

## Analysis of Customer Satisfaction Level Using QFD and IPA Methods to Improve Service Quality

Iil Nur Khamilatul Fitria<sup>1</sup>, Wiwik Sulistiyowati<sup>2</sup>  
<sup>1,2</sup>Muhammadiyah University of Sidoarjo, Indonesia



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### ABSTRACT

**Objective:** The high level of complaints about service in the last three months – 29.2% in September, 35.2% in October, and 35.2% in November – motivates this research to analyze the factors influencing the level of customer satisfaction at Gym Fitness Of Sidoarjo. **Method:** Data analysis was conducted by distributing questionnaires, which were then tested for validity and reliability. The analysis methods used are Quality Function Deployment (QFD) and Important Performance Analysis (IPA), which clarify how improvements can be made. **Result:** The research results reveal that the service variables in the dimensions of reliability and satisfaction that do not meet customer expectations include: workers providing wholehearted service, workers maintaining the cleanliness and comfort of the gym room, equipping gym equipment and repairing damaged facilities and infrastructure, and providing a suggestion box. **Novelty:** These findings suggest that improvements in these service areas can increase customer satisfaction and help maintain customer loyalty at Gym Fitness of Sidoarjo.

## INTRODUCTION

Public awareness of the importance of exercise has led to a significant increase in fitness facilities and infrastructure, resulting in the emergence of many new fitness centers and businesses in Sidoarjo. This has led to fierce business competition, with each business striving to improve its facilities and marketing. This business competition has prompted business owners to measure the quality of the services they provide to determine whether customers are satisfied, so that they can retain their customers [1]. If a company has a good reputation in the eyes of its customers, then the company will always be remembered by its customers, because brand image influences customer loyalty through customer satisfaction. Therefore, a strategy is needed to create a positive brand image to retain existing customers or acquire new ones. If customers have a good impression of the company or its offerings over time, the company or its offerings will have a long-term competitive advantage [2].

FOS (Fitness Of Sidoarjo) is a place or business engaged in sports in Sidoarjo. FOS (Fitness Of Sidoarjo) not only offers weight training but also physical fitness training. The equipment available at FOS (Fitness Of Sidoarjo) includes gym balls, cable crossovers, chest presses, lat pulldowns, leg presses, Smith machines, abdominal benches, bench presses, cycle bikes, dumbbells, and sit-up benches.

With a total of 160 members, the problems that occurred at FOS (Fitness Of Sidoarjo) were that in September, 8 members complained about the lack of equipment, 11 members complained about the lack of changing rooms provided, 9 members complained about

the member card material, 7 members complained about the lack of a sound system, and 10 members complained about the lack of toilet cleanliness. Therefore, out of the 154 members who visited FOS, 29.2% of them complained about the lack of service at FOS. Meanwhile, in October, 11 members complained about the lack of equipment, 13 members complained about the lack of changing rooms provided, 7 members complained about the member card material, 9 members complained about the lack of a sound system, and 11 members complained about the lack of toilet cleanliness. So, out of 145 members who visited FOS, 35.2% of them complained about the lack of service at FOS. In November, there were 9 members who complained about the lack of equipment, 10 members who complained about the lack of changing rooms provided, 10 members who complained about the member card material, 11 members who complained about the absence of a sound system, and 8 members who complained about the lack of toilet cleanliness. Thus, out of 149 members who visited FOS, 32.2% of them complained about the lack of service at FOS. The variation in visits to FOS each month was due to some members only joining for a few months. Efforts to resolve customer satisfaction measurements regarding service quality improvements that are uncertain, vague, and indefinite will use the Quality Function Deployment (QFD) and Importance Performance Analysis (IPA) methods.

Previous research on customer satisfaction and service levels between Purnomo [3] used the importance performance (IPA) method to analyze customer satisfaction with workshop services to customers. The results of the research using the Importance Performance Analysis method from 23 service attributes of Arina Motor workshops showed an average level of conformity of 94%. This indicates that customers are satisfied with the services provided by Arina Motor workshop. Wahyu [4] used the Servqual and Quality Function Deployment (QFD) methods to analyze service quality in relation to customer satisfaction. The results of the study showed that the service variable attributes that did not meet customer satisfaction in terms of reliability and satisfaction levels were: employees providing maximum service to customers, employees being able to resolve customer complaints, and package delivery always being fast and on time.

Research objectives: (1) To determine the level of customer satisfaction at the FOS (Fitness Of Sidoarjo) gym using the QFD method. (2) To determine the indicators that are priorities for improvement using the IPA method. (3) To provide suggestions for improvement to enhance the quality of service at FOS (Fitness Of Sidoarjo).

#### **A. Quality Function Deployment (QFD)**

This method is used to design a product or service according to customer expectations, resulting in the creation of a House of Quality (HOQ) matrix [5]. The House of Quality (HOQ) is part of the QFD process. It is the first step in applying the quality function deployment methodology. In general, this matrix is an effort to directly translate customer opinions into technical requirements or technical specifications for the products or services produced [6]. The use of QFD has several benefits, including the ability to prioritize product specifications based on consumer needs while still considering competition. The QFD technique can also be used to find competitive aspects of a product

that need improvement [7]. There are four main activities in QFD, namely product planning, product design, process planning, and finally process control planning [4].

### B. House of Quality (HOQ)

HOQ is often used in various fields to translate customer requirements, market research results, and benchmarking data into a number of priority targets [4]. The following are the parts of HOQ:

- a. Customer Need and Benefits. This is a list of consumer needs and expectations related to the value of products and services or processes, which are usually obtained from customer feedback and converted into a customer needs matrix table.
- b. Planning Matrix. The planning matrix serves to compile and develop several strategic options for the highest consumer satisfaction values.
- c. Technical Response. Technical Response is a way to find out how a company explains the planning of products or services to be developed. This explanation is obtained from consumer desires and needs.
- d. Relationship. This describes the relationship between each element of the technical response and consumer desires and needs. The symbols used in the relationship column are shown in Table 1.

*Importance To Customer (ITC)*,  $r$  the level of importance of attributes, is a tool for measuring the level of importance of each criterion from very important to not important [8], which in this study has a value of 1 to 5. The weights given by respondents are calculated using the following formula:

$$X = \sum_{i=1}^n \frac{Dki}{n}$$

Source: [8]

Explanation:

$Dki$  = Importance of respondent- $i$

$n$  = Number of respondents

*Customer Satisfaction Performance (CSP)*, is a description of performance in providing services and assessing consumers to determine product development strategies [8]. The following is the calculation of customer satisfaction levels:

$$X = \sum_{i=1}^n \frac{ki}{n}$$

Source: [8]

Explanation:

$ki$  = Satisfaction of respondent -  $i$

$n$  = Number of respondents

*Improvement Rasio (IR)*, is data that measures how much improvement Gym Fitness of Sidoarjo must make to increase customer satisfaction. The higher the

improvement, the more improvement must be made [8]. The following is the formula for calculating the Improvement Ratio:

$$IR = \frac{\text{Target Goal Value}}{\text{Customer Satisfaction Performance}}$$

Source: [8]

**Raw Weight**, used to determine priorities in defining and developing attributes for a product/service [8]. The following is the formula for determining Raw Weight:

$$RW = ITC \times \frac{\text{Goal}}{\text{CSP}} \times \text{sales point}$$

Source: [8]

**Normalized Raw Weight**, used to calculate and normalize the weight of each attribute [8]. The following is the formula for determining Normalized Raw Weight:

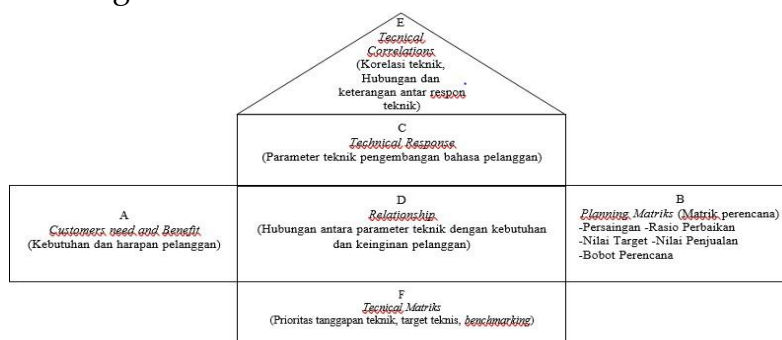
$$\text{Normalized Raw Weight} = \frac{\text{Raw Weight}}{\text{Total Raw Weight}} \times 100$$

**Table 1.** Correlation Symbols.

Symbol	Meaning Description	Value	
	<i>Not Linked</i>	No relationship	0
△	<i>Possibly Linked</i> If there is a possibility of a relationship between the two		1
○	<i>Moderately Linked</i>	If the relationship is average	3
●	<i>Strongly Linked</i>	If there is a strong relationship	9

### C. Matriks House Of Quality

In the QFD process, there is a process for compiling one or more matrices called the House of Quality. This matrix is useful for explaining what the customer's needs and expectations are and how to fulfill them. The matrix called the House of Quality can generally be seen in Figure 1.



**Figure 1.** Matriks House of Quality [4].

#### D. Importance Performance Analysis (IPA)

The Importance Performance Analysis (IPA) method is used to measure the relationship between consumer views and priorities for improving quality based on the user's perspective [9]. The advantage of the important performance analysis (IPA) method is that it can accurately and quickly determine the actions that must be taken to address customer dissatisfaction [3]. The division of quadrants in important performance analysis can be stated as follows: Quadrant I has a high level of importance but does not meet user expectations, so performance improvements must be made immediately. Quadrant II has a high level of importance accompanied by a high level of performance and meets user expectations, so it must be maintained. Quadrant III has a low level of importance accompanied by a performance level that is not particularly special with a relatively low level of expectation, thus providing too little benefit to users. Quadrant IV has a low level of importance accompanied by a performance level that is too high 6, so the organization must reallocate resources from this quadrant to other quadrants that need performance improvement [10].

### RESEARCH METHOD

#### Time and Place of Research

This research was conducted at FOS (Fitness Of Sidoarjo) in Candi District, Sidoarjo. This research began in October 2023 until March 2024.

#### Data Collection

In this study, two types of data collection were conducted, namely primary data and secondary data.

#### Primary Data

Primary data was obtained from distributing questionnaires to respondents who were members of FOS (Fitness Of Sidoarjo).

#### Secondary Data

The secondary data used consists of a number of variable data obtained from books or other references. The following are the dimensions and indicators of variables used in the study, obtained from literature sources. The dimensions and indicators of variables can be seen in Table 2.

**Table 2.** Dimensions of Service Quality.

No.	Dimension	Variable Indicator	Source
1.	<i>Tangibles</i> (Direct Evidence)	a. The training room is clean and tidy b. The training room is cool and comfortable c. The training facilities available in the training room are adequate d. Internet access for training is very fast e. There are sufficient and clean toilet facilities for training	[11]

		members	
		f. There is an adequate waiting room before training	
		a. Employees' ability to provide the best service	
2.	<i>Reliability</i>	b. Employees' ability to handle customer needs quickly and correctly	[12]
3.	<i>Responsiveness</i>	Employees' willingness to help members in providing responsive service	[13]
4.	<i>Assurance</i>	Employees always behave politely and possess the knowledge and skills needed to handle every member's question	[14]
5.	<i>Emphaty</i>	Demonstrating sincere concern, through the attention given by employees in serving and responding to customer complaints	[12]

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The above dimensions are assessed using the following measurements [15]:

1. Category 1: Very unsatisfactory
2. Category 2: Unsatisfactory
3. Category 3: Fairly satisfactory
4. Category 4: Satisfactory
5. Category 5: Very satisfactory

The number of FOS (Fitness OF Sidoarjo) members is 140. In determining the number of representative samples, the following sample determination formula is used:

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

Source: [16]

Explanation:

n= Population size

e= Standart error

In this study, the total number of samples to be taken is:

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

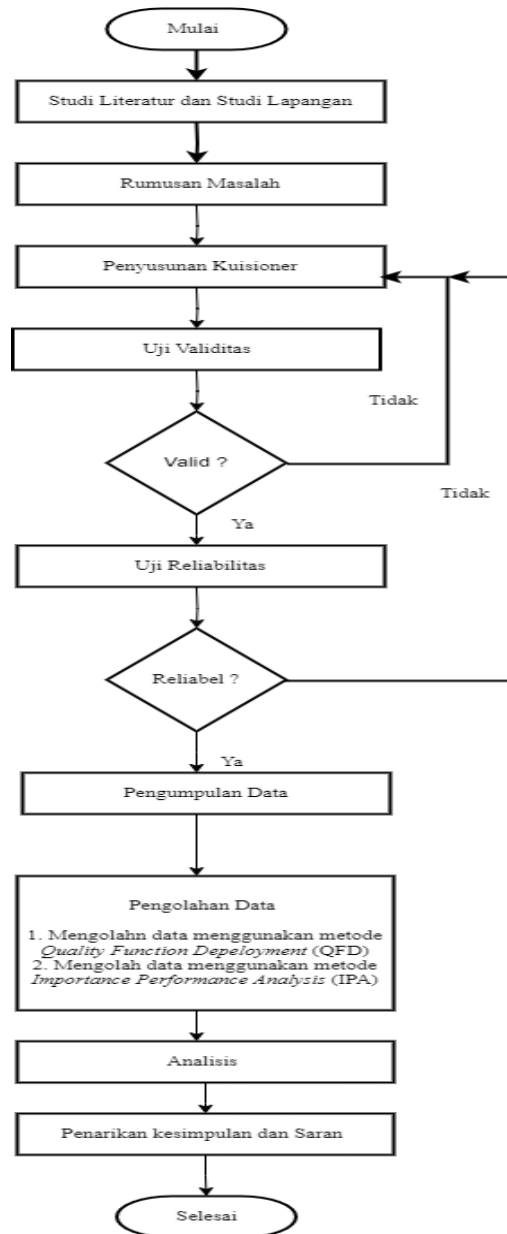
$$n = \frac{140}{1 + 140(0,05)^2}$$

n = 103

Therefore, the total sample required is 103 people.

### Research Flow

Figure 2 is a flowchart diagram of the research.



**Figure 2.** Flowchart Diagram.

Research stages:

- a. Literature study was conducted by reviewing journals, books, and previous studies related to the research to be completed.
- b. Field studies were conducted through direct observation of activities at FOS (Fitness Of Sidoarjo).
- c. The problem formulation was determined after obtaining the results of the field study or direct observation.

- d. A questionnaire was developed using a 1-5 Likert scale to assess customer satisfaction. The respondents of this questionnaire were FOS (Fitness Of Sidoarjo) members.
- e. A validity test was conducted to test the validity of the data obtained. If the data was invalid, the questionnaire had to be repeated.
- f. A reliability test is conducted to determine the consistency of the data to be tested.
- g. This data collection is obtained from the results of the validity and reliability tests.
- h. Data processing uses the Quality Function Deployment (QFD) method.  
The stages that must be applied in this method are:
  - 1. Creation of a House Of Quality (HOQ) matrix. This matrix is usually an effort to convert customer feedback directly into technical requirements or service specifications [4].
  - 2. QFD ranking. This calculation is obtained from the HOQ matrix that has been created.

In addition to using the Quality Function Deployment (QFD) method to measure customer satisfaction levels at FOS (Fitness Of Sidoarjo), the Importance Performance Analysis (IPA) method can also be used. The steps that must be applied in this method are [17]:

- a. Assessment of the mean and GAP of service quality, calculation of the average of each indicator, and finding the gap between each indicator.
- b. Ranking the service quality GAP, ranking is carried out to determine the degree of importance of each indicator from the most important to the least important.
- c. Analysis of the data obtained is carried out using the Quality Function Deployment (QFD) and Importance Performance Analysis (IPA) methods.
- d. Drawing conclusions and recommendations is done after solving the problem using the Quality Function Deployment (QFD) and Importance Performance Analysis (IPA) methods. This stage contains the final results of the research and recommendations that are expected to be considered in further research.

## RESULTS AND DISCUSSION

### A. Identification of Variables

The variables in this study serve to determine the definition of the variables to be studied, which are then used in the research questionnaire and analyzed to improve service quality at FOS.

### B. Sample Determination

The sample was taken from FOS gym members in Candi District, Sidoarjo, over the last 3 months. The sample is part of the population in terms of data quantity and characteristics. In this study, there were 103 respondents.

### C. Validity and Reliability Tests

#### Validity Test

Data can be considered valid if the  $r_{\text{count}}$  value is positive and  $r_{\text{count}} > r_{\text{table}}$  [4]. Factor analysis was used to correlate the number of factors with the measured values, where 5%

(0.05) and the degree of freedom was  $df=n-2$  ( $103-2=101$ ), resulting in an  $r_{table}$  value of 0.1937, which has the following conditions:

- Data is considered invalid if the  $r_{count}$  value is less than or lower than 0.1937.
- Data is considered valid if the  $r_{count}$  value is at least 0.1937.

**Table 3.** Validity Test.

Dimension	Indicator	CalculatedR
<i>Tangibles</i>	Cleanliness	1,000
	Comfort	0,744
	Availability of facilities	0,732
	Internet service	0,717
	Completeness of facilities	0,656
	Availability of waiting room	0,677
<i>Reliability</i>	Employee service	0,635
	Employee responsiveness	0,705
<i>Responsiveness</i>	Employee availability	0,702
<i>Assurance</i>	Employee attitude	0,682
<i>Emphaty</i>	Employee concern	0,691

Based on Table 3, it can be concluded that all items have a corrected item–total correlation value above 0.1937. This means that the calculated  $r$  is greater than the table  $r$ , so it can be said that all statement items in each research variable are valid [4].

### Reliability Test

The reliability test was conducted using Cronbach's Alpha, which will later be compared with the minimum acceptable reliability coefficient value. If the Cronbach's Alpha value is  $>0.60$ , then the variables in the study are considered reliable [6].

**Table 4.** Reliability Test.

Reliability Statistics		
<i>Cronbach's Alpha</i>	<i>Cronbach's Alpha Based on Standardized Items</i>	<i>N of Items</i>
,964	,965	11

Based on Table 3 above, it can be seen that the Cronbach's alpha value obtained for the variable is  $0.964 > 0.60$ . Therefore, all research variables are considered reliable or consistent and can be used for further testing.

### D. Quality Function Depeloyment (QFD)

The preparation of QFD was preceded by data collection through the distribution of open-ended questionnaires to 103 respondents. After processing the respondent data, the values of consumer importance and satisfaction,

the suitability values for each aspect of consumer needs, and service priorities were obtained and summarized in the House of Quality.

**Table 5.** Average Importance and Satisfaction.

Dimension	Indicator	Satisfaction	Importance	Conformity	Priority
<i>Tangibles</i>	Cleanliness	3,87	3,80	98%	6
	Comfort	4,20	4,15	99%	4
	Availability of facilities	4,12	4,04	98%	1
	Internet service	4,04	3,86	96%	11
	Completeness of facilities	4,06	3,98	98%	2
	Availability of waiting room	3,96	3,86	98%	10
<i>Reliability</i>	Employee service	4,26	4,21	99%	3
	Employee responsiveness	4,27	4,19	98%	5
<i>Responsiveness</i>	Employee availability	4,16	4,07	98%	7
<i>Assurance</i>	Employee attitude	4,23	4,17	99%	8
<i>Emphaty</i>	Employee Care	4,16	4,11	99%	9
	MEAN	4,12	4,04	98%	

After distributing the questionnaire, the average customer satisfaction score was 4.12 and the importance score was 4.04 with a conformity score of 98%. with the order of priority for improvement starting from the availability of facilities and amenities, employee service, comfort, employee responsiveness, cleanliness, employee availability, employee attitude, employee concern, availability of waiting rooms, and finally internet service.

#### E. House Of Quality (HOQ)

Explains what the customer's needs or expectations are and how to meet those needs and expectations. The House of Quality is created based on the combination of data processing from determining the degree of importance to the interaction of technical parameters. To create a House of Quality matrix, several steps are required, namely:

**Importance To Customer (ITC)**, the level of importance of attributes is a tool to measure the level of importance of each criterion from very important to not important [8], which in this study has a value of 1 to 5. The weights given by respondents are calculated using the following formula:

$$X = \sum_{i=1}^n \frac{Dki}{n}$$

Source: [8]

Where:

$$X = \frac{391}{103} = 3,80$$

Table 6 shows the overall calculation and the level of importance of each attribute.

**Table 6.** Level of Importance of Attributes.

Attribute	Total Score	Level of Importance
Cleanliness	391	3,80
Comfort	427	4,15
Availability of facilities	416	4,04
Internet service	398	3,86
Completeness of facilities	410	3,98
Availability of waiting room	398	3,86
Employee service	434	4,21
Employee responsiveness	432	4,19
Employee availability	419	4,07
Employee attitude	430	4,17
Employee Carefulness	423	4,11
Average		4,04

Based on Table 6, it can be seen that the average level of importance of the 11 attributes obtained is 4.04, which means that each attribute is important to develop in order to increase customer satisfaction.

*Customer Satisfaction Performance (CSP)*, is an overview of performance in providing services and assessing consumers to determine product development strategies [8]. The following is the calculation of customer satisfaction levels:

$$X = \sum_{i=1}^n \frac{ki}{n}$$

Source: [8]

Where:

$$X = \frac{399}{103} = 3,87$$

Table 7 shows the overall calculation and level of importance of each attribute.

**Table 7.** Customer Satisfaction Level.

Attribute	Total Score	Satisfaction Level
Cleanliness	399	3,87
Comfort	433	4,20
Availability of facilities	424	4,12
Internet service	416	4,04
Completeness of facilities	418	4,06
Availability of waiting room	408	3,96
Employee service	439	4,26
Employee responsiveness	440	4,27
Employee availability	428	4,16
Employee attitude	436	4,23
Employee concern	428	4,16

Average

4,12

Based on Table 7, it can be seen that the average satisfaction level of the 11 attributes obtained is 4.12, which means that each attribute is satisfactory and can be developed to increase customer satisfaction.

*Goal*, is the target satisfaction value to be achieved by the product/service to be developed.

*Improvement Rasio (IR)*, is data that measures how much improvement Gym Fitness Of Sidoarjo must make to increase customer satisfaction. The higher the improvement, the greater the improvements that must be made [8]. The following is the formula for calculating the Improvement Ratio:

$$IR = \frac{\text{Target Goal Value}}{\text{Customer Satisfaction Performance}}$$

Source: [8]

Where:

$$IR = \frac{5}{3,87} = 1,29$$

Table 8 shows the overall calculation and improvement level for each attribute.

**Table 8.** Improvement Rasio.

Attribute	Goal	IR
Cleanliness	4	1,03
Comfort	4	0,95
Availability of facilities	4	0,97
Internet service	3	0,74
Completeness of facilities	4	0,99
Availability of waiting room	3	0,76
Employee service	4	0,94
Employee responsiveness	4	0,94
Employee availability	4	0,96
Employee attitude	3	0,71
Employee concern	3	0,72
Rata-rata		0,88

Based on the improvement ratio calculation results, the average is 0.88, which means that no comprehensive changes need to be made to the services provided.

*Sales Point*, is an attribute that is considered to have high selling value [8]. The sales point value consists of:

- a. < 1 = No Change
- b. 1,2 = Moderate Sales Point
- c. 1,5 = Strong Sales Point

Table 9 determines the sales point as follows:

**Table 9.** Sales Point.

<b>Attribute</b>	<b>Sales Point</b>
Cleanliness	1
Comfort	1,2
Availability of facilities	1,5
Internet service	0,80
Completeness of facilities	1,5
Availability of waiting room	1
Employee service	1,2
Employee responsiveness	1
Employee availability	1
Employee attitude	1
Employee concern	1

From Table 9, it can be seen that the attributes of facility availability and facility completeness have strong sales points of 1.5, meaning that the sales points for these attributes need to be maintained. For the attributes of comfort, employee service, cleanliness, waiting room availability, employee responsiveness, employee availability, employee attitude, and employee concern have a moderate sales point of 1 to 1.2, which means that the sales point of these attributes needs to be improved. Finally, the internet service attribute has a sales point of 0.80, which means that no changes are needed for this attribute.

*Raw Weight*, is used to determine the priority in determining and developing attributes for a product/service [8]. The following is the formula for determining Raw Weight:

$$RW = ITC \times \frac{Goal}{CSP} \times sales\ point$$

Source: [8]

The overall Raw Weight calculation can be seen in Table 10:

**Table 10.** Raw Weight.

<b>Attribute</b>	<b>Raw Weight</b>
Cleanliness	3,92
Comfort	4,73
Availability of facilities	5,89
Internet service	2,30
Completeness of facilities	5,89
Availability of waiting room	2,93
Employee service	4,75
Employee responsiveness	3,93
Employee availability	3,92
Employee attitude	2,96
Employee concern	2,96
<b>Total</b>	<b>44,16</b>

From Table 10, we obtain the priority of improvements, starting from the availability of facilities and equipment, employee services, comfort, employee

responsiveness, cleanliness, employee availability, employee attitude, employee concern, availability of waiting rooms, and finally internet service.

*Normalized Raw Weight*, is used to calculate and normalize the weight of each attribute [17]. The following is the formula for determining Normalized Raw Weight:

$$\text{Normalized Raw Weight} = \frac{\text{Raw Weight}}{\text{Total Raw Weight}} \times 100$$

Source: [8]

Where:

$$\text{NW} = \frac{3,92}{44,16} \times 100 = 8,88$$

The overall Normalized Raw Weight calculation can be seen in Table 11:

**Table 11.** Normalized Raw Weight.

<b>Attribute</b>	<b>Normalized Raw Weight</b>
Cleanliness	8,88
Comfort	10,72
Availability of facilities	13,33
Internet service	5,20
Completeness of facilities	13,33
Availability of waiting room	6,63
Employee service	10,75
Employee responsiveness	8,89
Employee availability	8,87
Employee attitude	6,70
Employee concern	6,71

From Table 11, we obtain the order of Normalized Raw Weight values, starting from facility availability and completeness, employee service, comfort, employee responsiveness, cleanliness, employee availability, employee attitude, employee concern, waiting room availability, and finally internet service.

After calculating Importance to Customer, Customer Satisfaction Performance, Goals, Improvement Ratio, Sales Point, Raw Weight, and Normalized Raw Weight, the HOQ (House Of Quality) Matrix was compiled. In the House Of Quality chart, service attributes are depicted vertically on the left and technical parameters are depicted horizontally at the top, as shown in Figure 3.



3. Standardize facilities and equipment, including the completeness of equipment and the cleanliness of supporting facilities such as comfortable classrooms, complete fitness equipment, standardized audio, and complete classroom support equipment.
4. Develop sales tools and training, plans to develop employee capabilities and every aspect related to sales objectives.
5. Maintain communication with customers. Regular communication shows members that the service provided is involved and invested in their fitness journey.

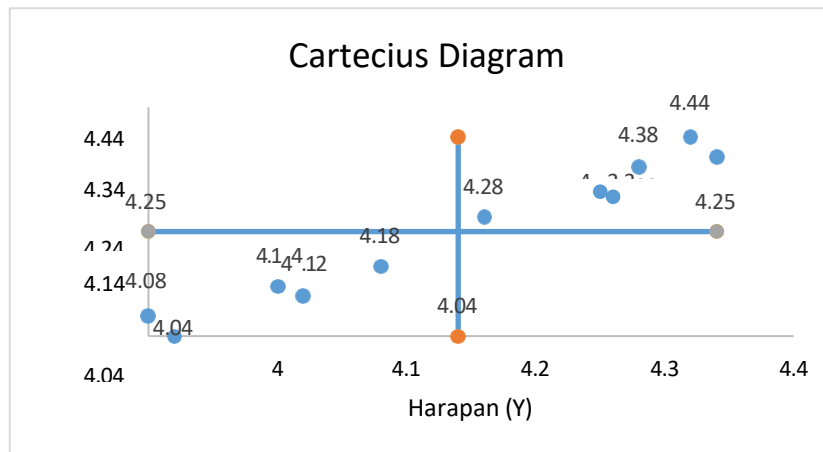
#### ***Importance Performance Analysis (IPA)***

Entering the IPA method stage, the following analysis results were obtained:

**Table 12.** Analysis Results of Suitability.

<b>Dimension</b>	<b>Indicator</b>	<b>Reality</b>	<b>Expectation</b>	<b>Suitability</b>	<b>GAP</b>	<b>Priority</b>
<i>Tangibles</i>	Cleanliness	3,92	4,04	97%	0,12	3
	Comfort	4,26	4,32	99%	0,06	10
	Availability of facilities	4,08	4,18	98%	0,10	6
	Internet service	3,9	4,08	96%	0,18	1
	Completeness of facilities	4,02	4,12	98%	0,10	7
	Availability of waiting rooms	4	4,14	97%	0,14	2
<i>Reliability</i>	Worker service	4,34	4,4	99%	0,06	11
	Employee responsiveness	4,32	4,44	97%	0,12	4
<i>Responsiveness</i>	Employee availability	4,16	4,28	97%	0,12	5
<i>Assurance</i>	Employee attitude	4,28	4,38	98%	0,10	8
<i>Emphaty</i>	Employee concern	4,25	4,33	98%	0,08	9
	<i>MEAN</i>	4,14	4,25	0,97	0,11	

From the gap calculation results in Table 6, the highest gap value of the 11 variables and the most dominant variable is Tangible. After determining the Servqual position from Table 3, the next step in this study is to integrate the Servqual and IPA methods. The intersection point is obtained from the average value of the expected and actual levels in Table 3, so that the relative importance of various attributes to the performance of the organization or company and its products can be determined.



**Figure 4.** Cartecius Diagram of FOS Member Satisfaction Indicators.

The order of the gap levels in each quadrant can be seen in Figure 2, as follows:

1. Quadrant I, top priority (high level of importance and low level of satisfaction). The variable in Quadrant I is tangible (employee care). This variable is very important to customers, but the current conditions are not satisfactory, so management is obliged to allocate adequate resources to improve the implementation of these variables.
2. Quadrant II, maintain performance (high level of importance and high level of satisfaction). The variables in Quadrant II include: tangible (comfort), assurance (employee attitude), empathy (employee concern), reliability (employee alertness, employee service), responsiveness (employee willingness). These variables are supporting variables for members, so FOS gym management is obliged to ensure that the implementation carried out by FOS can be maintained.
3. Quadrant III, low priority (low level of importance and low level of satisfaction). These variables are: tangible (availability of facilities, availability of waiting rooms, completeness of facilities, cleanliness, internet service). These variables have a low level of satisfaction and are considered less important to customers, so management does not need to prioritize them, but they must still be taken into account.
4. Quadrant IV, excessive (low level of importance and high level of satisfaction). In this quadrant, there are no variables, meaning that all variables are important to support customer satisfaction at FOS gyms.

These variables have a low level of satisfaction and are considered less important to customers, so management does not need to prioritize them, but they must still be taken into account.

#### ***Customers Satisfaction Indeks (CSI)***

The Customer Satisfaction Index (CSI) is an analysis that describes the percentage of customer satisfaction with a survey. To find out the average of each expected attribute, the average of each actual attribute, and the score.

**Tabel 13.** Customer Satisfaction Indeks (CSI).

Attribute	Reality	WF = Reality/∑ Reality	Expectation	WS = Reality x WF
Cleanliness	3,92	0,0861	4,04	0,3375
Comfort	4,26	0,0936	4,32	0,3986
Availability of facilities	4,08	0,0896	4,18	0,3656
Internet service	3,9	0,0857	4,08	0,3341
Facility completeness	4,02	0,0883	4,12	0,3549
Waiting room availability	4	0,0879	4,14	0,3514
Employee service	4,34	0,0953	4,4	0,4137
Employee responsiveness	4,32	0,0949	4,44	0,4099
Employee availability	4,16	0,0914	4,28	0,3801
Employee Attitude	4,28	0,0940	4,38	0,4023
Employee Concern	4,25	0,0933	4,33	0,3967
Total	45,53	1,00	46,71	4,14

$$\text{Customer Satisfaction Index} = (4,14 : 5) \times 100\% = 83\%$$

Based on the Customer Satisfaction Index (CSI) calculation using Microsoft Excel, the respondents' satisfaction level was 83%. This means that the respondents were satisfied with the services provided by the FOS Sidoarjo gym, but these services have not yet reached the highest level of the Customer Satisfaction Index (CSI) (Very Satisfied).

## CONCLUSION

**Fundamental Finding :** The results of the study reveal that the reliability dimension includes indicators with a low level of suitability, indicating the need for immediate improvements in services. The study also highlights the importance of providing maximum service to members and ensuring employees are responsive to complaints. **Implication :** The study offers alternative suggestions for improving customer satisfaction at the FOS Sidoarjo gym, which include maintaining a clean and comfortable environment, promptly addressing issues, standardizing facilities and equipment, and developing sales tools and training. Furthermore, maintaining effective communication with customers is crucial for improving overall satisfaction. **Limitation :** The study primarily focuses on the evaluation of service variables within the gym and does not address broader operational challenges or external factors that might influence customer satisfaction. **Future Research :** Future research could explore other factors affecting customer loyalty, assess the long-term impact of improvements in the gym's services, and investigate customer preferences in different regions or gyms with varying service levels.

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**Iil Nur Khamilatul Fitria**

Muhammadiyah University of Sidoarjo, Indonesia

**\*Wiwik Sulistiyowati (Corresponding Author)**

Muhammadiyah University of Sidoarjo, Indonesia

Email: [wiwik@umsida.ac.id](mailto:wiwik@umsida.ac.id)

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