

Navigating Customer Satisfaction in Public Service Industry: An IPA Approach to Service Excellence

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ABSTRACT

This study aims to determine the level of customer satisfaction and provide suggestions for improving service quality in order to increase customer satisfaction. The study used 15 SERVQUAL attributes. Data analysis methods using gap analysis and IPA model. The results of the study obtained a negative gap and an average conformity level of 79% or moderate satisfaction. The results of customer responses to the dimensions of the company's service quality are analyzed by gap analysis and the IPA method. The results of the analysis are used as evaluation material to improve and improve the quality of service of Perumda Air Minum Tirta Moedal Semarang City. All service SERVQUAL attributes used in this study have a negative gap value (-). This indicates that the quality of service perumda still has a high gap against customer interests. The company's Management Team can improve the speed of officers in handling customer complaints and increase the agility of technical officers in handling technical problems through training, certification, and performance appraisals based on competence. It is hoped that customers will feel the service in accordance with what they expect.

Keywords: *Customer Satisfaction; Service Quality; IPA; Gap Analysis*

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Abstrak

Kajian ini bertujuan untuk mengetahui tahap kepuasan pelanggan dan memberi cadangan penambahbaikan kualiti perkhidmatan bagi meningkatkan kepuasan pelanggan. Kajian ini menggunakan 15 atribut SERVQUAL. Kaedah analisis data menggunakan analisis jurang dan model IPA. Hasil kajian memperoleh jurang negatif dan tahap pemuatan purata 79% atau kepuasan sederhana. Hasil tindak balas pelanggan terhadap dimensi kualiti perkhidmatan syarikat dianalisis dengan analisis jurang dan kaedah IPA. Hasil analisis digunakan sebagai bahan penilaian untuk memperbaiki dan meningkatkan mutu perkhidmatan Perumda Air Minum Tirta Moedal Kota Semarang. Semua atribut kualiti perkhidmatan yang digunakan dalam kajian ini mempunyai nilai jurang negatif (-). Ini menunjukkan kualiti perkhidmatan perumda masih mempunyai jurang yang tinggi terhadap minat pelanggan. Pasukan Pengurusan syarikat boleh meningkatkan kepantasan pegawai dalam mengendalikan aduan pelanggan dan meningkatkan ketangkasan pegawai teknikal dalam menangani masalah teknikal melalui latihan, pensijilan, dan penilaian prestasi berdasarkan kompetensi. Diharapkan pelanggan akan merasai perkhidmatan yang sesuai dengan apa yang mereka harapkan.

Kata Kunci: *Kepuasan Pelanggan; Kualiti servis; IPA; Analisis Jurang*

INTRODUCTION

Water is one of the important needs of society which is useful in everyday life. The benefits of water are also used to fulfill other needs such as cooking, washing and bathing. Water needs are not only obtained from wells or rivers around people's homes but also from water flows provided by a company. One of the companies that provides water sources is the regional public drinking water company. Perumda Air Minum Tirta Moedal Semarang City is one of the regional public companies engaged in clean water services in the city of Semarang. Until now, Perumda Air Minum Tirta Moedal, Semarang City, still receives various complaints from customers, mainly regarding the quality of service. Siyum (2024) suggests that a company must pay attention to service quality because service quality has an important influence on customer satisfaction. Customers feel dissatisfied when the product or service performs below their expectations and vice versa customers will feel satisfied and happy if the service meets expectations (Stankovska et al., 2024). Therefore, companies must pay serious attention to the quality of their services by looking at it from the perspective of customer interests (E. Sulistiyani, 2014).

Complaints experienced by customers of Perumda Air Minum Tirta Moedal, Semarang City can be seen in Google Maps data and customer complaint data. Based on data from Google Maps, there were 547 customers who reviewed all branch offices. The lowest score was obtained by the northern branch office with a score of 1.7. Meanwhile, the highest score is found in the eastern branch office. Overall the average rating for all offices is 2.5. Apart from that, 44.42% of reviewers gave a score of 1, which indicates that the majority of customers felt disappointed with the performance or services provided by Perumda Air Minum Tirta Moedal, Semarang City. Customer complaints are also supported by customer complaint data which increases from year to year. The number of complaints in 2019 was

12,608 complaints, then in 2020 it increased to 13,142. In 2021, the number of complaints increased to 15,309 and in 2022 to 16,957. Most of the customer complaint data is dominated by technical complaints.

Based on these data and descriptions, further research will be carried out with the title "Customer Satisfaction Levels Using the Importance Performance Analysis Method: Study of SERVQUAL Model".

Perumda Air Minum Tirta Moedal, Semarang City, is committed to assisting the government in providing services to meet the needs of drinking water and clean water for the community. However, it has a fairly low review score from customers and the number of customer complaints increases every year. Therefore, this problem must be handled by Perumda Air Minum Tirta Moedal, Semarang City. Based on the background in this research, research questions can be formulated as follows:

1. What is the level of customer satisfaction with the services of Perumda Air Minum Tirta Moedal, Semarang City?
2. What efforts need to be made to increase customer satisfaction at Perumda Air Minum Tirta Moedal, Semarang City?

The objectives to be achieved in this study are:

1. Knowing the level of customer satisfaction of Perumda Air Minum Tirta Moedal Semarang City.
2. Identifying service quality that needs to be improved to increase customer satisfaction.

Literature Review

Expectancy Disconfirmation Theory

Richard L. Oliver in 1980 formulated this theory. A theory commonly used to explain how satisfaction or dissatisfaction is formed. EDT theory is a theoretical model that explains that a sense of satisfaction or dissatisfaction is obtained after purchasing a product and then comparing expectations with actual product performance (Yüksel et

al., 2016). This theory states that consumers form judgments about products or services using their previous expectations about the characteristics or benefits offered by a given product or service. Expectancy Disconfirmation Theory is shaped by personal experience and understanding of the environment, taking into account the feasibility of practice based on expectancy theory. Perceived performance is an estimate of performance that is relatively less influenced based on objective judgment than emotional reactions. Expectancy disconfirmation occurs in three (3) forms: i) Positive disconfirmation: Occurs when perceived performance exceeds expectations. ii) Confirmation: Occurs when perceived performance meets expectations. iii) Negative disconfirmation: Occurs when perceived performance does not meet and is less than expectations. Customers tend to be more satisfied if service performance meets (confirmation) or exceeds (positive confirmation) their expectations (Bollenbach et al., 2024).

Customer satisfaction

Customer satisfaction has become a central concept in business articles. Kotler et al. (2014) state "Customer satisfaction depends on the product's perceived performance relative to a buyer's expectations." From this definition, customer satisfaction comes in the form of individual feelings of satisfaction or disappointment after comparing the actual performance of a service or product with customer expectations. However, if actual performance exceeds expectations, customers will experience a sense of satisfaction and happiness.

SERVQUAL Model

Service Quality

In the SERVQUAL model, service quality is defined as "a global assessment or attitude regarding the superiority of a service"(Parasuraman et al., 1985), while the

definition of service quality is often referred to as service quality (Parasuraman et al., 1988) is how far the difference is between reality and customers' expectations for the service they receive or obtain. Expectations are the desires of customers from the services that may be provided by the company.

Customer service aims to improve and maintain the psychological relationship between customers and the company and is used to monitor various customer complaints (Rane et al., 2023).

Dimensions of Service Quality

According to (Parasuraman et al., 1988) divides five dimensions used to determine service quality, namely:

1. Tangible (relating to the goods used by the company, physical facilities, and the appearance of its employees)
2. Reliability (includes the company's ability to provide services precisely without experiencing errors.
3. Responsiveness refers to the speed of an employee's ability and willingness to respond to customer requests.
4. Assurance) refers to an action to create a sense of security for customers and a high sense of trust in the company.
5. Empathy relates to how a company understands the problems faced by its customers and tries to act in accordance with customers' interests and pays personal attention to them.

Importance Performance Analysis

According to (Park et al., 2023) Importance Performance Analysis (IPA) is a qualitative-quantitative descriptive method for analyzing research data to answer problem formulation regarding the extent of customer satisfaction with the performance of a service. The results of calculating the level of importance and level of performance will be depicted in a cartesian manner consisting

of four quadrants. Each quadrant has a different understanding.

1. Quadrant I (High Priority)
2. Quadrant II (Maintain Achievement)
3. Quadrant III (Low Priority)
4. Quadrant IV (Overperformance)

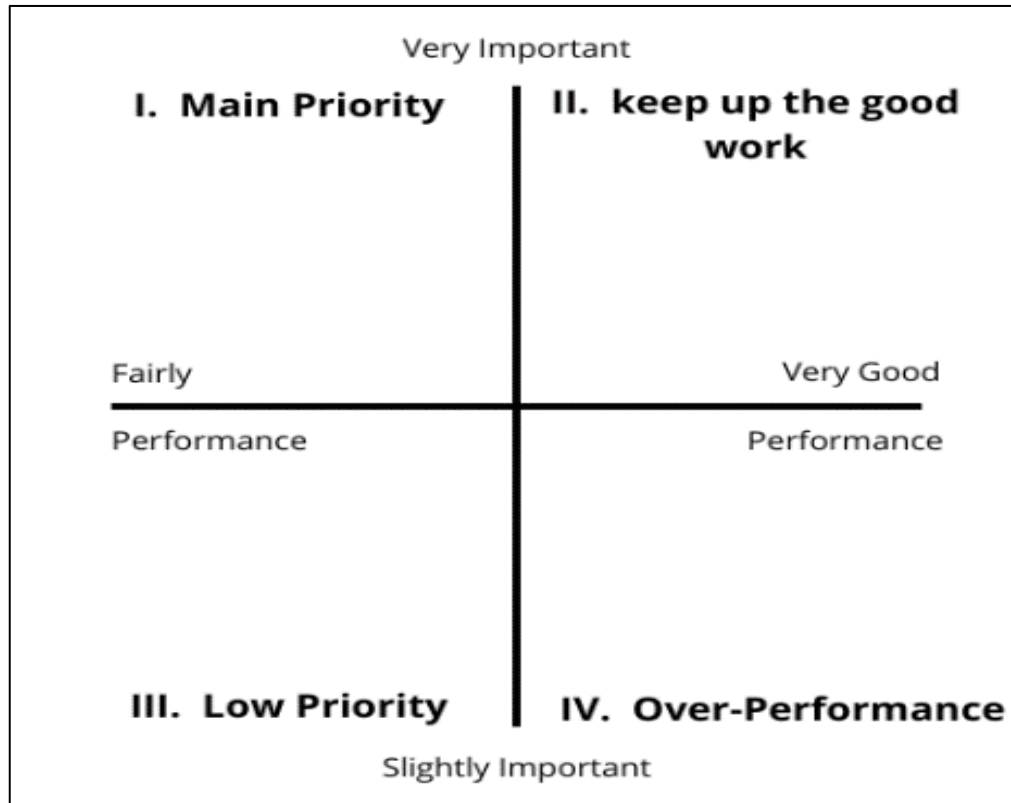


Figure 1. Cartesian Diagram IPA

Theoretical Thinking Framework

A framework needs to be created to create a comprehensive understanding of the observed phenomena or symptoms. A thinking framework is a model that illustrates

the relationship between variables and the model structure (Sekaran et al., 2016). The following is the theoretical framework for this research.

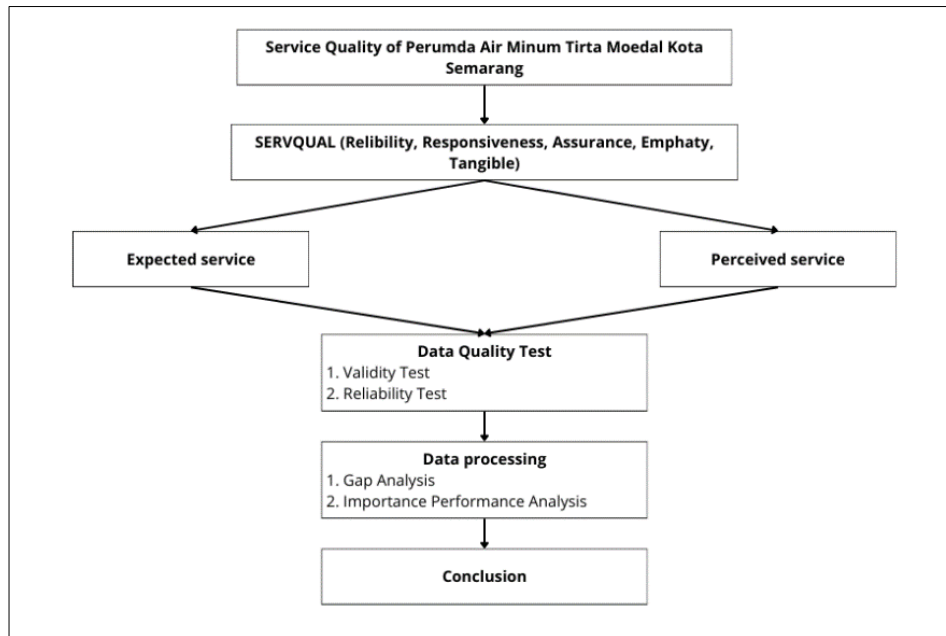


Figure 2. Theoretical Thinking Framework

METHOD AND EXPERIMENTAL DETAILS

The type of research used in this research is research with a quantitative descriptive approach. The population in this study can be seen to be 183,242 customers, then a sample of 300 people was obtained. The type of sampling used is Non-Probability Sampling with Incidental and snowball Sampling technique (Ferdinand, 2014) . Incidental sampling technique, also commonly known as accidental sampling or convenience sampling. Incidental sampling is a non-probability sampling method in which samples are selected based on ease of access and availability. In this technique, the researcher selects individuals or subjects who are most easily accessible or who happen to be in the place and time of the research. The researcher met with customers of Perumda Air Minum Tirta Moedal Semarang City, when they made water meter payments at the office. The researcher came, got acquainted and asked for the customer's willingness to

interview and fill out the questionnaire. Snowball sampling is a sampling technique by interviewing a customer of Perumda Air Minum Tirta Moedal Semarang that we know, then asking him to find another customer to be sampled.

The data sources in this research are primary data and secondary data. Primary data was obtained from questionnaires and interviews, while secondary data was obtained from sources such as books, journals, articles, reports and company data. The measurement scale used in the research questionnaire uses the Semantic Differential scale (1-5). The analytical methods used in this research are gap analysis and Importance Performance Analysis (IPA).

RESULTS AND DISCUSSION

Validity test

Validity testing is carried out with the aim of measuring the validity of the questions in the questionnaire before it is redistributed.

Table 1. Validity Test Results

Question Items of Interest	Sig.	Inform	Performance Question Items	Sig	Inform
A1	0.00	Valid	A1	0.00	Valid
A2	0.00	Valid	A2	0.00	Valid
A3	0.00	Valid	A3	0.00	Valid
B1	0.00	Valid	B1	0.00	Valid
B2	0.00	Valid	B2	0.00	Valid
B3	0.00	Valid	B3	0.00	Valid
C1	0.00	Valid	C1	0.00	Valid
C2	0.00	Valid	C2	0.00	Valid
C3	0.00	Valid	C3	0.00	Valid
D1	0.00	Valid	D1	0.00	Valid
D2	0.00	Valid	D2	0.00	Valid
D3	0.00	Valid	D3	0.00	Valid
E1	0.00	Valid	E1	0.00	Valid
E2	0.00	Valid	E2	0.00	Valid
E3	0.00	Valid	E3	0.00	Valid

Reliability Test

Questionnaire items are considered reliable if they have a Cronbach Alpha value of more than 0.60 (Fateqah et al., 2024).

Using reliable instruments will produce research data with a high level of confidence. Table 2 are the results of the reliability test.

Table 2. Reliability Test Results

Dimensions of Interest	Cronbach's Alpha	Inform	Performance Dimensions	Cronbach's Alpha	Inform
<i>Tangibles</i>	0.791	Reliable	<i>Tangibles</i>	0.804	Reliable
<i>Reliability</i>	0.812	Reliable	<i>Reliability</i>	0.746	Reliable
<i>Responsiveness</i>	0.665	Reliable	<i>Responsiveness</i>	0.787	Reliable
<i>Assurance</i>	0.736	Reliable	<i>Assurance</i>	0.878	Reliable
<i>Empathy</i>	0.811	Reliable	<i>Empathy</i>	0.846	Reliable

Gap Analysis**Table 3.** Gap Value Results

	Average		Gap	Rating
	Importance (Yi)	Performance (Xi)		
A1	4.45	4.29	-0.16	15
A2	4.64	4.20	-0.44	13
A3	4.46	4.17	-0.29	14
B1	4.43	3.61	-0.82	12
B2	4.56	3.68	-0.88	11
B3	4.50	3.36	-1.14	5
C1	4.55	2.91	-1.64	1
C2	4.57	3.17	-1.40	2
C3	4.49	3.45	-1.04	7
D1	4.51	3.45	-1.06	6
D2	4.56	3.63	-0.93	10
D3	4.60	3.43	-1.17	4
E1	4.65	3.63	-1.02	9
E2	4.54	3.29	-1.25	3
E3	4.57	3.55	-1.02	8
	<u>Y</u> 4.54	<u>X</u> 3.59		

The gap value results from the difference between the level of performance and the level of importance. A positive gap (+) will be obtained if the performance score is greater than the importance score, whereas a negative gap (-) will be obtained if the performance score is smaller than the importance score. The resulting gap values are then ranked to make it easier to see the service attributes that have the highest gaps. In the table below, the performance gap and the highest importance is in attribute C1 or the speed of officers in responding to customer complaints. Meanwhile, the lowest gap in performance and importance is in attribute A1 or the payment counter clerk wears neat clothes. However, looking at the overall

results, each attribute has a negative gap value. Table 3 shows that the overall performance of service attributes has not met the interests of its customers.

Analysis of Customer Satisfaction Levels

The results of the suitability level analysis are used to provide an overview of whether customers have received service in accordance with their expectations and provide an overview of the level of customer satisfaction. The suitability level value is obtained from a comparison between the performance score and the importance score. The results of the suitability level are presented in percentage form. (Halawani et al., 2021) divide the percentages as Table 4.

Table 4. Percentage Satisfaction Level

No	Conformity Percentage	Satisfaction Level
1.	20% - 40%	Low Satisfaction
2.	41% - 79%	Medium Satisfaction
3.	80% - 100%	High Satisfaction

Overall the average value of the level of conformity is 79%, meaning that the

quality of service is at a moderate level of satisfaction.

Table 5. Conformity Level Results

		Importance	Performance	Tki
Tangibles	A1	445	429	96%
	A2	464	420	91%
	A3	446	417	93%
Reliability	B1	443	361	81%
	B2	456	368	81%
	B3	450	336	75%
Responsiveness	C1	455	291	64%
	C2	457	317	69%
	C3	449	345	77%
Assurance	D1	451	345	76%
	D2	456	363	80%
	D3	460	343	75%
Empathy	E1	465	363	78%
	E2	454	329	72%
	E3	457	355	78%
Average				79%

Cartesian Diagram Analysis

Cartesian diagrams are used to facilitate analysis of performance improvements by looking at the position of attributes in each quadrant. The horizontal line shows service performance and the

vertical line shows service importance. The X axis is obtained from the average results of performance score answers while the Y axis is obtained from the average results of importance score answers. These two lines become the boundaries for the 4 quadrants.

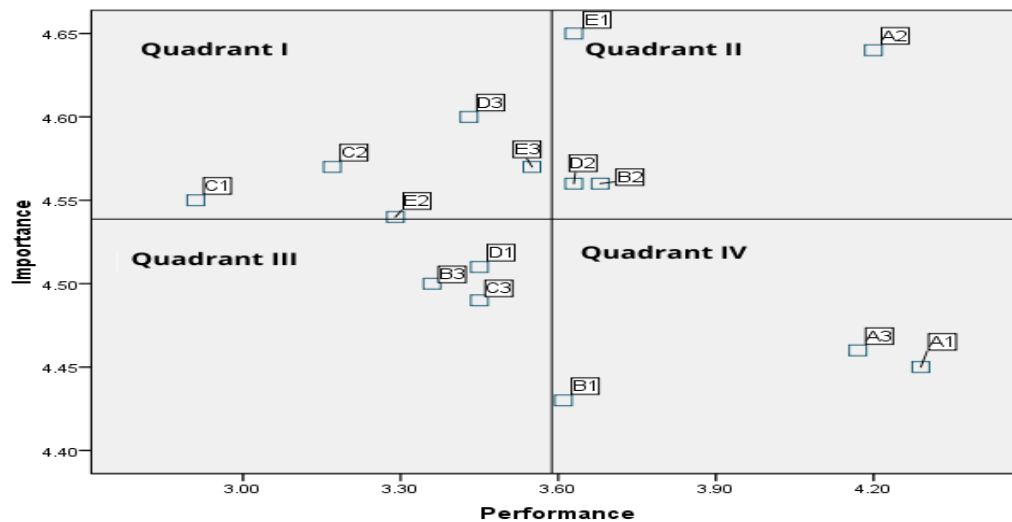


Figure 3. Cartesian Diagram Result

Quadrant I

Quadrant I or the high priority quadrant has high customer interest but low performance realization so it is the company's main priority in improving service quality. The attributes in quadrant I consist of:

1. C1 means officers respond to customer complaints quickly
2. C2 means field officers can solve problems quickly
3. D3, namely technical officers, have good skills in handling technical problems
4. E2, namely the telephone complaint officer, has a friendly attitude in handling customer complaints
5. E3, namely technical officers, have a friendly attitude towards customers.

Quadrant II

Quadrant II or the maintain performance quadrant is the quadrant that contains attributes that are important to customers and the actual performance of the

attributes in this quadrant is in line with what customers expect. Attributes in quadrant II include:

1. A2, namely the payment counter has a clean room
2. B2, namely water bill payments can be done easily
3. D2, namely the payment locker officer, has good skills in handling the payment process
4. E1, namely the payment counter staff, has a good attitude in serving customers.

The performance of all attributes in quadrant II must be maintained by the company so that customers remain satisfied.

Quadrant III

Quadrant III or low priority quadrant is a quadrant that contains several attributes with low importance and also poor

performance realization. Quadrant III is filled with attributes including:

1. D1, namely PDAM officers have good communication skills with customers
2. C3, namely water meter recording officers, can carry out their duties quickly
3. B3 is the ease of submitting complaints via PDAM social media.

Quadrant III is a low priority quadrant, meaning that the attributes included in this quadrant still require improvement even though they are not the main priority. However, it is still possible for customers to consider the attributes in this quadrant to be important, so management needs attention to improve the attributes in this quadrant.

Quadrant IV

Quadrant IV or the overperformance quadrant is a quadrant with attributes with a low level of importance but a high level of performance. This quadrant contains attributes including:

1. B1 means that technical officers can make new connections correctly
2. A3, namely the payment counter has good air conditioning
3. A1 means officers wear neat clothes.

High performance in this quadrant can be the basis for further innovation on these attributes and provide added value to the quality of service provided.

The marketing concept emphasizes the importance of customer satisfaction in supporting the success of a company in order to realize the expected goals (Agag et al., 2024). According Kotler (1994) customer satisfaction means a person's feelings of pleasure or disappointment that arise after comparing the perceived product performance (results) against the expected performance or results. This means that when customers feel dissatisfied with the product offered, the performance is below the expectations of the customer. Based on the

results of the research, the actual performance of the service cannot meet customer expectations. Negative disconfirmation will occur and lead to customer dissatisfaction, because the officer is not quick to handle customer complaints. This will result in customers switching to competing companies that offer better service (Endang Sulistiyani et al., 2024). The fatal result is that customers stop using the products or services offered by the company. Dissatisfied customers tend to leave negative reviews on social media or review sites, this can damage the company's reputation. Dissatisfied customers will tell others about their bad experiences, which can influence potential customers. Employees who have to handle customer complaints that have become larger and more complex may experience stress and increased workload. If customer complaints are not handled properly, it can affect overall employee morale, which can decrease motivation and productivity. Customer complaints can be a valuable source of feedback for the improvement of the company's services, providing an opportunity to learn and improve. The company can increase training and development for employees. The company can provide rewards for employees who excel and invite employees to refreshing to reduce saturation due to high workload.

Implications Of Research

The results of the Importance Performance Analysis (IPA) analysis showed that there were 5 attributes in quadrant I where the attributes in this quadrant were recommended for major improvements and needed to be improved in service quality because this factor was considered important by customers, whereas in reality the service performance was still below customers' expectations. Improvement steps that can be taken by the management of Perumda Air Minum Tirta Moedal Semarang City include:

1. Attribute C1 is that officers respond to customer complaints quickly

- a) Management must ensure and further evaluate the speed of service response from officers.
 - b) Establish high service operational standards to encourage the speed of response by officers
 - c) Conduct regular performance monitoring of officers to ensure the services provided can be carried out quickly.
2. Attribute C2 is that field officers can solve problems quickly
- a) Create an automatic monitoring system with artificial intelligence to detect disturbances in the field directly so that officers can be directed directly to the right location without waiting for customer complaint reports.
 - b) Form an emergency response team that is ready at any time to respond quickly to disturbances or major problems.
 - c) Routinely implement a priority scale system based on the urgency of customer complaints so that important problems can be resolved quickly.
 - d) Increase the number of technical officers so that the process of handling problems can be carried out quickly without having to wait in queues if at any time there are many problems at the same time.
3. Attribute E2 is that the complaint telephone officer has a friendly attitude in handling customer complaints.
- a) Provide special training for telephone complaint officers on communication skills.
 - b) Hold an incentive or reward program for telephone complaint officers who achieve certain targets in serving customers.
4. Attribute E3 is that technical officers have a friendly attitude towards customers
- a) There is a need for special skills training regarding communication and friendliness for technical officers when on duty in the field.
5. Attribute D3 is that technical officers have good skills in handling technical problems.
- a) Routine and scheduled training needs to be held to update technical officers' knowledge in handling technical problems.
 - b) There is a need for special competency certification for technical officers so that the company guarantees that the officers deployed are professional officers
 - c) Collaborating with other technical experts outside the company such as academics or other industrial professionals to provide insight regarding handling complex problems that occur in the field.
 - d) Carry out work assessments of technical officers based on their skills and always provide feedback on the performance they have carried out.

CONCLUSION

Based on the results of the research that has been carried out, the following conclusions can be drawn:

- a) The average level of conformity level of service quality for Perumda Air Minum Tirta Moedal, Semarang City is 79% or is at a moderate level of satisfaction. Besides that, all the attributes used in this research have negative gap results (-). The results of the gap analysis show that overall the service performance of Perumda Air Minum Tirta Moedal, Semarang City still has a high gap or is still not in accordance with the level of customer interests.
- b) There are 5 attributes that must be improved by Perumda management, including: the response of officers in

responding to customer complaints, the speed of field officers in resolving problems quickly, the friendliness of telephone complaint officers, the friendliness of technical officers, and the skill of technical officers in handling technical problems. These five attributes are the main focus for improving service quality in order to increase customer satisfaction.

Recommendation

Recommendations that can be given for improving company services and future research agendas are as follows:

- a) This study only used a sample of 100 respondents, future research should use a larger sample so that it is hoped that the research results will be more accurate and on target.
- b) This research needs to be developed by adding other variable indicators such as water quality, price, and E-Quality Service.
- c) The main director should improve the quality of service, especially on the attributes in quadrant I and maintain the attributes in quadrant II.

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