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Analysis of User Satisfaction Level on Study Abroad Guidance Website Using Customer Satisfaction Index (CSI) and Importance Performance Analysis (IPA) Methods

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Abstract— *Schoters is an Education Technology (Edutech) company for language courses and studies abroad guidance which was founded in 2018. This company has helped thousands of Indonesian students to be accepted at leading universities in more than 40 countries including the United States, United Kingdom, China, and more. Schoters will certainly receive assessments or feedback from service users to be able to continue to run and improve guidance and consulting services. This assessment will result in user satisfaction when using existing services. Based on the results of user satisfaction, information will appear that companies can use to improve the quality of their services on digital media. Analysis of the level of satisfaction of Schoters website users is needed to determine the level of satisfaction. The methods used to measure the level of user satisfaction include the Customer Satisfaction Index (CSI) and Importance Performance Analysis (IPA). Research using the CSI method yields a value of 83.64%, which means that the website's performance is in the "Very Satisfied" category. For the IPA method, it was found that all statement attributes for each dimension had a "Very Appropriate" level of conformity with percentage values in the range of 80%-100%. This means that the suitability between expectations and website performance that users feel at this time is very suitable or satisfied with these attributes.*

Keywords— *Website Satisfaction, Customer Satisfaction Index, and Importance Performance Analysis.*

I. INTRODUCTION

The development of information technology is happening now making more and more new fields of work appear in various industrial sectors. Someone's interest in continuing higher education is increasing because to continue adapt all changes and meet the need for quality human resources. For some people, taking higher education at home is enough, but many of them choose to continue their education abroad.

Choosing abroad to continue education is not without reason, because there are several reasons. For example, want to build a better career, select a variety of majors, to experience new experiences. To help Indonesian students gain access to information and knowledge about higher education abroad, various guidance and consultation platforms have emerged online and offline for study abroad, one of them is Schoters.

Schoters is a company in Education Technology (Edutech) language tutoring and study abroad which was founded in 2018. This company has helped thousands of Indonesian students to be accepted at leading universities in more than 40 countries including the United States, England, and China. Schoters will certainly receive feedback from service users to be able to continue to run and improve servicing guidance services consultation. This feedback can be seen from the use of the website owned by Schoters. Users will access information and buy services through the website www.schoters.com/id.

This feedback will result in user satisfaction when using existing services. Based on the results of user satisfaction, information will appear that companies can use to improve the quality of their services on digital media. Analysis of the level of satisfaction of Schoters website users is needed to determine the level of satisfaction. There are several methods used to measure the level of user satisfaction, including the Customer Satisfaction Index (CSI) and Importance Performance Analysis (IPA).

This research will use the CSI and IPA methods because they have advantages, namely being able to measure and analyze satisfaction by paying attention to expectations and comparing performance with expectations as a whole using a percentage scale (Amri, 2020). Website user satisfaction is the result of a user's assessment of what is expected when using a particular website. User response to the website is a subjective criterion related to how useful the information provided is.

II. LITERATURE REVIEW

A. Customer Experience

Service user experience or customer experience, is the emotion that is felt when interacting with the company. This often makes service users remember all the interactions that occur in them. Ease of use, navigation, and search features are

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critical to providing the best experience, both on the web and in the mobile application (Lafreniere Daniel, 2019).

B. *User Satisfaction*

Satisfaction is freedom from discomfort and a positive attitude towards product use or a subjective measure of how users feel about using the system (Istiana in Ferry, 2021). According to Kotler (2004) in Ferry (2021:53), there are four (4) methods that can be used to measure user satisfaction, among them: Complaint and Suggestion System, Mystery Shopping, Lost Customer Analysis, and User Satisfaction Survey.

C. *Customer Satisfaction Index (CSI) Method*

Customer Satisfaction Index (CSI) is an approach based on the conversion of the satisfaction value that customers feel when faced with the needs/expectations of company services (Pribadiyono, 2023). CSI is a method that uses an index to measure the level of customer satisfaction based on certain attributes. CSI is needed to determine the overall level of user satisfaction by taking into account the level of importance of the attributes of a product or service.

Examples of the use of the CSI method can be carried out for service improvement, employee motivation, and giving bonuses as an illustration to represent the level of user satisfaction. This method will provide an overall assessment of the index and level of satisfaction with an approach that considers the level of importance of the attributes being measured (Candrianto, 2021).

D. *Importance Performance Analysis (IPA) Method*

Important Performance Analysis (IPA) is an analytical technique used to identify what important performance factors an organization must show to meet the satisfaction of company service users (Mudjanarko Sri Wiwoho, 2020). At present, the use of the IPA method has expanded to research on hospital services, tourism, and schools, to the analysis of the performance of the public bureaucracy (government).

The use of the IPA method requires measuring the level of conformity to find out how much the user is satisfied with the company's performance and how much the service provider understands what the user wants from the company's services. The end result of this method will be mapping into four (4) quadrants for all variables that affect service quality.

III. RESEARCH METHOD

A. *Research Stages*

The research stages will explain the statements used in the questionnaire, population and sample calculations, validity tests, and reliability tests. For more details, the research stages regarding the analysis of the level of satisfaction of Schoters website users with the CSI and IPA methods will be explained using the flowchart in Figure 1.

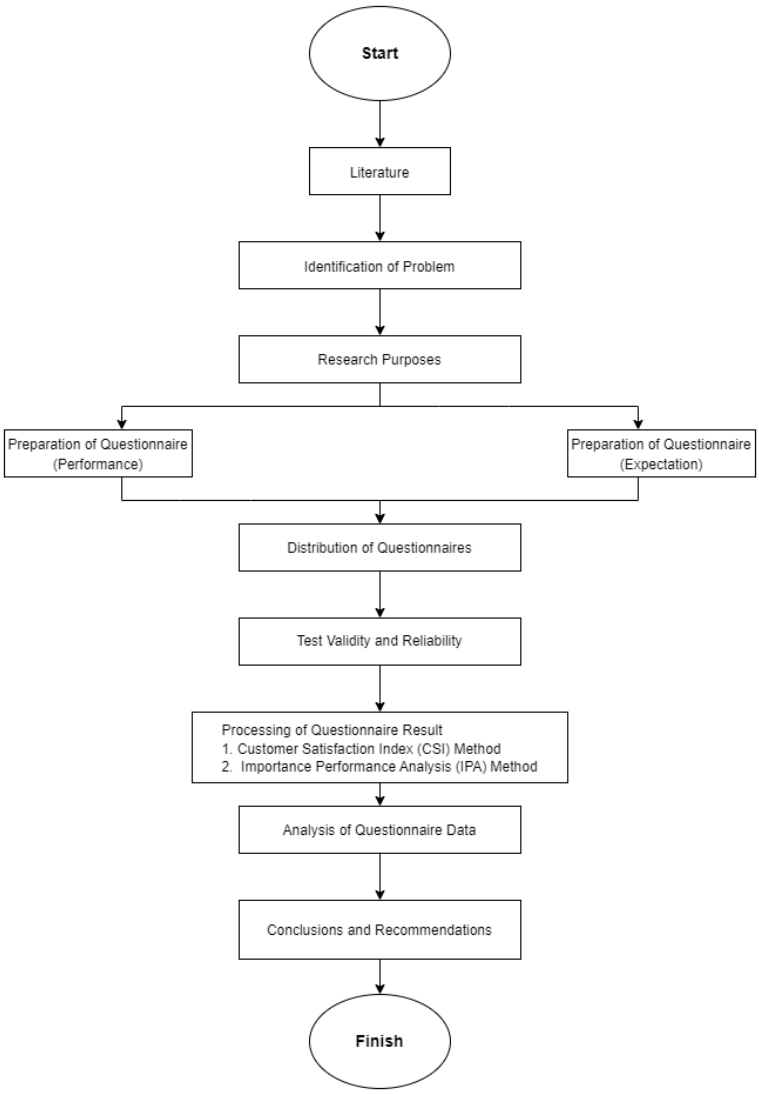

Fig. 1. Research Stages

B. *Data Collection Technique*

This study used a quantitative method with data collection techniques, namely questionnaires. To obtain data, questionnaires will be distributed to Schoters' Instagram followers. To filter out respondents who have not and have used the Schoters website, the initial question will be "Have you ever used the Schoters website". If the respondent answered "Yes", then they could continue filling out the questionnaire. If "No", then filling out the questionnaire will end. Limitations of respondents in this study, namely:

a. The respondent's domicile is in the territory of Indonesia
b. The age of the respondents was between 13 to 44 years
c. The questionnaire only contains services/features on the Schoters website

The data collected is primary data, which is obtained directly from the research subjects. The population was taken from the number of Schoters' Instagram followers, which amounted to 968,996 as of May 23, 2023. The sample was obtained based on the Slovin formula, as in Figure 2.

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

$$n = \frac{968.996}{1 + 968.996(0,1)^2}$$

$$n = \frac{968.996}{1 + 968.996(0,1)^2}$$

$$n = 99,9896811049$$

Fig. 2. Sample Based on The Slovin Formula

If rounded, the questionnaire will be distributed to 100 people who have used the Schoters website. The statements used in the questionnaire refer to previous research conducted by Sahara Emi, 2022. There are 5 dimensions of the statement, namely usability, information quality, assurance, reliability, and data accessibility.

Each statement will measure the level of satisfaction using a Likert scale. The scores used in this study are described in Table I.

TABLE I. Score Likert Scale

Information	Score Likert Scale
Performance	
Very Satisfied	5
Satisfied	4
Satisfied Enough	3
Dissatisfied	2
Very Dissatisfied	1
Expectation	
Very Important	5
Important	4
Sufficiently Important	3
Unimportant	2
Very Unimportant	1

C. Customer Satisfaction Index (CSI) Method

The steps for calculating CSI will be explained as follows:

1. Determine the Mean Importance Score (MIS) and Mean Satisfaction Score (MSS). MIS data was taken based on the average results of the performance questionnaire and MSS was taken based on the average results of the expectation questionnaire.
2. Determine Weight Factors (WF). WF data is taken based on the average of each questionnaire item divided by MIS.
3. Determine Weight Score (WS). WS data is taken based on the average of each WF multiplied by each MSS questionnaire item.
4. Determine Total Weight (WT). WT data is taken based on the sum of all WS.
5. Define CSI. CSI data is taken based on WT divided by 5.

The CSI calculation will produce a CSI value with an index value in Table II.

TABLE II. CSI Index Value Criteria

No	CSI Value	CSI Criteria
1	0,81 - 1,00	Very Satisfied
2	0,66 - 0,80	Satisfied
3	0,51 - 0,65	Quite Satisfied
4	0,35 - 0,50	Dissatisfied
5	0,00 - 0,34	Very Dissatisfied

D. Importance Performance Analysis (IPA) Method

This method focuses on improving service quality in terms of strategy because the results are displayed in quadrants. Results with this form will be easily interpreted by the company in making decisions. The reason is that each quadrant is interrelated which makes it easier to create a specific strategy to allocate resources appropriately. The division of the IPA method quadrants is in Figure 3.

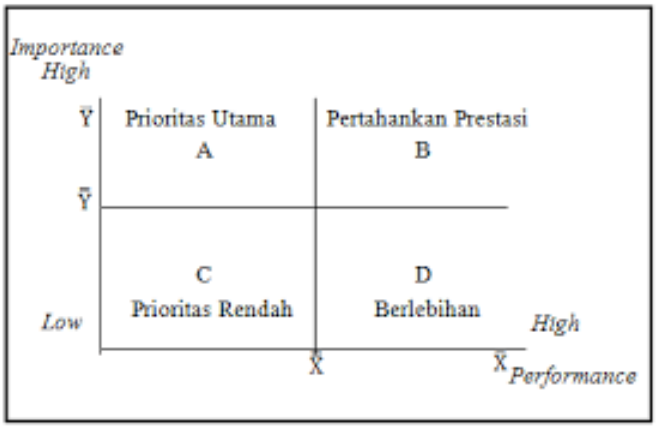

Fig. 3. The IPA Method Quadrant

In Figure 3, it is divided into four (4) quadrants and each has its own priority. For explanation, namely:

a. Quadrant 1 is the main priority which contains important factors by the user. But in reality, this factor has not met expectations, so this quadrant variable must be increased.
b. Quadrant 2 contains factors that are considered important and also factors that are considered by users according to their level of satisfaction. The satisfaction level of this quadrant variable must be maintained because it will make the product or service superior in the eyes of the user.
c. Quadrant 3 is a low priority. This quadrant contains factors that are considered less important by users and whose performance is not too special.
d. Quadrant 4 contains factors that are considered less important by users but are felt to be too much. It is better to reduce the variables in this quadrant so that the company can save costs.

IV. Result And Discussion

A. Data Collection

The results of the questionnaire collection obtained criteria, such as the domicile of the respondent and the age of the respondent. This criterion adequately describes the distribution of the audience from Schoters' social media. The following will describe the criteria of respondents based on domicile in Table III.

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TABLE III. Domicile of Respondents

Domicile	Amount	Percentage
Jawa	73	73%
Sumatera	12	12%
Kalimantan	5	5%
Sulawesi	4	4%
Maluku Utara	2	2%
Papua	1	1%
DIY	1	1%
Bengkulu	1	1%
Lampung	1	1%
Total	**100**	**100%**

The following will describe the criteria for respondents based on age in Table IV.

TABLE IV. Age of Respondents

Age	Amount	Percentage
13-17	6	6%
18-24	84	84%
25-34	8	8%
35-44	2	2%
45-54	0	0%
Total	**100**	**100%**

B. Validity Test

The instrument will be valid if it can measure the desired object and is able to reveal data from the variables studied (Riduwan and Sunarto in Doly Pranoto, 2022). The result validity test of performance data can be seen in Table V.

TABLE V. Results Validity Test of Performance and Expectation Data

	Performance Data			Expectation Data		
	r count	r table 10% (N=100)	Validity	r count	r table 10% (N=100)	Validity
Usability						
X1	0,790	0,1654	Valid	0,713	0,1654	Valid
X2	0,758	0,1654	Valid	0,829	0,1654	Valid
X3	0,716	0,1654	Valid	0,751	0,1654	Valid
X4	0,781	0,1654	Valid	0,853	0,1654	Valid
X5	0,711	0,1654	Valid	0,801	0,1654	Valid
Information Quality						
X6	0,711	0,1654	Valid	0,830	0,1654	Valid
X7	0,762	0,1654	Valid	0,890	0,1654	Valid
X8	0,793	0,1654	Valid	0,791	0,1654	Valid
X9	0,781	0,1654	Valid	0,756	0,1654	Valid
X10	0,74	0,1654	Valid	0,776	0,1654	Valid
Assurance						
X11	0,768	0,1654	Valid	0,769	0,1654	Valid
X12	0,790	0,1654	Valid	0,796	0,1654	Valid
X13	0,764	0,1654	Valid	0,856	0,1654	Valid
X14	0,743	0,1654	Valid	0,792	0,1654	Valid
X15	0,843	0,1654	Valid	0,812	0,1654	Valid
Reliability						
X16	0,700	0,1654	Valid	0,797	0,1654	Valid
X17	0,722	0,1654	Valid	0,790	0,1654	Valid
X18	0,793	0,1654	Valid	0,848	0,1654	Valid
X19	0,785	0,1654	Valid	0,755	0,1654	Valid
X20	0,782	0,1654	Valid	0,688	0,1654	Valid
Data Accessibility						
X21	0,730	0,1654	Valid	0,813	0,1654	Valid
X22	0,857	0,1654	Valid	0,842	0,1654	Valid
X23	0,662	0,1654	Valid	0,766	0,1654	Valid
X24	0,796	0,1654	Valid	0,808	0,1654	Valid
X25	0,708	0,1654	Valid	0,715	0,1654	Valid

Based on the table of validity test results in Table V, it is known that the calculated r-value of all questionnaire statements based on the five dimensions is more than the r table value, both for performance/perception data and expectation data. So, it can be stated that all questionnaire statement items are valid or feasible to use for research.

C. Reliability Test

The reliability test is used to determine how consistently an instrument can be trusted or relied upon. Reliability testing only uses statements that are valid or feasible to use based on validity tests. A variable is declared reliable/reliable if the answers to statements are always consistent (Azwar in Doly Pranoto, 2022). If the Cronbach's Alpha value is > 0.60, then the instrument is said to be reliable. For the results of reliability on the usability dimensions of performance are shown in Table VI.

TABLE VI. Results Reliability Test of Performance and Expectation Data

No	Dimension (n=number of item)	Performance		Expectation	
		Cronbach's Alpha	Reliability	Cronbach's Alpha	Reliability
1	Usability (n = 5)	0,814	Reliable	0,849	Reliable
2	Information Quality (n = 5)	0,809	Reliable	0,867	Reliable
3	Assurance (n = 5)	0,839	Reliable	0,862	Reliable
4	Reliability (n = 5)	0,802	Reliable	0,821	Reliable
5	Data Accessibility (n = 5)	0,805	Reliable	0,847	Reliable

Based on Table VI, the results of the reliability test on all dimensions yield Cronbach's alpha values above 0.60, both for performance and expectation data. So it can be stated that all questionnaire statements are reliable or feasible to use in research.

D. Results of The Customer Satisfaction Index (CSI) Method

This method is used to determine the overall level of service satisfaction by looking at the level of reality of each statement variable. To find out the CSI value, the following steps can be taken:

1. Determining the Mean Importance Score (MIS). MIS is the average value of the level of expectation expected by website users for each statement.
2. Determine the Mean Satisfaction Score (MSS). MSS is the average value of the level of performance/perception felt by website users for each statement.
3. Determine Weight Factors (WF). WF is obtained from the MIS value per attribute divided by the total MIS of all attributes.
4. Determine Weight Score (WS). WS is obtained by multiplying the WF and MSS values.
5. Determine Total Weight (WT). WT is obtained from the sum of all WS values.
6. Determines the CSI value. This value is obtained from

WT divided by 5.

The following is a calculation of the CSI method from the respondent's data, contained in Table VII.

TABLE VII. Analysis of Satisfaction Level with CSI

Dimension	MSS	MIS	WF	WS
Usability	4,27	4,46	4,00	17,10
	4,36	4,39	3,94	17,20
	4,54	4,54	4,08	15,51
	4,07	4.33	3,89	15,82
	4,25	4.33	3,89	16,52
Information Quality	4,12	4.40	3,95	16,28
	4,20	4,46	4,00	16,82
	4,33	4.53	4,07	17,61
	4,14	4,38	3,93	16,28
	4,46	4,63	4,16	18,54
Assurance	4,15	4,45	4,00	16,58
	4,34	4,63	4,16	18,04
	3,98	4,48	4,02	16,01
	4,24	4,46	4,00	16,98
	4,10	4,49	4,03	16,53
Reliability	4,19	4,53	4,07	17,04
	4,09	4,41	3,96	16,20
	4,04	4,42	3,97	16,03
	3,55	4,05	3,64	12,91
	4,14	4,60	4,13	17,10
Data Accessibility	4,12	4,38	3,93	16,20
	4,15	4,48	4,02	16,69
	4.23	4,52	4,06	17,17
	3,79	4,37	3,92	14,87
	4,37	4,65	4,18	18,25
Total	111,37			
WT				417,30
CSI (%)				83,64%

In Table VII, calculations have been made for the MIS, MSS, WF, WS, WT values, and finally the CSI values. Based on the CSI calculation results, the value is 0.83 or 83.64%. So it can be said that the satisfaction level of Schoters website users is generally in the "Very Satisfied" category. To see which dimensions are the top priority for improvement and which dimensions have good service, another analysis needs to be carried out using the Important Performance Analysis (IPA) method.

E. Results of the Important Performance Analysis (IPA) Method

The stages of the IPA method consist of calculating performance scores and expectation scores, calculating the level of conformity, and analyzing Cartesian diagrams. An example of the calculation is as follows:

1. Calculate performance score and expectation score
   Performance attribute 1 = 5+4+5+4+...+5 = 427
   Expectations of attribute 1 = 5+5+5+4+...+5 = 446
2. Calculating the level of conformity
   Attribute suitability level 1
   = (attribute 1 performance score : attribute 1 expectation score) x 100%
   = (427 : 446) x 100%
   = 95,74%

The level of conformity aims to determine the percentage of conformity between expectations and what the user feels at this time. The higher the percentage level of conformity, the higher the user satisfaction with this attribute (Sihombing in Muhamad Zaini, 2021). The criteria for determining the suitability level of performance and expectations are shown in Table VIII.

TABLE VIII. Conformity Level Criteria for Expectations on Performance

Conformity Level	Suitability Range
Very Appropriate	80%-100%
Appropriate	70%-79%
Quite Appropriate	60%-69%
Not Appropriate	50%-59%
Very Not Appropriate	40%-49%

Source: Sihombing (2006) dalam Muhamad Zaini (2021)

Following are the results of data processing for the suitability level in Table IX.

TABLE IX. Conformity Level

No	Dimensions	Statement	Performance Level (Ki)	Expectation Level (Hi)	Conformity Level (Tk)
1	Usability	X1	427	446	95,74%
2		X2	436	439	99,32%
3		X3	454	454	100%
4		X4	407	433	93,99%
5		X5	425	433	98,15%
6	Information Quality	X6	412	440	93,94%
7		X7	420	446	94,17%
8		X8	433	453	95.58%
9		X9	414	438	94,52%
10		X10	446	463	96,33%
11	Assurance	X11	415	445	93,26%
12		X12	434	463	93,74%
13		X13	398	448	88,84%
14		X14	424	446	95,1%
15		X15	410	449	91,31%
16	Reliability	X16	419	453	92,49%
17		X17	409	441	92,74%
18		X18	404	442	91,40%
19		X19	355	405	87,65%
20		X20	414	460	90%
21	Data Accessibility	X21	412	438	94,06%
22		X22	415	448	92,63%
23		X23	423	452	93,58%
24		X24	379	437	86,73%
25		X25	437	465	93,98%

All of the statement attributes have a "Very Appropriate" level of conformity. The average performance of each attribute is the basis for determining whether the performance of the Schoters website is good or not. This stage was carried out before being analyzed using a Cartesian diagram. The following is an example of a calculation to find the average attribute value 1:

Average performance: $\bar{Y} = \frac{\Sigma Yi}{n} = \frac{5+4+5+4+...+5}{100} = 4,27$

Average expectation: $\bar{x} = \frac{\Sigma Xi}{n} = \frac{5+5+5+4+...+5}{100} = 4,46$

The following is an information table for each performance average and expectation average per statement attribute, found in Table X.

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TABLE X. Average Performance Level and Expectation Level

No	Dimension	Attribute	Average Performance	Average Expectation
1	Usability	X1	4,27	4,46
2		X2	4,36	4,39
3		X3	4,54	4,54
4		X4	4,07	4,33
5		X5	4,25	4,33
6	Information Quality	X6	4,12	4,40
7		X7	4,20	4,46
8		X8	4,33	4,53
9		X9	4,14	4,38
10		X10	4,46	4,63
11	Assurance	X11	4,15	4,45
12		X12	4,34	4,63
13		X13	3,98	4,48
14		X14	4,24	4,46
15		X15	4,10	4,49
16	Reliability	X16	4,19	4,53
17		X17	4,09	4,41
18		X18	4,04	4,42
19		X19	3,55	4,05
20		X20	4,14	4,60
21	Data Accessibility	X21	4,12	4,38
22		X22	4,15	4,48
23		X23	4,23	4,52
24		X24	3,79	4,37
25		X25	4,37	4,65
Total			104,22	11,37
Average Score			4,17	4,45

Based on Table X, an average score for performance is 4.17 and an average score for expectations is 4.45. This result is the midpoint used in the Cartesian diagram and to determine whether or not and the importance or importance of each of the existing website performance attributes.

The Cartesian diagram is used to determine the position of each attribute for each dimension into four quadrants, namely quadrant I, quadrant II, quadrant III, and quadrant IV. This quadrant describes conditions that are different from one another. The four quadrants are limited by the average performance level score of 4.17 on the x-axis and the average score on the expectation level of 4.45 on the y-axis. The Cartesian diagram can be seen in Figure 4.

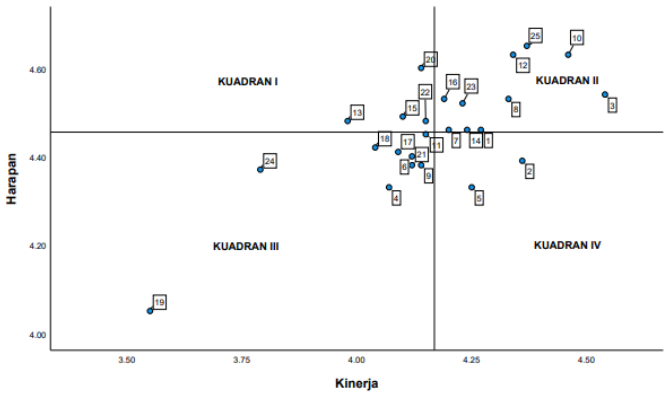

Fig. 4. Cartesian Diagram Results

In Figure 4, the results of the Cartesian diagram show that attribute numbers 13, 15, 20, and 22 are in Quadrant I. Attribute numbers 1, 3, 7, 8, 10, 12, 14, 16, 23, and 25 are in Quadrant II. Attributes number 4, 6, 9, 11, 17, 18, 19, 21, and 24 are in Quadrant III. Attributes number 2 and 5 are in Quadrant IV. Each quadrant describes a different level of priority and circumstances. Mapping like this allows companies to make improvements to attributes that are considered important by consumers in the near term.

V. Conclusion and Suggestion

A. *Conclusion*

Based on the results of the research that has been done, it is found that the performance on the Schoters website has fulfilled the needs and desires of its users. This is evidenced by the results of calculating the dimensions of usability, information quality, assurance, reliability, and data accessibility using the CSI method with a value of 0.83 or 83.64%, which means that website performance is in the "Very Satisfied" category.

For the results of the IPA method, it was found that all statement attributes for each dimension had a "Very Appropriate" level of conformity with percentage values that were in the range of 80% -100%. This means that the suitability between expectations and website performance that users feel at this time is very suitable or satisfied with these attributes. The Cartesian diagram shows that attributes number 13, 15, 20, and 22 are in quadrant I or the main improvement priority. Attributes 1, 3, 7, 8, 10, 12, 14, 16, 23, and 25 are in quadrant II or their performance needs to be maintained. Attributes number 4, 6, 9, 11, 17, 18, 19, 21, and 24 are in quadrant III or low priority. Attributes number 2 and 5 are in quadrant IV or performance is overvalued.

B. *Suggestion*

1. Future research is expected to use the other methods, such as Service Quality, EUCS, Webqual, and the User Experience Questionnaire (UEQ) to improve the quality of user service.
2. Future research is expected to consider and add other attributes that have not been written in this study.
3. Future research is expected to increase the number of respondents so that the results obtained are more in-depth and accurate.

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