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Service Quality Improvement Planning at AL Coffee Using Service Quality and Quality Function Deployment Methods

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ABSTRACT

AL Coffee is one of the hangout places for teenagers with a friendly concept, comfortable place, and affordable prices. Based on complaints, namely revenue in February to May 2024 is still fluctuating stable, suddenly in June to December 2024 and January 2025 there is a decline. To fix these problems, one of the methods used is the ServQual method as a measure of customer perceptions and expectations assisted by the GAP value if negative results will be made improvements, and QFD to translate needs with HOQ involving VOC. The results of ServQual and QFD obtained technical responses for improvement by conducting training for 1-2 months and involving experienced staff, using a digital queue number system to make orders more organized, routine checks and making a list of important facilities needed by customers, redesigning menu books with clear fonts, images, and detailed information, establishing a staff performance appraisal system and providing rewards for the best staff every month, making a list of all cafe equipment and checking at the beginning-end of work, and using a daily checklist so that cleaning is not missed.

INTRODUCTION

Competition in the modern world is very fast, the business market requires every organization to consistently strive to work on the nature of its services (Trenggonowati et al., 2023). All large service organizations should aim to be creative and well on their way to keeping up with and working on the nature of their services, by performing strong service techniques using the freedom available to advance the organization's situation under supervision (Murgani & Hasibuan, 2022). Clients will feel satisfied if the service provides more than their assumptions, so the quality of assistance affects consumer loyalty (Akhirullah et al., 2023). Quality is the totality of the provisions and attributes of an aid that depend on its capacity to meet expressed or suggested needs (Wati et al., 2023). The way to work on the nature of service is to try to know and understand what the client wants. With input from clients, the organization can work on the nature of its services (Arini et al., 2022).

Satisfaction is an individual's sensation of pleasure or frustration stemming from an examination between the impression gained at the aid exhibition and his or her assumptions (Alamsyah et al., 2024). Customer satisfaction is an important factor for organizations, with the aim that the organization can continue to run and develop, especially in developing further quality assistance (Rahmanulia et al., 2023). Improving service quality is currently very important in supporting increased profits (Maulana, 2024). Improving the quality of service This

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is something that is important to do to get ideal results, so that the company can survive and compete and fulfill its obligations since long ago (Putri et al., 2021). The contest between companies is getting harder, because coffee has become a necessity for most people in the current era. However, the decline in customers forces the coffee to make more efforts in offering more services to improve service quality for customers.

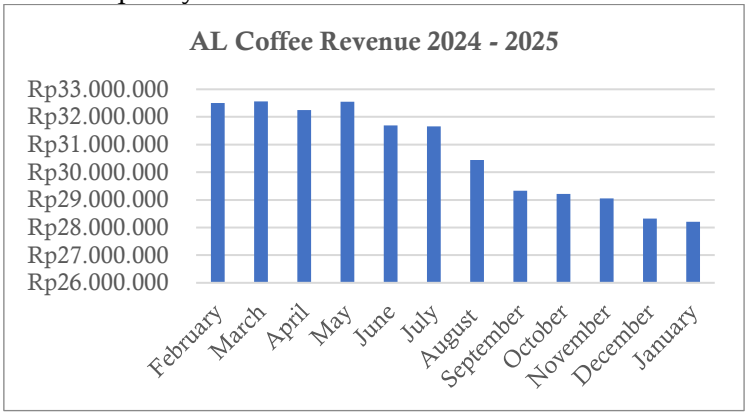

Figure 1. AL Coffee Revenue

AL Coffee is one of the hangout places for teenagers who develop services with a friendly concept, comfortable place, and affordable prices that have been established since 2023 until now. Based on complaints that occurred at AL Coffee, namely revenue in February to May 2024 was still fluctuating stable, suddenly in June to December 2024 and January 2025 there was a decline. To fix these problems, it is necessary to identify various factors according to customers. Causal factors are seen from the expectations and perceptions of customers, there are several strategies that can be used to measure the fulfillment of a service. One method that can be used in this research is the Service Quality (ServQual) method as a measure of customer perceptions of how well a service meets customer expectations (Aditya & Wibisono, 2024), dan Quality Function Deployment (QFD) to translate customer needs and wants, often called Voice of Customer (VOC) (Hutagalung, 2023). The goal is to improve service quality based on customer perceptions that are actually desired, so that it can increase AL Coffee revenue.

RESEARCH METHODS

Service Quality (ServQual)

A frequently used technique for estimating the quality of assistance is ServQual, which evaluates the nature of assistance from specialist organizations depending on five elements of service quality, often called Q-Rater (Ramdani et al., 2023) :

1. Reliability : the ability to deliver the promised service reliably and accurately.
2. Assurance : the knowledge and courtesy of employees in serving customers and their ability to maintain customer trust.
3. Tangibles : physical appearance, equipment, workers or communication tools.
4. Emphaty : caring, individual attention provided to customers.
5. Responsiveness : willingness to help customers and provide services quickly.

ServQual methodology, used to measure the gap between customers' expectations of service and their perceptions of the service received (Rafli et al., 2021). In this ServQual evaluation, a Likert scale is used, allowing respondents to select their level of interest or satisfaction regarding the quality of service questions. The drawback of this technique is that it is only ready to make improvements to the assistance area, making it difficult to apply to investigations that expect the instrument to further develop the execution of items (Malaha, 2022). In this study, the application steps are :

1. Identification of Research Variables
   Using the five ServQual quality elements as the main variables in service quality evaluation.
2. Questionnaire Distribution

a. The questionnaire is made with a 5-level Likert scale to measure the level of customer expectations and perceptions.
b. Respondents were asked to rate the service based on their experience.

3. GAP Analysis
   After the data is collected, the difference between the expectation and perception scores is calculated for each ServQual element, if the GAP value is negative it means that there are deficiencies in the service that need to be improved.

Quality Function Deployment (QFD)

After identifying service gaps using ServQual, the QFD method is applied to design service improvements according to customer needs. The QFD process involves a quality table called HOQ by translating customer needs and wants often called Voice of Customer (VOC) (Kurnia et al., 2021).

1. House Of Quality Creation
   To translate VOCs into technical attributes can be applied.
2. Steps of QFD Implementation
   a. Identification of Customer Needs
      Based on the ServQual results, a list of service aspects that need improvement is determined.
   b. Determining Improvement Priorities
      Priority for improvement is given to negative GAP values which are the top priority.
   c. Determine Technical Response
      Determine the technical response aspects that can improve service.
   d. Creating a Relationship Matrix
      The relationship between VOCs and technical responses is evaluated to find the most effective solution.

RESULTS AND DISCUSSION

Data Collection

In collecting data taken by interview, observation, and distributing questionnaires at AL Coffee. For the distribution of questionnaires given to customers at AL Coffee with several questions in tables 1 and 2 which are obtained from each attribute dimension as many as 17 questions attached to the questionnaire.

Data Processing

Data Sufficiency Test

To conduct a sample test of the research attributes, the Bernouly calculation of the minimum sample size is used. Obtained from the Bernouly formula as follows :

$$n=\frac{Za^2.p.q}{e^2} \quad (1)$$

Explanation :
n = Minimum sample
Z = Normal distribution values
e = Error tolerance (5% ~ 0,05)
p = Percentage of questionnaires considered correct (39, p = 39/40 = 0,97)
q = Percentage of questionnaires considered incorrect (1, q = 1/40 = 0,025)

With the above formula, the calculation of the desired minimum sample size (n) can be done, namely :

$$n=\frac{(1,96)^2.(0,97).(0,025)}{(0,05)^2}=37,4556$$

From the results of the above calculations, the minimum number of samples that must be distributed is 37 respondents. In this study, 40 respondents distributed questionnaires so that the number of samples used in this study met the data sufficiency.

Validity Test

The validity test will prove whether the sample status is valid or not with the r table between customer expectations and expectations.

Table 1. Expectation Validity Test

Question List	Expectation		
	R table	R count	Status
Tangibles			
1. AL Coffee's interior is cozy and aesthetically pleasing	0,316	0,968	Valid
2. The equipment at AL Coffee (machines, coffee, cups, etc.) looks modern and clean	0,316	0,476	Valid
3. The seating area at AL Coffee is always clean and tidy	0,316	0,968	Valid
4. The menu at AL Coffee is easy to read and attractive	0,316	0,562	Valid
5. AL Coffee's staff always look neat and professional	0,316	0,968	Valid
6. AL Coffee has additional facilities such as WIFI and quality power plugs	0,316	0,987	Valid
Reliability			
1. My orders at AL Coffee are always delivered on time and as requested	0,316	0,920	Valid
2. AL Coffee is consistent in taste and product quality	0,316	0,968	Valid
3. Service at AL Coffee is always reliable	0,316	0,824	Valid
Responsiveness			
1. AL Coffee staff are quick to respond to orders or needs	0,316	0,618	Valid
2. AL Coffee staff are prompt in handling complaints or inquiries	0,316	0,960	Valid
Assurance			
1. AL Coffee staff have in-depth knowledge of coffee products	0,316	0,805	Valid
2. AL Coffee staff are friendly and polite to customers	0,316	0,630	Valid
3. AL Coffee provides a sense of security and comfort while in the cafe	0,316	0,851	Valid
Empathy			
1. AL Coffee staff pay special attention to customer needs	0,316	0,987	Valid
2. AL Coffee pays attention to customer needs with special orders	0,316	0,968	Valid
3. AL Coffee staff care about customer satisfaction	0,316	0,867	Valid

Table 2. Perception Validity Test

Question List	Perception		
	R table	R count	Status
Tangibles			
1. AL Coffee's interior is cozy and aesthetically pleasing	0,316	0,497	Valid
2. The equipment at AL Coffee (machines, coffee, cups, etc.) looks modern and clean	0,316	0,877	Valid
3. The seating area at AL Coffee is always clean and tidy	0,316	0,877	Valid
4. The menu at AL Coffee is easy to read and attractive	0,316	0,331	Valid
5. AL Coffee's staff always look neat and professional	0,316	0,497	Valid
6. AL Coffee has additional facilities such as WIFI and quality power plugs	0,316	0,363	Valid
Realibility			
1. My orders at AL Coffee are always delivered on time and as requested	0,316	0,381	Valid
2. AL Coffee is consistent in taste and product quality	0,316	0,421	Valid
3. Service at AL Coffee is always reliable	0,316	0,413	Valid
Responsiveness			
1. AL Coffee staff are quick to respond to orders or needs	0,316	0,368	Valid
2. AL Coffee staff are prompt in handling complaints or inquiries	0,316	0,819	Valid
Assurance			
1. AL Coffee staff have in-depth knowledge of coffee products	0,316	0,317	Valid
2. AL Coffee staff are friendly and polite to customers	0,316	0,615	Valid
3. AL Coffee provides a sense of security and comfort while in the cafe	0,316	0,663	Valid
Empathy			
1. AL Coffee staff pay special attention to customer needs	0,316	0,581	Valid
2. AL Coffee pays attention to customer needs with special orders	0,316	0,462	Valid
3. AL Coffee staff care about customer satisfaction	0,316	0,487	Valid

Test the validity of 40 respondents in tables 1 and 2 to determine the value of r count. After obtaining the number of respondents with a significance level of 5% and after testing the validity of the respondents' answers, it is known that all r table values are 0.316, it can be seen that the calculated r value above is valid.

Reliability Test

The reliability test shows that the data is reliable between customer expectations and expectations.

Expectation Reliability

Table 3. Expectation Reliability Test

Cronbach's Alpha	N of Items
0.976	17

Perception Reliability

Table 4. Perception Reability Test

Cronbach's Alpha	N of Items
0.848	17

Based on tables 3 and 4, the Cronbach alpha value at the expectation level is 0.976 and the perception level is 0.848, it is concluded that the statement is reliable.

GAP Value Calculation

To calculate the GAP value, the calculation formula is carried out in each dimension of service quality, including tangibles, reliability, responsiveness, assurance, and empathy :

$$Q=P-E \quad (2)$$

Explanation :
Q = Customer service quality
E = Customer expectations of service quality
P = Perception of actual service

Table 5. GAP Value Calculation

No.	Service Attribute	Mean Perception	Mean Expectation	GAP
1	Tg 1	4,275	3,925	0,350
2	Tg 2	4,225	4,250	-0,025
3	Tg 3	4,225	3,925	0,300
4	Tg 4	3,725	4,150	-0,425
5	Tg 5	4,275	3,925	0,350
6	Tg 6	3,650	3,950	-0,300
7	Rel 1	3,650	4,025	-0,375
8	Rel 2	4,075	3,925	0,150
9	Rel 3	4,100	4,050	0,050
10	Res 1	3,625	4,075	-0,450
11	Res 2	4,275	3,975	0,300
12	Ass 1	3,650	4,125	-0,475
13	Ass 2	4,250	4,225	0,025
14	Ass 3	4,200	4,075	0,125
15	Emp 1	4,325	3,950	0,375
16	Emp 2	4,375	3,925	0,450
17	Emp 3	4,325	4,050	0,275

Based on table 5, the tangibles 2 dimension is obtained at (Q) -0.025 because customers expect the equipment at AL Coffee to be more modern or cleaner than what they currently see, tangibles 4 at (Q) -0.425 because customers feel the menu at AL Coffee is less clear or less attractive than their expectations, tangibles 6 at (Q) -0.300 because customers expect AL Coffee to have additional WIFI facilities and quality electrical plugs, reliability 1 at (Q) - 0, 375 because customers expect orders to be placed on time and in accordance with requests, responsiveness 1 of (Q) -0.450 because customers feel that staff are less alert in serving their orders or needs, and assurance 1 of (Q) -0.475 because customers want staff to have a deeper understanding of coffee products but the reality is still lacking, meaning that service quality needs to be improved, namely there are 6 factors that will be used into the House of Quality (Voice of Customer) shown in figure 3.

Matrix relationship symbol

Table 6. Matrix Relationship Symbol

Symbol	Value	Meaning
< blank >	0	No relationship
△	1	Weak relationship
○	3	Moderate relationship
●	9	Strong relationship

Technical correlation symbol

Table 7. Technical Correlation Symbol

Symbol	Meaning
++	Strong positive influence
+	Moderate positive influence
< blank >	No relationship
-	Moderate negative influence
△	Strong negative influence

The House of Quality will be shown in figure 3 below which will prioritize technical responses in answering the Voice of Customer in the HOQ matrix where each technical characteristic has a weight based on its importance in meeting customer needs at AL Coffee.

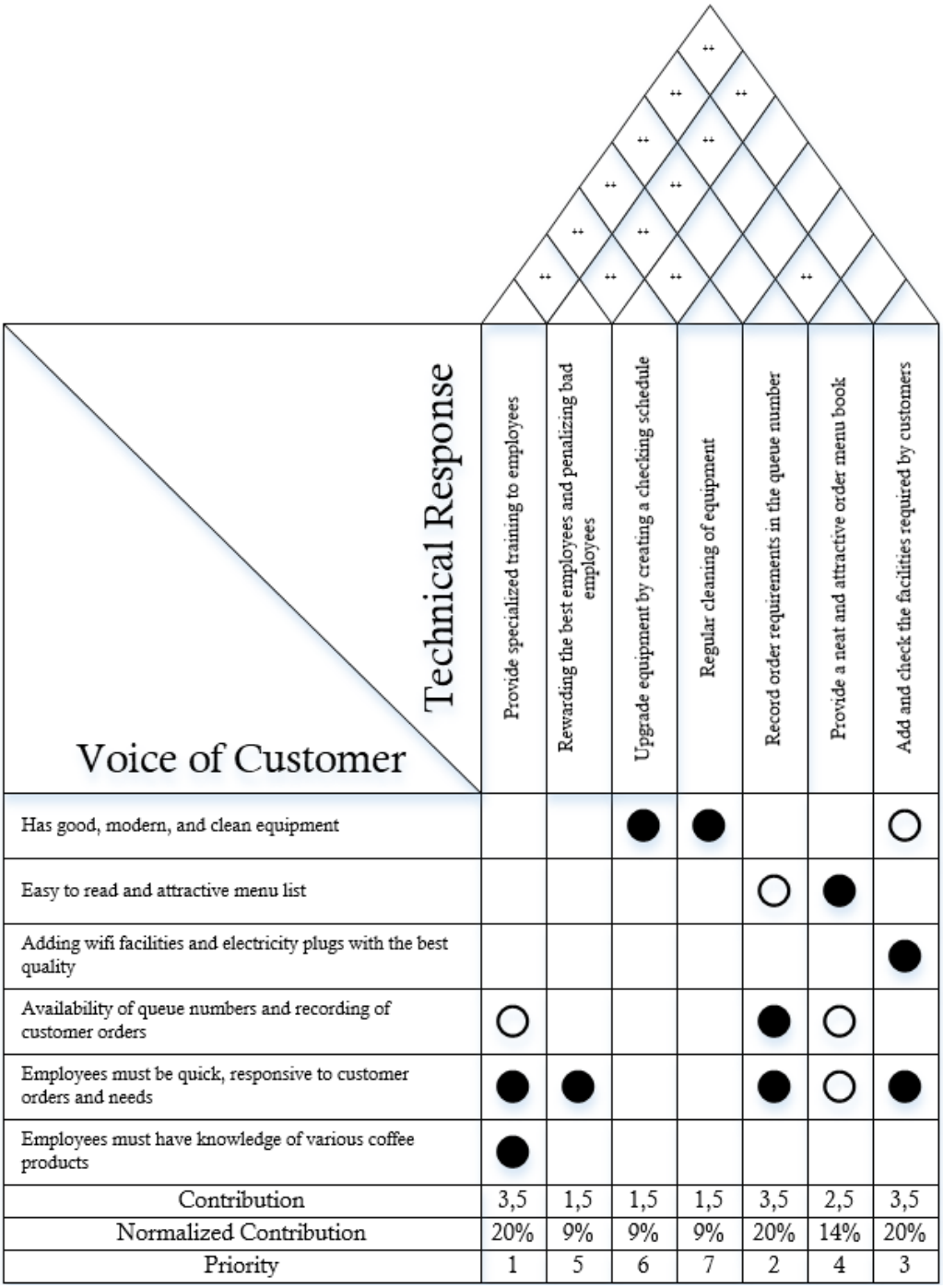

Figure 2. House of Quality Results

Based on figure 3 of the review consequences, there are 7 technical responses made to reply to the research results that have answered customer requirements that will be prioritized, as follows :

1. Provide specialized training to employees.
2. Record order requirements in the queue number.
3. Add and check the facilities required by customers.
4. Provide a neat and attractive order menu book.
5. Rewarding the best employees and penalizing bad employees.
6. Upgrade equipment by creating a checking schedule.
7. Regular cleaning of equipment.

Previous Research

Table 8. Previous Research

Researcher Name	Title	Results
Akhmad Ferdy Firmansyah, Elly Ismiyah, and Moh. Jufriyanto (2021)	Analysis of Customer Satisfaction with Barbershop Services Using Service Quality and Quality Function Deployment Methods	This research was conducted at REF Barbershop on customer service with a negative gap value which resulted in a technical response, namely providing training to improve employee performance and giving awards to employees whose performance has improved and giving sanctions to employees whose performance is not good, providing queue numbers and toilets to increase comfort, improving and scheduling regular quality checks of equipment, making a picket schedule for maintenance and cleanliness of facilities. The results of these technical responses can be useful for building and improving services at REF Barbershop.
Ahmad Irfan Maulana (2024)	Analysis of Service Quality towards Customer Satisfaction at Ayam Geprek Idaman Solo Restaurant Using Servqual and Quality Function Deployment (Qfd) Methods	This research was conducted at Ayam Geprek Idaman Solo Restaurant on service quality with the results of the gap value of 0 resulting in a prioritized technical response, which shows that improvements must be made immediately in the form of adding facilities that are primarily needed such as toilets and fans that can support the sustainability of this business and make customers have comfort while in the food stall. Increasing the accuracy of employees needs to be considered again so that there are no repeated mistakes regarding matters related to service to customers and SOPs in the food stall.
Nur Qomaruddin Rafli, Dzakiyah Widyaningrum, and Moh. Jufriyanto (2021)	Proposed Service Improvements at Sang Esoen Coffee Shop during the Covid-19 Pandemic Using Service Quality and Quality Function Deployment Methods	This research was conducted at Sang Esoen Coffee Shop on service improvement by producing technical responses according to their priorities. The main priority of improvement with a value of 3.374 is to conduct training to improve employee performance/creativity and reward employees whose performance always increases and sanction employees whose performance is poor.

CONCLUSION

Based on the results of the research analysis obtained from ServQual at AL Coffee, there is a gap that occurs on the customer's side between the level of expectations and perceptions, so there are attributes that are not in accordance with customer perceptions with a negative gap value that needs to be corrected. After that, a technical response from the HOQ method is

carried out with the first priority of providing special training to employees by conducting training for 1-2 months and involving experienced staff, record order requirements in a queue number by using a digital queue number system to keep orders more organized, add and check the facilities that customers need by regularly checking and making a list of important facilities that customers need, provide a neat and attractive order menu book by redesigning the menu book with clear fonts, images, and detailed information, rewarding the best employees and penalizing bad employees by establishing a staff performance appraisal system and providing rewards for the best staff every month, upgrade equipment by creating a checking schedule by listing all equipment and checking at the beginning and end of work, and regular cleaning of equipment by using a daily checklist so that cleaning is not overlooked. With this, it is hoped that AL Coffee can improve the quality of service from the technical responses obtained so as to increase revenue.

ACKNOWLEDGEMENTS

Thank you to AL Coffee for accepting me in conducting this research, to improve the quality of service at the AL Coffee place to be successful and good. Hopefully in the future it can be better in handling service quality so that revenue can increase.

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