to agricultural challenges. A similar view is expressed by Siregar and Fadilah (2020), who emphasize that experience enhances both technical and non-technical decision-making effectiveness in oil palm agribusiness. In addition to experience, landholding size also plays a crucial role in determining the productivity level of oil palm farming. The distribution of land ownership among farmers is presented in Table 5 below.

Table 5. Area of Palm Oil Plantation Land Use

No	Land Use Area	Amount (of People)	Percentage (%)
1	2,0 - 2,90 Ha	12	14
2	2,91 - 3,80 Ha	31	35
3	3,81 - 4,70 Ha	26	30
4	4,71 - 5,60 Ha	18	20
5	5,61 - 6,50 Ha	1	1
Totaly		88	100

Source: Processed Data, 2023

Table 5 shows that most farmers in Pantai Cermin Village have land areas ranging from 2.91 to 3.80 hectares, with a total of 31 individuals, or 35 percent of the total respondents. This land area is considered sufficient to support optimal and efficient cultivation activities. The larger the land area owned, the greater the potential production output that can be achieved, thereby directly impacting farmers' income. According to Nuwa (2022), land area has a positive correlation with farmers' economic scale and production capacity. Additionally, research by Handoko and Maulana (2023) states that farmers with larger land areas tend to have greater access to better production inputs and technology.

Table 6. Number of dependents of palm oil farmers

No	Number of Family Dependents	Amount (of People)	Percentage (%)
1	1-2 people	51	58
2	3-4 people	36	41
3	5-6 people	1	1
4	7-8 people	-	-
5	>8 people	-	-
Totaly		88	100

Source: Processed Data, 2023

Table 6 shows the number of dependents of oil palm farmers in Pantai Cermin Village. Most farmers, namely 58 percent, or 51 people, have 1–2 dependents. Forty-one percent of respondents have 3–4 dependents, while only 1 percent have 5–6 dependents. No farmers have more than six dependents. The number of family dependents is one of the factors that can influence farmers' ability to meet household needs and motivate them to be more active in managing their farming businesses. This

aligns with Managanta's (2019) view that family is an important driving factor in economic activities, including oil palm farming activities.

Table 7. Cosmopolitanism Among Oil Palm Farmers

No	Cosmopolitanism	Amount (of People)	Percentage (%)
1	Very Low	8	9
2	Low	17	19
3	Moderately High	29	33
4	High	27	31
5	Very High	7	8
Totaly		88	100

Source: Processed Data, 2023

Table 7 shows the level of cosmopolitanism among oil palm farmers in Pantai Cermin Village. The majority of farmers have a fairly high level of cosmopolitanism, with a percentage of 33 percent, or 29 individuals. In addition, 31 percent of respondents are classified as having a high level of cosmopolitanism, and 19 percent are at a low level. Meanwhile, 9 percent of farmers have very low cosmopolitanism, and only 8 percent are at a very high level. Cosmopolitanism reflects the extent to which a farmer is open to new information from outside their environment. According to Ikhsan (2020), farmers with high levels of cosmopolitanism tend to be more open to new ideas and innovations needed in the development of their farming businesses. Furthermore, after discussing the level of cosmopolitanism among farmers, it is important to understand the extent of the extension services they receive, as information and technical guidance significantly influence farmers' ability to adopt innovations. The distribution of extension workers for oil palm farmers is shown in Table 8.

Table 8. Intensity of oil palm farmer extension workers

No	Intensity of Extension Workers	Amount (of People)	Percentage (%)
1	Very Low	19	22
2	Low	31	35
3	Moderately High	22	25
4	High	10	11
5	Very High	6	7
Totaly		88	100

Source: Processed Data, 2023

Table 8 illustrates the distribution of extension service intensity received by oil palm farmers. The results indicate that the majority of respondents, amounting to 35 percent, reported that the intensity of extension services was still relatively low. Furthermore, 22 percent of respondents perceived the extension services as very infrequent, while only 11 percent and 7 percent stated that extension activities were frequent or very frequent, respectively. Meanwhile, 25 percent of respondents indicated that extension services were conducted with moderate frequency. The limited intensity of extension activities is primarily attributed to the scheduling, which typically occurs only once every six months, preventing farmers from regularly accessing up-to-date information on oil palm cultivation. Rimbawati (2018) noted that

one of the factors contributing to the low intensity of agricultural extension services is the limited number of extension personnel and the vast areas they are required to cover. To further capture farmers' openness to innovation and external support, an analysis was also conducted on their access to information from various sources, as presented in Table 9 below.

Table 9. Sources of information for oil palm farmers

No	Information Source	Total (of People)	Percentage (%)
1	Very Low	9	10
2	Low	20	23
3	Moderately High	29	33
4	High	20	23
5	Very High	10	11
Totaly		88	100

Source: Processed Data, 2023

Table 9 illustrates the perceptions of oil palm farmers regarding the sources of information they utilise in managing their farming activities. The results indicate that 33 percent of respondents reported having a sufficient number of information sources, 23 percent stated they had many sources, and 11 percent reported having a very large number of sources. On the other hand, 23 percent of respondents acknowledged having limited sources of information, and 10 percent admitted to having very few. These findings suggest that a portion of farmers still lacks adequate access to diverse sources of information, whether from media, agricultural extension agents, or fellow farmers. This limited access may hinder their decision-making processes and the adoption of innovations in farm management. In line with this, Fitriani (2020) emphasised that the more diverse and reliable the sources of information available to farmers, the greater their empowerment and capacity to develop their agribusiness independently.

The analysis of oil palm farmers' satisfaction with the attributes of tauke (middlemen) was conducted using the Customer Satisfaction Index (CSI) approach. This method aims to measure the level of satisfaction among respondents regarding various service attributes provided by tauke as intermediaries in the marketing chain of fresh fruit bunches (FFB) of oil palm. Farmers' satisfaction was assessed using the CSI method through several measurement stages, including the calculation of the Mean Importance Score (MIS) and the Mean Satisfaction Score (MSS), the determination of the Weighting Factor (WF), the computation of the Weight Score (WS), and the derivation of the Weighted Average Total (WAT), followed by the calculation of the final Customer Satisfaction Index (CSI). The results of the CSI analysis are presented in Table 10.

Table 10. Results of Customer Satisfaction Index (CSI) analysis calculations

No	Attributes of Middlemen (Tauke)	MIS	MSS	WF	WS
1	Fulfillment of agreements or promises	3,44	3,81	12,12	46,12
2	Provision of loans	4,03	4,19	14,19	59,52
3	Provision of farming facilities	3,31	3,45	11,64	40,19
4	Fast and good service	3,40	3,86	11,96	46,19
5	High pricing	2,78	3,95	9,80	38,74
6	Immediate cash payment	4,17	4,13	14,67	60,53
7	Close social relationship	2,80	3,41	9,84	33,53
8	Recommendations from peers	2,10	2,44	7,40	18,07

9	Kinship relationship	2,39	2,42	8,40	20,32
WAT		**363,22**			
CSI		**72,64 (Satisfied)**			

Source: Processed Data, 2023

Table 10 illustrates that the level of farmer satisfaction with tauke attributes falls into the "satisfied" category, with a score of 72.64. This indicates that the services provided are not yet optimal overall, as the satisfaction index did not exceed the threshold of 80. Therefore, improvements are needed in the performance of certain tauke attributes to elevate satisfaction to the "very satisfied" category. The results of this assessment may serve as a foundation for Tauke to enhance the quality of services provided to farmers, ensuring continued loyalty and preference from farmers in selling their harvests. Satisfaction plays a crucial role in fostering customer loyalty. This is consistent with the findings of Pratama (2021), who stated that customer satisfaction is key to creating loyalty, encouraging repeat purchases, sustained patronage, and positive word-of-mouth, ultimately preventing customers from switching to alternative buyers.

Furthermore, the Importance Performance Analysis (IPA) is applied to evaluate the extent to which oil palm farmers' expectations and perceptions align with the performance of tauke across various service attributes. This approach helps identify which attributes are considered important by farmers but are currently not being matched with adequate performance by Tauke, thereby providing a basis for targeted service improvements. The level of farmer satisfaction with tauke attributes will be examined using the Importance Performance Analysis (IPA) method, which is presented through a Cartesian Diagram. The IPA method allows for identifying which performance aspects should be maintained or improved by Tauke based on farmers' perceptions of these attributes. The results of the Importance Performance Analysis are illustrated in the Cartesian Diagram shown in Figure 2.

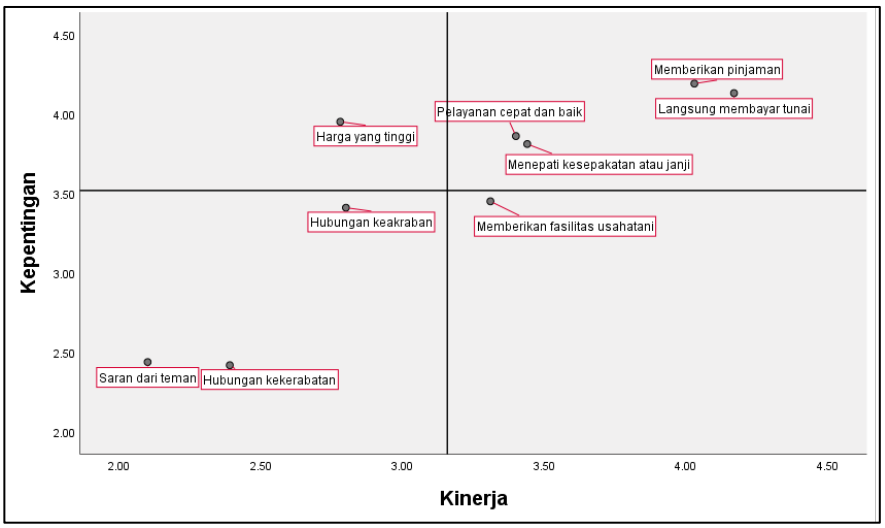

Figure 2. Cartesian diagram of Importance Performance Analysis for tauke attributes
Source: Processed Data (2023)

Quadrant I consists of tauke attributes that, according to farmers' perceptions, demonstrate low performance despite being considered important. The attribute classified in this quadrant is "high price." This attribute should be improved by the tauke to attract and retain farmers, as it holds a high level of importance in the farmers'

decision-making process when choosing a tauke. Quadrant II includes tauke attributes that are perceived by farmers to have both high importance and high performance. These attributes are fast and quality service, honouring agreements or promises, providing loans, and immediate cash payments. Attributes in this quadrant must be maintained, as they represent the competitive advantage of tauke and serve as the main reasons for farmers to choose them as marketing intermediaries. This is consistent with the findings of Hasna (2021), who emphasised that all attributes located in Quadrant II should be preserved due to their high performance and importance. Quadrant III contains attributes such as advice from peers, personal closeness, and familial relationships. These attributes are perceived by farmers as having low importance and low performance, indicating that they do not significantly influence farmers' decisions when selecting a tauke. Therefore, there is no urgent need for Tauke to improve performance in these areas. Quadrant IV includes the attribute "providing farming facilities." According to farmers' perceptions, this attribute has low importance and does not substantially influence their decision to choose or remain loyal to a tauke. Hence, this attribute can be deprioritized.

The next analysis explores the relationship between farmers' characteristics and their level of satisfaction with various tauke attributes. The farmer characteristics examined include age, education level, farming experience, and land size. Understanding these relationships is crucial to determine whether farmers' personal backgrounds influence their satisfaction and perceptions of tauke performance in the palm oil marketing chain. The Spearman rank correlation analysis was employed to assess the strength of relationships between farmer characteristics—such as age, education level, farming experience, land area, number of dependents, cosmopolitanism, extension service intensity, and access to information—and tauke attributes, which include honouring agreements, providing loans, offering farming facilities, fast and good service, high price, immediate cash payment, personal closeness, peer recommendations, and familial ties. This analysis aims to identify the extent to which farmer characteristics influence their satisfaction with the tauke's performance, particularly in evaluating the various service attributes. Characteristics such as age, education, farming experience, and land area are presumed to affect perceptions of service quality and the role of tauke in the palm oil marketing chain. By examining these relationships, it is possible to identify which farmer profiles are more likely to be satisfied or dissatisfied with tauke performance. Based on the Spearman rank correlation analysis, the following significant relationships were observed: age is significantly correlated with the familial relationship attribute; farming experience is significantly correlated with the attributes of providing loans, farming facilities, and offering high prices; and access to information is significantly correlated with the attribute of providing farming facilities. The correlation values for these relationships are presented in Table 11.

Table 11. Relationship between farmer characteristics and tauke performance satisfaction with tauke attributes

No	Attributes of Middlemen	Characteristics of Farmers							
		Age	TP	PBT	LP	JTK	Cosmo	Intent	Info Source
1	Make an agreement	-0,075	-0,063	-0,005	0,005	0,035	-0,019	-0,058	0,047
2	Providing loans	0,087	-0,146	0,186	0,007	0,083	-0,092	-0,105	0,005

3	Providing farming business facilities	-0,052	0,133	**0,247***	0,064	0,019	0,118	0,173	**0.252***
4	Fast & good service	0,053	-0,025	0,046	-0,029	0,014	-0,070	-0,118	0,000
5	High price	-0,015	-0,001	**-0,229***	-0,037	0,144	0,001	-0,136	-0,098
6	Immediate cash payment	0,016	-0,042	0,104	0,010	-0,060	-0,053	-0,059	0,045
7	Personal relat.	0,119	-0,120	-0,004	-0,050	-0,138	-0,102	-0,078	-0,128
8	Suggestions from friends	0,192	-0,045	0,049	0,105	-0,082	-0,087	-0,116	-0,067
9	Kinship relat.	0,094	0,046	-0,036	0,004	-0,084	-0,028	-0,051	-0,073

Source: Processed Data, 2023

Note :
* Correlation is significant at the 0.01 level (2-tailed).
** Correlation is significant at the 0.05 level (2-tailed).
TP = Education level
PBT = Farming experience
LP = Land area under cultivation
JTK = Number of family dependents

Table 11 shows a positive and significant relationship between farming experience and farmers' satisfaction with the attribute of farming facility provision by the middlemen (tauke), with a correlation coefficient of 0.247, categorized as a weak relationship. This indicates that the longer or more extensive a farmer's experience in farming, the higher their satisfaction with the facilities provided by the tauke. This occurs because experienced farmers tend to trust tauke who are also experienced, believing that they better understand the needs of farming businesses and are willing to provide support such as capital or planting tools to enhance farm productivity. Similar findings were reported in a CIFOR study, which stated that limited access to formal credit encourages reliance on local intermediaries who offer informal capital to independent farmers (Sahara, Haryadi, & Kusumowardhani, 2017). This study reinforces the interpretation that experience and local relationships are crucial factors influencing farmers' satisfaction with the facilities offered.

Moreover, the characteristic of information sources also shows a positive and significant correlation with the attribute of farming facility provision, with a coefficient of 0.252 and a low-strength relationship. This means that the more diverse the sources of information accessed by farmers—through media, extension agents, or social networks—the higher their satisfaction with the facilities provided by tauke. This perception arises because farmers with broader access to information are more likely to align their expectations with the tauke, thereby encouraging tauke to provide facilities that match the actual needs of farmers. A study in Nepal that investigated farmers' satisfaction with information sources found that both the quality and quantity of information significantly influence satisfaction in agricultural decision-making (Phiri et al., 2019). These findings are relevant as evidence that information access enhances farmers' perception and trust in the facilities offered.

Table 11 also reveals a negative and significant correlation between farming experience and the high-price attribute, with a coefficient of –0.229. This negative value indicates that the more experienced the farmer, the lower their satisfaction with the selling price offered by tauke. Experienced farmers tend to have a more mature understanding of market dynamics and fair pricing, making them more critical of prices they perceive as unfair or too low. A related study by CIFOR notes that

dissatisfaction with prices often occurs when collectors set prices without considering the local knowledge and experience of farmers (CIFOR, 2017). This shows that experience influences farmers' perceptions of fairness in price transactions. The analysis of the relationship between farmers' characteristics and their level of importance regarding tauke attributes was also conducted using the Spearman Rank test, particularly for attributes such as loan provision by tauke. The results indicate that the education level of farmers significantly affects their perceived importance of the tauke's loan attribute. This implies that more educated farmers have higher expectations for tauke to provide access to business loans. This correlation is important to understand that it is not only the perceived performance but also the perceived importance or expectation of tauke functions that varies based on the socio-economic characteristics of the farmers.

Table 12. The Relationship Between Farmers' Characteristics and Their Satisfaction and Importance Toward Tauke Attributes

No	Attributes of Middlemen	Characteristics of Farmers							
		Age	TP	PBT	LP	JTK	Cosmo	Intent	Info Source
1	Make an agreement	-0,075	-0,063	-0,005	0,005	0,035	-0,019	-0,058	0,047
2	Providing loans	0,087	-0,146	0,186	0,007	0,083	-0,092	-0,105	0,005
3	Providing farming business facilities	-0,052	0,133	**0,247***	0,064	0,019	0,118	0,173	**0.252***
4	Fast & good service	0,053	-0,025	0,046	-0,029	0,014	-0,070	-0,118	0,000
5	High price	-0,015	-0,001	**-0,229***	-0,037	0,144	0,001	-0,136	-0,098
6	Immediate cash payment	0,016	-0,042	0,104	0,010	-0,060	-0,053	-0,059	0,045
7	Personal relat.	0,119	-0,120	-0,004	-0,050	-0,138	-0,102	-0,078	-0,128
8	Suggestions from friends	0,192	-0,045	0,049	0,105	-0,082	-0,087	-0,116	-0,067
9	Kinship relat.	0,094	0,046	-0,036	0,004	-0,084	-0,028	-0,051	-0,073

Source: Processed Data, 2023

Note :
* Correlation is significant at the 0.01 level (2-tailed).
** Correlation is significant at the 0.05 level (2-tailed).
TP = Education level
PBT = Farming experience
LP = Land area under cultivation
JTK = Number of family dependents

Table 12 shows that the education level of farmers has a positive and significant relationship with the attribute of providing loans, with a correlation value of 0.300**. This indicates a low-strength correlation, meaning that the higher the education level of the farmers, the greater their perceived importance of the loan-providing attribute. This is crucial for farmers as such loans are used to manage and expand their farming operations in order to achieve optimal production outcomes.

CONCLUSION

The majority of respondents were within the productive age group, with an average education level of senior high school or its equivalent. Most had 14–19 years of farming experience, managed land areas between 2.91 and 3.80 hectares, had 1–2 family dependents, demonstrated relatively high levels of cosmopolitanism, received limited agricultural extension services, and accessed a broad range of information sources. The overall satisfaction level of smallholders toward taukewas was categorised as "satisfied," with a Customer Satisfaction Index (CSI) score of 72.64. Attributes identified in Quadrant II—indicating both high performance and high importance—include fast and good service, honouring agreements or promises, providing loans, and making immediate cash payments; these are attributes that should be maintained. The relationship analysis between smallholder characteristics and satisfaction with tauke performance revealed that farming experience and access to information both had significant but low correlations with the attribute of providing farming facilities, while farming experience also had a significant but low correlation with the attribute of high pricing. Additionally, the relationship between smallholder characteristics and the perceived importance of tauke attributes showed that education level had a highly significant but low correlation with the attribute of loan provision.

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REFERENCE

Ahmad, T., & Fitriani, L. (2020). Educational attainment and agricultural technology adoption: A case study of Indonesian palm oil farmers. International Journal of Rural Development, 9(1), 34–42.

Alfiansyah, A. D., & Wardhani, P. C. (2021). Study of Surabaya-Mojokerto Toll Road Service Level Using the Customer Satisfaction Index (CSI) Method. Journal of Civil Engineering Science and Technology, 2(2), 12–18.

Amaliah, I., Fakhriyyah, S. F., Hasani, C., Made, S., Adhawati, S. S., & Wahid, A. (2020). Analisis kepuasan konsumen ikan hias di Kota Makassar. Prosiding Simposium Nasional Kelautan dan Perikanan, 7, 187–194.

Askew, A. E., White, E. M., & Green, G. T. (2024). Importance-performance competitor analysis for comprehensive assessment of National Forest visitor satisfaction. Journal of Park and Recreation Administration, 42(1), 21–41. https://doi.org/10.18666/JPRA-2023-11977

Badan Pusat Statistik. (2020). Statistik Kelapa Sawit Indonesia 2019. Jakarta: BPS.

Du, J., et al. (2024). A novel approach for farmland size estimation in smallholder agriculture: Assessing correlation between predicted and manual parcel sizes. Remote Sensing, 16(16), 2981. https://doi.org/10.3390/rs16162981

Fitriani, F. S., Dayat, & Widyastuti, N. (2020). Pemberdayaan petani terhadap pengaplikasian pupuk organik cair mol dari limbah sayur pada budidaya wortel (Daucus carota L) (Studi kasus di Kecamatan Cikajang, Kabupaten Garut). Jurnal Inovasi Penelitian, 1(3), 1–4.

Fosch, A., Heim, S., Noleppa, S., & von Braun, J. (2023). Replanting unproductive palm oil with smallholder perspectives on SDGs in Sumatra. Communications Earth & Environment, 4, Article 162. https://doi.org/10.1038/s43247-023-01037-4

Gusti, I. M., Gayatri, S., & Prasetyo, A. S. (2021). Pengaruh umur, tingkat pendidikan dan lama bertani terhadap pengetahuan petani mengenai manfaat dan cara penggunaan kartu tani di Kecamatan Parakan. Jurnal Litbang Provinsi Jawa Tengah, 19(2), 209–221.

Handoko, M., & Maulana, A. (2023). Impact of land size on production efficiency of smallholder palm oil farmers in Indonesia. Journal of Agribusiness and Rural Development, 59(2), 77–88.

Hardin. (2019). Identitas petani yang mempengaruhi pendapatan bagi usahatani padi sawah di Kota Baubau. Media Agribisnis, 3(2), 121–144.

Hardin, M. (2019). Education and farmer decision-making: A study of rural development. Journal of Agricultural Economics, 45(1), 55–67.

Hasna, W. B. D., & Nuryana, I. K. D. (2021). Analisis kualitas layanan website Sociolla terhadap kepuasan pelanggan dengan metode WebQual 4.0 dan Importance Performance Analysis (IPA). JEISBI (Journal of Emerging Information Systems and Business Intelligence), 2(4), 27–32.

Ikhsan, M., Yulida, R., & Restuhadi, F. (2020). Hubungan karakteristik internal dan eksternal dengan jaringan komunikasi petani karet di Kelurahan Batu Bersurat Kecamatan XIII Koto Kampar. Journal of Agribusiness and Community Empowerment, 3(1), 27–36.

Jelsma, I., Giller, K. E., & Fairhurst, T. H. (2017). Unpacking Indonesia's independent palm oil smallholders: An actor-disaggregated approach to identifying environmental and social performance challenges. Land Use Policy, 69, 281–297. https://doi.org/10.1016/j.landusepol.2017.08.012

Kusnadi, E., Sumarno, D., & Haris, S. (2021). The effect of education on farmer productivity: Evidence from palm oil smallholders. Agricultural Socio-Economics Journal, 21(3), 211–219.

Managanta, A. A., Sadono, D., & Tjitropranoto, P. (2019). Faktor-faktor yang berpengaruh terhadap kompetensi petani kakao di Provinsi Sulawesi Tengah. Jurnal Penyuluhan, 15(1), 120–133.

Martens, K. (2020). Environmental governance meets reality: Smallholders in Indonesian palm oil. Environmental Politics, 29(7), 1179–1200. https://doi.org/10.1080/08941920.2019.1674436

Nuwa, M. (2022). The correlation between land area and palm oil yield: Evidence from small-scale plantations. Asian Journal of Agricultural Extension, Economics & Sociology, 40(1), 50–60.

Nuwa, M. F., Rauf, A., & Boekoesoe, Y. (2022). Karakteristik petani di Kecamatan Tolangohula Kabupaten Gorontalo. AGRINESIA: Jurnal Ilmiah Agribisnis, 6(2), 89–95.

Nurjanah, D., & Anggrasari, H. (2023). Role of the middleman in supporting of palm oil smallholders' community performance: A case study in North Sumatra, Indonesia. AgriHealth, 4(1), 14–22. https://doi.org/10.20961/agrihealth.v4i1.70619

Phiri, E., et al. (2019). Smallholder farmers' information sources and satisfaction levels: Evidence from Nepal. Journal of Agricultural Extension, 25(3), 150–164.

Pramudya, E. P., Hospes, O., & Termeer, C. J. A. M. (2022). Incentive mechanisms for sustainable palm oil smallholders under the ISPO scheme. Land, 11(4), 576. https://doi.org/10.3390/land11040576

Pratama, H. E., & Sulistiani, H. (2021). Sistem penilaian kepuasan pelanggan menggunakan Customer Satisfaction Index pada penjualan parfume (Studi kasus: Parfume Corner BDL). Jurnal Teknologi dan Sistem Informasi, 2(4), 29–36.

Pratiwi, D., Saputra, M. C., & Wardani, N. H. (2018). Penggunaan metode User Centered Design (UCD) dalam perancangan ulang web portal Jurusan Psikologi FISIP Universitas Brawijaya. Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer, 2(7), 2448–2458.

Raharja, S. (2020). Institutional strengthening model of palm oil independent smallholder in Riau and Jambi Provinces, Indonesia. Heliyon, 6(4), e03767. https://doi.org/10.1016/j.heliyon.2020.e03767

Rahmawati, D., & Hasan, M. (2019). The impact of land size and farming experience on palm oil production. Agrotech Journal, 12(2), 102–110.

Reich, C., McCarthy, J. F., & Cramb, R. A. (2025). Certification for palm oil smallholders in Indonesia: Pathways and constraints. Journal of Environmental Management, 314, 115076. https://doi.org/10.1016/j.jenvman.2025.115076

Rimbawati, D. E. M., Fatchiya, A., & Sugihen, B. G. (2018). Dinamika kelompok tani hutan agroforestry di Kabupaten Bandung. Jurnal Penyuluhan, 14(1).

Santoso, I., Mulyarto, A. R., & Maharani, S. (2011). Persepsi konsumen terhadap kualitas Bakpao Telo dengan metode Importance Performance Analysis. Jurnal Teknologi Pertanian, 12(1), 23–30.

Sahara, A., Haryadi, A., & Kusumowardhani, S. (2017). Smallholder finance in the palm oil sector: Analyzing the gaps between existing credit schemes and smallholder realities. CIFOR Publications.

Simanjuntak, P., & Lestari, S. (2023). Characteristics of palm oil smallholders and their productivity levels. Journal of Agro-Economic Research, 31(1), 45–53.

Siregar, A., & Fadilah, R. (2020). Farming experience as a driver for innovation among palm oil smallholders. Indonesian Journal of Agribusiness, 38(2), 122–130.

Suardi, T. F., Sulistyowati, L., Noor, T. I., & Setiawan, I. (2022). Analysis of the sustainability level of smallholder palm oil agribusiness in Labuhanbatu

Regency, North Sumatra. Agriculture, 12(9), 1469. https://doi.org/10.3390/agriculture12091469

Tu, S., Li, C., & Shepherd, B. E. (2025). Between- and within-cluster Spearman rank correlations: Applications for clustered agricultural and longitudinal data. Statistics in Medicine, 44(3-4), e10326. https://doi.org/10.1002/sim.10326

Veriasa, T. O., Nurrunisa, M., & Fadhli, N. (2024). Revisiting the implications of RSPO smallholder certification relative to farm productivity in Riau, Indonesia. Forest and Society, 8(1), 123–139. https://doi.org/10.24259/fs.v8i1.26964

Wahyuni, E., & Ramadhan, B. (2021). Farmer's knowledge and land productivity in palm oil plantations. Journal of Sustainable Agriculture, 15(3), 97–105.

Wu, C.-H., Kuo, P.-L., Yang, C.-H., Chang, Y.-C., & Chen, T.-L. (2023). Importance–Performance Analysis (IPA) in analyzing the satisfaction of administrative support in teaching practice research programs. Sustainability, 15(3), 1943. https://doi.org/10.3390/su15031943

Yulida, N. (2018). Farming experience and decision making: A case of palm oil smallholders. Jurnal Ekonomi Pertanian dan Agribisnis, 6(4), 213–221.

Yulida, R., Rosnita, R., Sayamar, E., & Andriani, Y. (2018). Analisis tingkat kemampuan literasi media petani perkebunan di Provinsi Riau. Unri Conference Series: Agriculture and Food Security, 1, 173–181.