

Measuring the Customer Satisfaction to Improve the Product Quality of Premium Seeds Produced by Bintang Asia based on the Customer Satisfaction Index (CSI) dan Importance Performance Analysis (IPA)

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Abstract. Service quality improvement is essential to obtain positive feedback from customers. This study measured the level of customer satisfaction with the quality of superior seed Bintang Asia products based on CSI (customer satisfaction index) and IPA (importance-performance analysis) methods. This study also identified the attributes that should be maintained, improved and reduced to gain higher customer satisfaction with Bintang Asia superior quality seed products using IPA (Importance Performance Analysis) analysis. This quantitative descriptive study employed a survey method, where consumers were sent links to a customer satisfaction survey through WhatsApp. Customer satisfaction was measured based on five dimensions of SERVQUAL expressed in a Likert scale. The data were then analyzed to determine the customer satisfaction index (CSI) on the SPSS program. The customer satisfaction index scored 82.35% (Good), where its dimensions, namely Tangible, Reliability, Responsiveness, Assurance, and Empathy, scored 83.81% (Good), 81.11% (Good), 79.24% (Borderline), 84.76% (Very Good), and 82.87% (Good) respectively. Based on the importance-performance analysis (IPA) method, the customer satisfaction level identified 27 user attributes/indicators in quadrant B/II, indicating that PT. Benih Citra Asia needs to maintain customer satisfaction.

1 Introduction

The agricultural sector is central to Indonesia's economy as it has a significant role in conserving natural resources, providing livelihoods, and creating employment opportunities. The contribution of agricultural sector ranked second for the national economy.

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Statistics Indonesia has reported the gross domestic product (GDP) of agricultural business fields at current prices of IDR 2.25 quadrillion in 2021. It is contributing 13.28% to the national GDP. However, the amount decreased by 0.42 percentage points compared to the previous year and 0.65 percentage points compared to 2010. The growth rate of the agricultural sector was 1.84% in 2021. The growth rate is higher than the one in 2020. However, it is still lower than the growth rate before the COVID-19 pandemic, which used to remain consistent above 3%, as shown in Table 1.

Table 1. The Growth Rate of Agricultural Sector towards the National GDP (2010-2021)

No	Name	GDP Distribution in Agricultural Sector / Percent	Agricultural Sector Growth Rate/ Percent
1	2010	13.93	Undefined
2	2011	13.51	3.95
3	2012	13.37	4.59
4	2013	13.36	4.2
5	2014	13.34	4.24
6	2015	13.49	3.75
7	2016	13.48	3.37
8	2017	13.16	3.92
9	2018	12.81	3.88
10	2019	12.71	3.61
11	2020	13.7	1.77
12	2021	13.28	1.84

Source : Statistics Indonesia

Seed production is a part of the agricultural sector that underpins the economic growth. However, national seed production for food and horticultural crops in Indonesia has been quite volatile over the last five years, from 2017-2021. The data released by Statistics Indonesia on food crop seed production in Indonesia are presented in Table 2.

Table 2. The National Food Crop Seed Production (2017-2021)

No	Commodity (Ton)	Year				
		2017	2018	2019	2020	2021
1	Inbred Rice	127.527.44	129.846.83	119.183.53	112.286.75	91.993.54
2	Hybrid Rice Extension Seeds	79.199.29	83.916.21	69.169.76	73.625.64	50.016.29
3	Hybrid Rice Seeds	193.92	369.93	372.18	577.02	378.71
4	Composite Corn Extension Seeds	3.037.05	469.86	1.118.32	817.75	533.27
5	Hybrid Corn Seeds	52.393.21	74.854.69	85.943.58	50.006.89	10.526.10
6	Soybean Extension Seeds	22.016.10	25.110.26	9.291.28	4.208.47	5.661.14

Source : Statistics Indonesia (2021)

Inbred rice seed production is the largest among all food crop seeds, with production volume increasing from 127.527.44 tons in 2017 to 129.846.83 tons in 2018 before it declined sharply in the following years with 119.183.53 tons in 2019, 112.286.75 tons in 2020, and 91.993.54 tons in 2021.

PT. Benih Citra Asia is a company engaged in agriculture, handling food and horticultural crop seed production through plant breeding. This company is known in the market under the trademark Bintang Asia, which was founded by Putra Indonesia in 2006. The company's vision is to become a leading national seed company in Asia, generating benefits for owners, employees, farmers, and the community. To achieve its objectives, the company has set several missions: (1) Conducting research and developing superior varieties that are competitive and meet the demands of the Indonesian and Asian markets. (2) Producing quality seeds by empowering farmers, mutually beneficial farmer groups. (3) Enhancing customer satisfaction by providing high quality superior varieties. (4) Developing quality human resources with professionalism in respective fields of work. (5) Providing services and assistance to partner distributors and farmers for better welfare. (6) Carrying out marketing development outside Indonesia, especially the Asian continent. The partner distributors and customers of PT. Benih Citra Asia is all over Indonesia. Customer satisfaction was measured as an essential parameter of the company's growth. The results are shown in Table 3.

Table 3. Customer Satisfaction of PT Benih Citra Asia in 2020

Dimension	Total Respondents	
	Distributor	Customer
Product and Packaging	10.050	19.390
Promotion and Promotional Content	7.629	9.217
Product Quality	8.988	11.175
Service & Complaint Handling	7.626	11.185
Sales	10.766	0
	45.059	50.967

Source: Primary Data (2020)

The Service & Complaint Handling dimensions require special attention to obtain the lowest value 7.626. For the customer category, the dimensions that require particular attention are promotions and promotional content, with the lowest value of 9.217.

The intensifying business competition in the era of globalization requires the adequate capability of a company to fulfill customers' expectations and improve customer satisfaction [1], for both positively affect company profitability [7]. At the same time, improving those factors also leads to higher customer loyalty, lower customer turnover, and better company reputation [9]. Customer satisfaction measurement needs to consider two aspects: customer satisfaction with the products and services and customer satisfaction with competitors' products/services. Companies need to attend the changes in the business competition to stay competitive and sustainable.

Seed quality determines the success of farming [4]. Non-certified seeds can lead to various problems and cause low agricultural productivity. Certified seeds have high quality and yield continuous crop productivity despite their higher price. On the other side, customers have varying purchasing power and preferences, with some prioritizing affordability over

quality and vice versa. As a result, market share fluctuates, and producers need to respond quickly to remain competitive. Understanding customers' expectations is the key to customer satisfaction in using certified seeds [3], resulting in greater customer loyalty and profitability [5]. Customer satisfaction surveys can help producers identify the seeds customers prefer and expect.

PT Benih Citra Asia has measured customer satisfaction by conducting surveys that involved distributors and end customers. Unfortunately, the instruments used in the surveys were unstandardized, and the questionnaires were distributed manually using printed sheets. Consequently, the data collection took a relatively long time and effort. Customers' responses were measured in simple calculations. In this study, customer satisfaction was evaluated dynamically using a management information system. One of the parameters that measures customer satisfaction is the customer satisfaction index. The Customer Satisfaction Index (CSI) uses the level of importance of service attributes in measuring the CSI. In addition to the Customer Satisfaction Index (CSI), Importance Performance Analysis (IPA) reflects customer satisfaction. IPA shows the relative importance of various company performance attributes and can be used to develop company management strategies [8].

2 Method

This research was conducted at PT. Benih Citra Asia, Jl. Akmaludin 26 Jember, involving customers from all regions in Indonesia in 6 marketing areas from January 2023 - March 2023. The management of customer satisfaction at PT. Benih Citra Asia is carried out by the Finance and Marketing division, particularly by the Customer Service sub-division. A quantitative descriptive approach was used in this study in the form of a survey. Survey questionnaires were distributed online to both end-customers. The data showed that there were 25,838 active customers. The size of the samples was determined using the Slovin's formula as follows:

$$n = \frac{N}{(1 + N \cdot e^2)}$$

Where :

- n : *Number of samples*
- N : *Total Population*
- e : *Error tolerance*

Proportionate stratified random sampling technique to select representative samples from heterogeneous population.

$$ni = \frac{Ni}{N} \times n$$

Where :

- ni : *Number of samples in every marketing area and types of customers*
- Ni : *The number of population in each marketing area and the types of customers*
- N : *Total population in all marketing area and the types of customers.*
- n : *Total samples based on Slovin's formula*

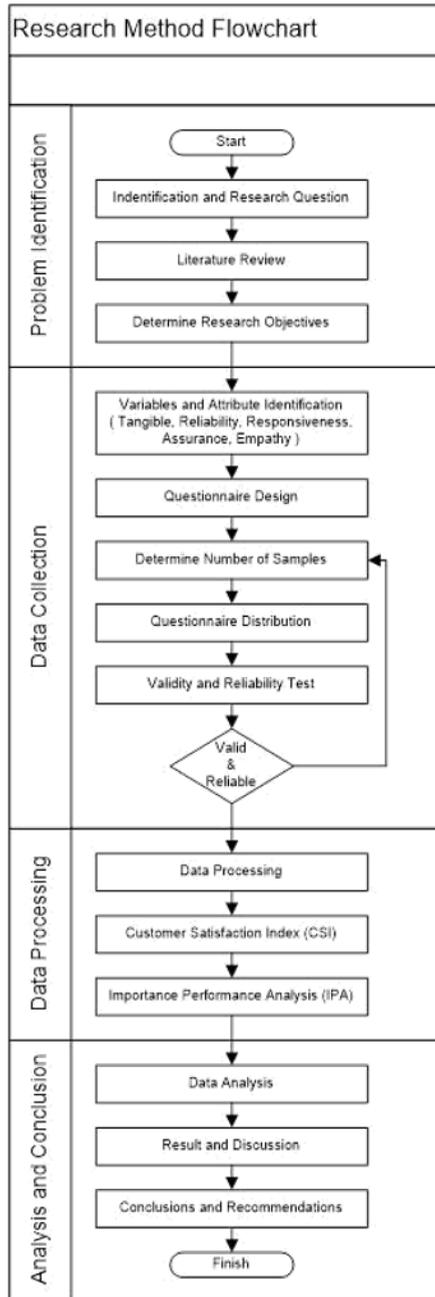


Fig. 1. Research Flowchart

PT. Citra Asia seeds has 115 marketing officers. The existing customer satisfaction survey management information system was used. Each officer handles a minimum of 20 distributors and 30 end customers based on the SOP at PT. Seed Citra Asia. Selected customers received WhatsApp messages containing the customer satisfaction survey questionnaire link.

In measuring the level of customer satisfaction, five dimensions of SERVQUAL were used to represent the ten dimensions. The validity test was carried out in advance to ensure that the instruments precisely measured the intended data. In contrast, the reliability test ensured the instrument had consistent scores in repeated measurements, as shown in Figure 1.

3 Results and Discussions

3.1 Validity and Reliability

Table 4. The Results of Validity Testing

			TOTAL	VALIDATION
X01	Completeness of information on the packaging	Pearson Correlation	.676**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X07	Visual design on the packaging	Pearson Correlation	.706**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X06	Satisfaction in product selection	Pearson Correlation	.772**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X05	Ease of accessing the product	Pearson Correlation	.679**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X04	Packaging design	Pearson Correlation	.711**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X03	Seed varieties' excellences	Pearson Correlation	.723**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X02	Product price compared to competitor products' price	Pearson Correlation	.682**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X08	Amount of promotional materials	Pearson Correlation	.544**	<i>Valid</i>
		Sig. (2-tailed)	.000	
		N	2444	
X09	Promotional Quantity	Pearson Correlation	.754**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	

			TOTAL	VALIDATION
X10	Promotional Quality	Pearson Correlation	.745**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X18	Satisfaction toward the yield	Pearson Correlation	.805**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X17	Conformity of the yield towards the market	Pearson Correlation	.785**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X16	Conformity of product images with the real product	Pearson Correlation	.774**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X14	Seed genetic purity	Pearson Correlation	.763**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X15	Resistance to pest and diseases	Pearson Correlation	.715**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X11	Seed physical purity	Pearson Correlation	.772**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X12	Seed vigor	Pearson Correlation	.765**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X13	Seed growth rate	Pearson Correlation	.736**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X27	Complaint handling	Pearson Correlation	.738**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X26	Swiftness in complaint resolution	Pearson Correlation	.715**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	
X25	Swiftness of complaint verification	Pearson Correlation	.718**	<i>Valid</i>
		Sig. (2-tailed)	0.000	
		N	2444	

			TOTAL	VALIDATION
X24	Technical communication skill	Pearson Correlation	.751**	Valid
		Sig. (2-tailed)	0.000	
		N	2444	
X23	The presence of officers	Pearson Correlation	.732**	Valid
		Sig. (2-tailed)	0.000	
		N	2444	
X21	Interaction and communication among the officers	Pearson Correlation	.757**	Valid
		Sig. (2-tailed)	0.000	
		N	2444	
X20	Intensity of officers' visit	Pearson Correlation	.748**	Valid
		Sig. (2-tailed)	0.000	
		N	2444	
X19	Technical cultural skill	Pearson Correlation	.737**	Valid
		Sig. (2-tailed)	0.000	
		N	2444	
X22	Capability and Credibility of the officers	Pearson Correlation	.737**	Valid
		Sig. (2-tailed)	0.000	
		N	2444	
TOTAL		Pearson Correlation	1	
		Sig. (2-tailed)		
		N	2444	

** . Correlation is significant at the 0.01 level (2-tailed).

Table 5. The Results of User Satisfaction

Cronbach's Alpha	N of Items
.965	27

Source : Primary Data (2023)

The Cronbach's Alpha value obtained for N=27 is 0.964. However, the reliability test results require a minimum Cronbach's Alpha of 0.60. In this case, the obtained value of 0.965 is greater than the required minimum value. The gap or difference between the satisfaction and perceived interest of the customers using the services of PT. Benih Citra Asia indicates the need for improvement in their services. Therefore, PT. Asian Citra Seeds needs to improve its services to bridge the gap between satisfaction and perceived interest. The comparison between the satisfaction and interest levels of the customers is presented in Table 6.

Table 6. Satisfaction and interest levels of the customers

Dimension	Satisfaction	Interest	Gap
<i>Tangible</i>	4.19	4.42	-0.23
<i>Reliability</i>	4.05	4.36	-0.31
<i>Responsiveness</i>	3.96	4.40	-0.43
<i>Assurance</i>	4.24	4.46	-0.22
<i>Empathy</i>	4.14	4.40	-0.26

Source: Primary Data Processed (2023)

As seen in the Table, the gap between satisfaction and interest in general ranges from -0.22 (lowest) to -0.43 (highest). The highest gap is found in the Responsiveness dimension of - 0.43, while the lowest is in the Assurance dimension of -0.22. The gap value is negative, meaning that seed user customers have more significant interests (expectations) than perceived company satisfaction (performance).

3.2 Customer Satisfaction Index (CSI)

The Customer Satisfaction Index for the *Tangible* dimension is shown in Table 7.

Table 7. CSI of *Tangible* Dimension

Indicator	MIS	MSS	WF	WS
Design image on the packaging	4.42	4.27	16.70	71.31
Packaging design	4.40	4.26	16.62	70.84
Conformity of product image with the real product	4.41	4.10	16.63	68.12
Completeness of information on the packaging	4.56	4.29	17.23	73.91
Varieties' Excellence	4.27	4.12	16.11	66.35
Conformity of the results to the expectation	4.44	4.09	16.75	68.54
Total	26.50	25.13		419.07

Source: Primary Data Processed (2023)

The *Tangible* dimension is "very important" importance (4.3-5.0). Therefore, the completeness of the information on the packaging must be prioritized with a value of 4.56. The yield conformity shows a score of 4.44, and design images of 4.42. conformity of product images with the actual product of 4.41, and then packaging design with a value of 4.40. The indicator of the *Tangible* dimension, which has an "important" level (3.5-4.2), is the superiority of varieties with a value of 4.27. The completeness of the information on the packaging is considered satisfactory, with scores ranging from 3.5-4.2. The formula used in the measurement

$$CSI = \frac{\sum_{i=1}^p MIS}{HS} \times 100\%$$

resulted in a higher customer satisfaction score than the satisfaction index for the *Tangible* dimension of 83.81. It can be concluded that customer satisfaction on the *Tangible* dimension is regarded high. The consumer satisfaction for the *Reliability* dimension toward its indicators is shown in Table 8.

Table 8. Customer Satisfaction Index for the Reliability Dimension

Indicator	MIS	MSS	WF	WS
Product price compared to competitors	4.34	4.19	12.47	52.26
Satisfaction in product selection	4.40	4.19	12.64	52.98
Promotion quality	4.42	4.19	12.69	53.20
Amount of promotional content	4.14	3.55	11.87	42.18
Promotion quantity	4.41	4.11	12.66	52.04
Seed vigor	4.42	4.11	12.68	52.13
Resistance to pests and diseases	4.22	3.92	12.12	47.50
Yield satisfaction	4.49	4.14	12.88	53.28
Total	34.84	32.40		405.57

Source: Primary Data Processed (2023)

Indicators under the Reliability dimension are considered “very important”, with scores ranging from 4.3-5.0; yield satisfaction indicator (4.49), seed vigor (4.42), promotion quality (4.42), promotion quantity (4.41), satisfaction in product selection (4.40), and product price compared to competitors (4.34). Meanwhile, the indicators for pest and disease resistance (4.22) and the number of promotional materials (4.14) are "important", with a score range of 3.5-4.2. Scores ranging from 3.5-4.2 are obtained by eight indicators: product prices compared to competitors (4.19), satisfaction in choosing a product (4.19), promotion quality (4.19), yield satisfaction (4.14), promotion quantity (4.11), seed vigor (4.11), resistance to pests and diseases (3.92), and the number of promotional materials (3.55).

The formula $CSI = \frac{\sum_{i=1}^p MIS}{HS} \times 100\%$ used to measure the CSI for Reliability dimension resulted in a score of 81.11 (Good). Therefore, the customers' satisfaction seen from the Reliability dimension is considered satisfactory. The satisfaction indices for the Responsiveness dimension are shown in Table 9.

Table 9. CSI Index for the Responsiveness Dimension

Indicator	MIS	MSS	WF	WS
Swiftness in complaint verification	4.41	3.98	50.12	199.39
Swiftness in complaint resolution	4.38	3.95	49.89	196.81
Total	8.79	7.93		396.20

Source: Primary Data Processed (2023)

Indicators under the Responsiveness dimension are categorized "very important", including the swiftness of complaint verification (4.41), and the swiftness of complaint resolution (4.38). Similarly, the satisfaction level is categorized "satisfying" (3.5-4.2) for both indicators: the swiftness complaints verification (3.98) and the swiftness of complaints resolution (3.95).

The formula $CSI = \frac{\sum_{i=1}^p MIS}{HS} \times 100\%$ was used to measure the customer satisfaction index for the Responsiveness dimension, resulting in a score of 79.24 (Borderline). In general, the satisfaction with services on the Responsiveness dimension is moderate. The scores of indicators of the Assurance dimension are presented in Table 10.

Table 10. CSI for Assurance Dimension

Indicator	MIS	MSS	WF	WS
Easiness to obtain the product	4.44	4.23	11.07	46.82
Intensity of officer visits	4.43	4.25	11.04	46.97
Seed physical purity	4.44	4.13	11.08	45.75
Seed growth rate	4.44	4.10	11.07	45.34
Technical cultivation competence	4.47	4.26	11.14	47.49
Technical communication competence	4.49	4.32	11.21	48.44
Officers' Presence	4.52	4.37	11.27	49.29
Officers' competence and credibility	4.44	4.36	11.08	48.35
Seed genetic purity	4.43	4.11	11.04	45.35
Total	40.10	38.13		423.8

Source: Primary Data Processed (2023)

The indicators of the Assurance dimension are categorized as having "very important" roles, with scores ranging from 4.3-5.0. The presence of officers scored 4.52, technical communication competence of 4.49, technical cultivation competence of 4.47, ease of obtaining the product of 4.44, and seed physical purity 4.44. The seed growth rate was 4.44, officers' competence and credibility were 4.44, the intensity of visit was 4.43 and the seed genetic purity was 4.43. The level of customers' satisfaction shows "very satisfied" on the indicator of the presence of officers with a value of 4.37, officers' competence and credibility of 4.36 and technical communication skills of 4.32. Some indicators are within the "satisfied" category with scores ranging from 3.5-4.2, including the technical cultivation competence of 4.26, intensity of officer visits 4.25, and the ease of obtaining products at 4.23. the seed physical purity of 4.13, seed genetic purity of 4.11 and seed growth rate of 4.10. The CSI measurement was done using the formula

$$CSI = \frac{\sum_{i=1}^p MIS}{HS} \times 100\%$$

, resulting in a score of 84.76 for the CSI of Assurance Dimension (Very Good) or satisfying. The consumer satisfaction for the Empathy dimension is presented in Table 11.

Table 11. CSI for Empathy Dimension

Indicator	MIS	MSS	WF	WS
Complaint handling	4.38	3.99	49.76	198.77
Officers' interaction and communication	4.42	4.29	50.23	215.60
	8.80	8.28		414.37

Source: Primary Data Processed (2023)

The Empathy dimension is regarding having a "very important" role for scoring between 4.3-5.0 in all of its indicators, namely the officers' interaction and communication (4.42) and complaint handling (4.38). As shown at the level of satisfaction, those indicators scored between 3.5 – 4.2 (Satisfying) on both indicators, namely officers' interaction and communication 4.29 and complaint handling 3.99. The formula $CSI = \frac{\sum_{i=1}^p MIS}{HS} \times 100\%$ was used to calculate the CSI, resulting in a score of 82.87 (Good). Hence, customer satisfaction on the Empathy dimension is considered

satisfying. The scores of consumer satisfaction in five for each dimension can be seen in Table 12.

Table 12. CSI based on the Five Dimensions

Dimension	MIS	MSS	WF	WS
<i>Tangible</i>	4.56	4.19	20.59	86.24
<i>Reliability</i>	4.34	4.05	19.59	79.35
<i>Responsiveness</i>	4.41	3.96	19.87	78.73
<i>Assurance</i>	4.44	4.24	20.01	84.82
<i>Empathy</i>	4.42	4.14	19.94	82.62
Total	21.28	20.51		410.74

Source: Primary Data Processed (2023)

The five dimensions are categorized “very important”, with Tangible dimension obtaining a score of 4.56, Assurance (4.44), Empathy (4.42), Responsiveness (4.41) and Reliability (4.34). All of the dimensions show a “satisfying” level of satisfaction: Assurance dimension (4.24), Tangible (4.19), Empathy (4.14), Reliability (4.05) and Responsiveness (3.96). CSI was calculated using the same formula as in Table 12, resulting in a score of 82.35 (Good). Consumer satisfaction with the service company is considered high (satisfied), with interpretations presented in Table 13.

Table 13. The Interpretation of CSI Outcomes

Dimension	CSI	Interpretation
<i>Tangible</i>	83.81	<i>Good</i>
<i>Reliability</i>	81.11	<i>Good</i>
<i>Responsiveness</i>	79.24	<i>Borderline</i>
<i>Assurance</i>	84.76	<i>Very Good</i>
<i>Empathy</i>	82.87	<i>Good</i>
Total	82.35	<i>Good</i>

Source: Primary Data Processed (2023)

The assurance dimension is categorized “Very Good”, implying that the indicators under this dimension are considered very satisfactory. The Tangible, Reliability and Empathy dimensions are categorized “Good”. The customers consider the indicators of Tangible, Reliability and Empathy dimensions satisfactory. However, the Responsiveness dimension is under the “Borderline” category, showing that some customers find indicators within the dimension satisfactory, and others are dissatisfied. Reports on customer satisfaction are available on PT Benih Citra Asia's online portal, which can be accessed in real-time. In general, distributors and end customers are satisfied with the products and services of the company.

Based on the Customer Satisfaction Index, the user customer satisfaction level is 82.35 (Good), where customers find the products and services satisfactory. [2] in his study also found a Customer Satisfaction Index of 82.52%, where farmers were generally very satisfied with sweet corn seed products. Customers in this study are generally satisfied with the services and products of PT. Benih Citra Asia, yet it does not imply that every customer is satisfied. It is necessary to improve customer satisfaction in the future by improving the dimensions and attributes that fall under the less satisfactory category. Improvement can be carried out gradually based on the priority order, starting with the

dimension that scored the lowest of 79.24%, where customers are between satisfied and dissatisfied with this dimension.

Responsiveness is the willingness to hear or respond appropriately. Providing fast and responsive services is necessary, and such service is reflected in the swiftness of complaint verification, swiftness in complaint resolution, and attention of the officers in handling complaints and the responses of the officers. The swiftness of complaint verification is regarded as very important, as [7] stated that responsiveness plays an important role in service quality, especially the swiftness and preciseness in providing services and handling complaints.

Complaint verification speed at PT. Citra Asia seeds are considered unsatisfactory for taking a long time to proceed. Customers have to wait for their complaints to be forwarded to the head office of PT. Asian Citra Seed. The complaints will be processed through several steps, including tracing and seed testing to obtain the proof. The complaints will be processed when the proof is obtained, and customers will be given replacement seeds or compensation. This lengthy process raises dissatisfaction among customers. Hence, improvement and special attention should be given to the complaint verification process to increase customer satisfaction. A complaint case once occurred when seeds had to be verified by the Quality Assurance division to determine whether the complaint was valid through laboratory tests or cultivation in the exact land lot where the seeds the customers complained about were planted. This process needs to be made more efficient.

3.3 The Results of IPA (*Importance Performance Analysis*)

IPA analysis was conducted to identify the service attributes that need improvement. Table 14 presents the average score of each attribute obtained from the IPA analysis.

Table 14. The Indicators in *Importance Performance Analysis* regarding end-customer satisfaction

Attributes	Indicator	-	-
X01	Completeness of information on the packaging	4.29	4.56
X02	Product price to competitor	4.19	4.34
X03	Varieties' Excellence	4.12	4.27
X04	Packaging design	4.26	4.40
X05	Easiness to obtain the product	4.23	4.44
X06	Satisfaction in product selection	4.19	4.40
X07	Design image on the packaging	4.27	4.42
X08	Amount of promotional content	3.55	4.14
X09	Promotion quality	4.11	4.41
X10	Promotion quality	4.19	4.42
X11	Seed physical purity	4.13	4.44
X12	Seed vigor	4.11	4.42
X13	Seed growth rate	4.10	4.44
X14	Seed genetic purity	4.11	4.43

Attributes	Indicator	-	-
X15	Resistance to pests and diseases	3.92	4.22
X16	Conformity of product image with the real product	4.10	4.41
X17	Conformity of yield to the market	4.09	4.44
X18	Yield satisfaction	4.13	4.49
X19	Technical cultivation competence	4.26	4.47
X20	Intensity of officer visits	4.25	4.43
X21	Interaction and communication of the officers	4.29	4.42
X22	Officers' competence and credibility	4.36	4.44
X23	Officers' Presence	4.37	4.52
X24	Technical communication competence	4.32	4.49
X25	Swiftness in complaint verification	3.98	4.41
X26	Swiftness in complaint resolution	3.94	4.38
X27	Complaint handling	3.99	4.38
	Average	4.14	4.41

Source: Primary Data (2023)

The significance of Importance Performance Analysis (IPA) measurement of user satisfaction is described in a Cartesian diagram with X and Y axis diagrams. The X axis is the average score of the level of satisfaction, while the Y axis is the average score of the importance level. The scores of each attribute were then combined to group the 27 service quality attributes into four quadrants. The first quadrant is on the upper left, the second quadrant is on the upper right, quadrant three is on the lower left, and quadrant four is on the lower right. The axes form two perpendicular lines intersecting at the point coordinates (4.14 ; 4.41) and divide the Cartesian diagram into four quadrants. The position of each attribute in the four quadrants can be used as a tool to increase customer satisfaction, as shown in Figure 2.

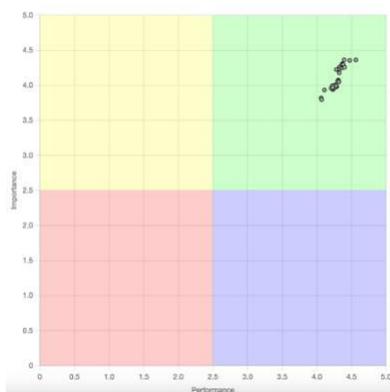


Fig. 2. Cartesius Diagram of Customer Satisfaction Source : Primary Data (2023)

Figure 2 shows, in general, that all indicators are in quadrant B/II position (maintain achievement), which is an area that contains factors that are considered important by

customers. The 27 attributes in the B/II quadrant are the major aspects that can increase customer satisfaction. The gap in the diagram can be resolved by prioritizing the aspect with the lowest score. Indicators in the quadrant B/II need to be maintained. However, the satisfaction index score based on CSI is regarded as “Good”. Thereby, improvement in this aspect can make it regarded “Very Good” or even “Excellent”. The priority sequence recommended for immediate action steps to increase user customer satisfaction is as follows.

Table 15. The priority order based on IPA analysis

Priority	Attributes	Indicator	IPA
1	X08	Amount of promotional content	-0.59
2	X26	Swiftness in complaint resolution	-0.44
3	X25	Swiftness in complaint verification	-0.43
4	X27	Complaint handling	-0.38
5	X18	Yield satisfaction	-0.35
6	X17	Conformity of yield to the market	-0.35
7	X13	Seed growth rate	-0.34
8	X14	Seed genetic purity	-0.32
9	X11	Seed physical purity	-0.32
10	X16	Conformity of product image with the real product	-0.31
11	X12	Seed vigor	-0.31
12	X15	Resistance to pests and diseases	-0.31
13	X09	Promotion quality	-0.30
14	X01	Completeness of information on the packaging	-0.27
15	X10	Promotion quality	-0.23
16	X06	Satisfaction in product selection	-0.21
17	X05	Easiness to obtain the product	-0.21
18	X19	Technical cultivation competence	-0.20
19	X20	Intensity of officer visits	-0.18
20	X24	Technical communication competence	-0.17
21	X07	Design image on the packaging	-0.15
22	X03	Varieties' Excellence	-0.15
23	X02	Product price to competitor	-0.15
24	X23	Officers' Presence	-0.15
25	X04	Packaging design	-0.14
26	X21	Interaction and communication of the officers	-0.13
27	X22	Officers' competence and credibility	-0.08

Source: Primary Data (2023)

Customer satisfaction is the top priority to be improved as it shows a of -0.59 for X08 Amount of promotional content. The scores for other attributes are as follows: X26 Swiftness of complaint resolution (-0.44), X25 Swiftness of complaint verification (-0.43), X27 Complaint handling (-0.38), X18 Yield satisfaction (-0.35), X17 Conformity of the yield to the market (-0.35), X13 Seed growth rate (-0.34), X14 Seed genetic purity (-0.32), X11 Seed physical purity (-0.32), X16 Conformity of product images with real products (-0.31), X12 Seed vigor (-0.31), X15 Pest and disease resistance (-0.31), X09 Quantity of promotion (-0.30), X01 Completeness of information on packaging (-0.27), X10 Quality of promotion (-0.23), X06 Satisfaction in product selection (-0.21), X05 Ease of obtaining product (-0.21), X19 Cultivation technical ability (-0.20), X20 Intensity of officer visits (-0.18), X24 Technical communication ability (-0.17), X07 Image design on packaging (-0.15), X03 Superiority of varieties (-0.15), X02 Product price to competitors (-0.15), X23 the Presence of officers (-0.15), X04 Packaging design (-0.14),

X21 Officer interaction and communication score (-0.13), and X22 Officer competence and credibility score (-0.08).

Importance Performance Analysis is very useful for evaluating the level of satisfaction performance that customers deem important and the satisfaction levels of the customers. To increase customer satisfaction, companies need to improve service attributes' performance by increasing service quality. However, performance improvement is only sometimes proportional to customer satisfaction. Therefore, companies need to identify the attributes that should be prioritized to make the performance more effective and efficient.

The analysis of the five dimensions of service quality using the Importance Performance Analysis resulted in a Cartesian diagram, where end customers are reflected in the B/II quadrant position, indicating that most customers are satisfied. Yet, their satisfaction can be further improved by improving service. The amount of promotional content appeared as the top-priority attribute that should be addressed first.

The customers perceived the current promotional content as insufficient and dissatisfied with it. However, maintaining the amount of promotional content low is a cost-efficient strategy. The company did not create massive promotions because the marketing of the seeds is mainly done behind closed doors through with the distributors. However, end customers find the necessity to see more promotional content because promotional content not only has educational purposes but also carries product branding. It is crucial that the company explore promotional content, which can be enhanced while maintaining cost-efficient and obtaining higher customer satisfaction. Purbobinuko and [10] found that the reliability dimension scored 75.53%.

4 Conclusion

The level of interest and satisfaction measurement using the customer satisfaction index (CSI) showed a CSI score of 82.35% (Good), where the Tangible indicator scored 83.81% and Reliability scored 81.11% are categorized Good. The Responsiveness is within the borderline (79/24), Assurance 84.76% (Very Good), and Empathy 82.87% (Good). The Assurance dimension shows the highest satisfaction index score, while the Responsiveness dimension shows the lowest. The importance-performance analysis (IPA) method shows that 27 attributes/indicators are in quadrant B/II, implying PT. Benih Citra Asia must be able to maintain its customer satisfaction level.

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