

Service Quality Relationship With Customer Satisfaction In Pdam

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Abstract

PDAM Surabaya is a company engaged in the field of clean water supply services. One of the goals in the form of PDAM is to meet the community's need for clean water, including the provision, development of facilities and infrastructure services and the distribution of clean water, while another goal is to participate in developing the economy to support regional development by expanding employment opportunities, and seeking profit as the main source. regional financing. PDAM Surabaya as one of the BUMDs is expected to be able to provide adequate marketing. Only companies that have advantages at the global level are able to satisfy and meet consumer needs and are able to produce quality products and are cost effective (Mulyadi, 2001). In order to achieve excellent marketing services, companies are faced with. The determination of the marketing strategy will serve as the basis and framework for realizing the work targets determined by management. Therefore we need a tool to determine the marketing strategy so that it can be seen to what extent the strategy and what has been determined can be achieved. Assessment of marketing targets plays an important role in the business world, due to the evaluation of the marketing strategy can be seen the effectiveness and determination of a strategy and its application within a certain time. The marketing strategy can approach the weaknesses and deficiencies that are still present in the company, for further improvements to be made in the future.

Keywords: PDAM, BUMD, Service Quality, Consumer Satisfaction.

INTRODUCTION

Water is a basic need for every living creature in this world, including humans. Without water, humans will experience difficulties in sustaining their lives, therefore the processing must be arranged in such a way that it can be utilized effectively and efficiently. Water is a national resource that concerns the lives of many people, so the management and management of water is managed by the government. This is in accordance with the Constitution

1945 Article 33 paragraph (3), which reads as follows:

Earth and water and the natural resources contained therein are controlled by the state and used for the greatest prosperity of the people.

In Article 10 of Law no. 22 of 1999 concerning Regional Government states that regions have the authority to manage regional resources available in their areas and are responsible for maintaining environmental sustainability in accordance with statutory regulations. As a form of handing over part of government affairs in the field of public works to the regions, drinking water services are handed over to the regional government. Furthermore, through regional regulations the implementation is left to all agencies. In this case the relevant agency is the Regional Drinking Water Company (PDAM), where PDAM is a Regional Owned Enterprise (BUMND).

PDAM Surabaya is a company engaged in the field of clean water supply services. One of the goals in the form of PDAM is to meet the community's need for clean water, including the provision, development of facilities and infrastructure services and the distribution of clean water, while another goal is to participate in developing the "economy to support regional development by expanding employment opportunities, and seeking profit as the main source. regional financing.

PDAM Surabaya as one of the BUMDs is expected to be able to provide adequate marketing. Only companies that have advantages at the global level are able to satisfy and meet consumer needs and are able to produce quality products as wellcost *effective*(Mulyadi, 2001) In order to achieve excellent marketing services, companies are faced with. The determination of the marketing strategy will serve as the basis and framework for realizing the work targets determined by management. Therefore we need a tool to determine the marketing strategy so that it can be seen to what extent the strategy and what has been determined can be achieved. Assessment of marketing targets plays an important role in the business world, because by evaluating a marketing strategy, it is possible to determine the effectiveness and determination of a strategy and its implementation within a certain period of time. The marketing strategy can approach the weaknesses and deficiencies that are still present in the company, for further improvements to be made in the future.

The problem based on the existing phenomenon is the existence of complaints from customers about the quality of service to consumer satisfaction at PDAM Surabaya, namely:

1. Water often does not flow to consumers, especially during the dry season. It seems that the PDAM has not prepared for the possibility of water scarcity for the public or consumers, so that there are many complaints about PDAM services regarding water readiness for the community.
2. Water scarcity is a public or consumer complaint with the absence of PDAM services so that the public or consumers are not satisfied so they choose and buy services such as selling water using gallons of water using a wheel in a certain area.
3. The existence of a specified time limit for the use of water by the community or consumers is an influence of service quality on consumer satisfaction at PDAM.

LITERATURE REVIEW

In obtaining a guide to further deepen the problem, it is necessary to put forward a scientific theoretical basis. In this theoretical basis, theories related to the materials used in problem solving are put forward, namely theories about service factors and their influence on customer satisfaction.

Marketing Management

Definition of Marketing

The marketing concept is used in exchange or trading activities. Marketing is one activity that can determine the success of achieving company goals. The purpose of marketing activities is to increase sales that can generate profits by satisfying consumer needs and wants. Companies always try to meet consumer needs for products and services that will benefit from the exchange process.

According to Kotler and Keller (2007), marketing plays an important role in the company, because the marketing department deals directly with consumers and the environment outside the company. The American Marketing Association defines marketing as an organizational function and a set of processes for creating, communicating and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders.

Definition of Marketing Management

Marketing Management plays an important role in the company because marketing management manages all marketing activities.

Understanding Marketing Management according to Kotler-Keller in his book Marketing Management Indonesian edition (2007; 6) Marketing management as the art and science of choosing target markets and getting, keeping, and growing customers by creating, delivering and communicating superior customer value.

According to Kotler and Armstrong (2004: 130) in their book Marketing Principles, states that: Marketing Management is an activity of analyzing, planning, implementing, and supervising all activities (programs), in order to obtain profitable exchange rates with target buyers in order to achieve organizational goals.

Service

Definition of Services

Marketing thought originally developed from selling physical products. Meanwhile, the extraordinary growth in services has occurred since the 1960s when market conditions were declining and environmental upheaval increased, so that service marketing became one of the main megatrends. However, in the next era there was consolidation and war over the market, because there was *over expansion of supply* in every sector of the service sector such as hotels, airlines, brokerage, finance, newspapers to retail business. This encourages the growth of special attention in the matter of service marketing. Services themselves are pure products of a company or services can accompany a product purchased by consumers.

Definition of services according to Philip Kotler and Kevin Lane Keller (2009:36) are as follows: All actions or performance that can be offered by one party to another which is essentially intangible and does not result in any ownership.

Service Characteristics

Service products have different characteristics from goods (physical products). According to Kotler and Armstrong (2008; 292-293) there are four service characteristics, namely:

1. Services are intangible (Intangibility)

Means that services cannot be seen, felt, touched, heard or smelled before they are purchased.

2. Services are inseparable (Inseparability)

Services cannot be separated from their providers, regardless of whether the service provider is a person or a machine.

3. Variability of services (Variability)

Service quality depends on who provides the service and when, where, and how the service is provided.

4. Services can be destroyed (Perishability)

Services cannot be stored for later sale or use.

So a service is an intangible action or action that is offered for sale to another party that has several characteristics: *intangible*, *inseparability*, *variability* and *perishability*.

Service Classification

A company's offering to the market usually includes several types of services. This service component can be a small part or a major part of the overall offering. In fact, an offer can vary from two extreme poles, namely pure goods on the one hand and pure services on the other.

According to Tjiptono (2004; 6) service offerings can be divided into five categories, namely:

1. Pure physical product

The offering consists solely of the physical product. For example body soap, toothpaste or laundry soap, without any services or services accompanying the product.

2. Physical product with supporting services

In this category the offer consists of a physical product accompanied by one or several services to increase the attractiveness of its consumers. For example, a car manufacturer must offer far more than just selling a car, which includes delivery services, repairs, installation of spare parts, and so on.

3. Mix (Hybrid)

The offer consists of goods and services of equal size.

4. Major services supported by minor goods and services

The offer consists of a main service together with additional (complementary) services and or supporting goods. For example airplane passengers who buy service transportation.

During the journey to the destination, there are several elements of physical products involved, such as food and drinks, magazines or newspapers provided, and so on. Services like this require goods that are *intensive capital* (in this case aircraft) for its realization, but the main offer is services.

5. Pure merit

The offer is almost entirely in the form of services. For example physiotherapy, consultation, psychology, massage and others.

As a consequence of the wide variations in the marketing mix between goods and services, it is difficult to classify services without making further distinctions. Many experts carry out the classification of services, where each expert uses the basis of differentiation with their own point of view.

Classification of services can also be done based on seven criteria according to Lovelock (1987) quoted by Tjiptono (2004; 8), namely:

1. Market segment

Based on the market segment, services can be divided into final consumer services (eg taxis, life insurance, education) and services to organizational consumers (eg accounting and taxation services, legal consulting services). Actually there are similarities between the two market segments in the purchase of services. Both the final consumer and the organizational consumer both go through a decision-making process, even though the factors that influence their purchase are different. The main differences between the two segments are the reasons for choosing services, the quality of services required, and the complexity of performing these services.

2. The level of embodiment (*tangibility*)

This criterion relates to the level of involvement of physical products with consumers. Based on these criteria, services can be divided into three types, namely:

a. *Rented Goods Service*

In this type, consumers rent and use certain products based on certain rates for a certain period of time. Consumers can only use the product, because the ownership remains with the company that leases it. For example car rental, laser disc, villas, apartments, and others.

b. *Owned Goods Service*

Owned goods service, products owned by consumers are repaired, developed or improved for work, or maintained/maintained by service companies. This type of service also includes changes in the form of products owned by consumers.

Examples include repair services, car washes, golf course lawn maintenance, garden maintenance, laundry, and others.

c. *Non Goods Service*

The special characteristics of this type are personal services *intangibles* (not in the form of a physical product) offered to customers. For example drivers, baby sitters, lecturers, tutors, tour guides, beauticians, and others.

3. Service provider skills

Based on the skill level of the service provider, services consist of: *professional service* (eg management consultants, legal consultants, tax consultants, information systems consultants, doctors, nurses and architects) and non-professional services (eg taxi drivers and night guards). In services that require high skills in the operational process, customers tend to be very selective in choosing service providers. This is what causes professionals to bind their customers. Conversely, if it does not require high skills, customer loyalty is often low because there are so many offers.

4. Organizational goals

Based on organizational goals, services can be divided into *commercial service* or profit services (eg airlines, banks and parcel services) and non-profit services (eg schools, foundations, aid funds, orphanages, libraries and museums).

5. Regulation

From aspect *regulation*, services can be divided into regulated services (eg brokers, public transportation, and banking) and non-regulated services (such as brokers, catering, and house painting).

6. Employee intensity level

Based on the level of employee intensity (labor involvement), services can be grouped into:

a. *Equipment based service* (such as automatic car washes, long distance telephone line services, ATMs (Automatic Teller Machines), vending machines and laundries).

b. *People based service* (such as football coaches, security guards, accounting services,

management consulting, and legal consulting).

7. Level of service provision box and customers

Based on this level of contact, services can generally be divided into: *high contact service* (such as universities, banks, doctors and pawnshops) and low contact services (eg cinemas). In services with a high level of customer contact, interpersonal skills must be considered by service companies. On the other hand, for services with a low level of contact, it is precisely the technical skills of the employees that are most important.

Service Company Marketing Strategy

Service business is very complex, because many elements can influence it, including internal organizational systems, physical environment, personal contact, advertising, billing and payment, word of mouth comments. Seeing the complexity in marketing services. Kotler (2005; 117-118) states that service marketing requires not only external marketing, but also internal marketing, and interactive marketing.

1. External marketing (*external marketing*)

Describes the work to prepare, price, distribute, and promote the service to consumers.

2. Internal marketing (*Internal marketing*)

Describes work for and motivates its employees to serve customers well.

3. Interactive marketing (*Interactive marketing*)

Describe the ability of employees in serving clients. Because the client assesses the service not only based on its technical quality, but also based on its functional quality.

Service quality

Definition of Quality and Quality of Service

The definition of quality according to Joseph Juran in Lupiyoadi (2006; 176) are: Quality can be defined as costs that can be avoided and cannot be avoided.

While the definition of quality according to Philip Kotler (2007; 180) is: quality is the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

In the last decade, the meaning of quality has been seen more from the consumer's point of view, because companies have realized that the company's survival depends on consumers. Such is the meaning of a consumer's loyalty for the company, it is appropriate if the consumer is placed in the most important position to be satisfied.

The quality or quality of a service is something that really needs to be considered by every company. Low quality will put the company in a disadvantageous position, because if consumers feel that what the company offers is unsatisfactory, then consumers will most likely use the services of other companies. The concept of quality itself is basically relative, that is depending on the perspective used to determine its characteristics and specifications.

Main Factors In Determining Service Quality

Consumer expectations and assessments of company performance involve several determinants of service quality Parasuraman et al quoted by Tjiptono (2006: 69) There are 10 main factors that determine service quality, namely:

1. *Reliability*

Includes two main things, namely work consistency (*performance*) and the ability to be trusted (dependability). This means every company delivers its services right from the first moment

2. *Responsiveness*

Namely the willingness or readiness of employees to provide services according to the agreed schedule.

3. *Competence*

This means that everyone in a company has the skills and knowledge needed to be able to provide certain services.

4. *Access*

Includes convenience to be contacted and found. This means the location of service facilities that are easy to reach, the waiting time is not too long, the company's communication channels are easy to contact, and so on.

5. *Courtesy*

Includes the attitude of courtesy, respect, attention and friendliness possessed by the *contact personnel* (such as receptionists, telephone operators, etc.).

6. *Communications*

This means providing information to customers in a language they can understand, and always listening to customer suggestions and complaints.

7. *Credibility*

That is honest and trustworthy. Credibility includes company name, company reputation, personal characteristics *contact personnel*, and interactions with customers.

8. *Security*

That is safe from danger, risk, or doubt. This aspect includes physical security (*physical safety*) and financial security.

9. *Understanding Knowing the Consumer*

Namely management efforts in understanding the needs and wants of customers.

10. *Tangibles*

That is physical evidence of services, can be in the form of physical facilities, equipment used, physical representation of services.

Tjiptono (2006;80) there are five gaps that cause the company's failure to deliver its services, the five gaps are:

1. Gap between consumer expectations and management perceptions

In fact, the management of a company cannot always feel or understand exactly what customers want.

2. Gap between management's perception of consumers and service quality specifications.

Sometimes management is able to understand exactly what customers want, but they do not set clear performance standards. This could be due to three factors, namely:

- a. There is no total management commitment to service quality.
- b. Lack of resources.
- c. Or because there is excess demand.

3. Gap between service quality specifications and service delivery.

There are several reasons for this *gap* this, for example:

- a. Employees are less trained (have not mastered their duties).
- b. The workload is over the limit.
- c. Unable to meet performance standards,

4. Gap between service delivery and external communication

Often customer expectations are influenced by advertising and the plethora of statements or promises made by companies.

5. Gap between perceived service and expected service

This gap occurs when customers measure the company's performance/achievement in different ways, or it could also be wrong to perceive the quality of the service.

Factors Causing Poor Service Quality

According to Tjiptono (2008;96) Various factors can cause the quality of a service to be bad. These factors include:

a. Production and consumption occur simultaneously

As a result, problems arise regarding the interaction of producers and service customers. Some of the deficiencies that may exist in employeeservice providers and can influence customer perceptions of service quality, for example employees who are not skilled in serving customers, how to dress inappropriately, what they say is impolite or even obnoxious, body odor is disturbing, always sullen or looks haunted.

b. High work intensity

Incentive workforce involvement in service delivery can also cause quality problems, namely a high level of variability. The things that can affect it are low wages, inadequate or even inappropriate training, levelturnovershigh employees, and others.

c. Support for internal customers (intermediary customers) is inadequate.

Employee*front line* are the spearhead of the service delivery system, not only are they the face of the organization, but they are often the reflection of the service that consumers perceive.

d. Communication gaps

If there is a gap in communication, a negative assessment or perception of service quality will arise. There are several types of communication gaps that commonly occur, namely:

1). Service providers make excessive promises, so they cannot fulfill them.

2). The company's communication messages are not understood by customers.

3). The company does 'not pay attention to or immediately respond to customer complaints/suggestions.

e. Treat all customers the same way.

Customers are unique individuals with their own preferences, feelings and emotions. In terms of interaction with service providers, not all customers are willing to receive uniform service (*standardized services*). It often happens that there are customers who want or even demand services that are personal and different from other customers.

f. Excessive expansion or development of services.

On the one hand, introducing new services or improving existing services can increase business growth opportunities and prevent poor service from occurring. On the other hand, if there are too many new services and additions to existing services, the results obtained may not be optimal, it is even possible for problems to arise regarding service quality standards.

g. Short term business vision.

Short-term business visions (eg, an orientation towards achieving annual sales and profit targets, cost savings, increased annual productivity, etc.) can be detrimental to the quality of services being built in the long term.

Strategy to Improve Service Quality

Improving service quality is not as easy as turning the palm of the hand or pressing a light switch, many factors need to be considered. These efforts also have a broad impact, namely on the overall organizational culture.

According to Tjiptono (2008; 99) there are several ways that must be done to achieve excellent service, namely:

1. Identify the Main Detriminants of Service Quality

Every service provider must strive to deliver the best quality service to its target customers.

2. Manage customer expectations

Lately, many companies are trying to do everything they can to attract as many customers as

possible, including dramatizing or exaggerating their communication messages with exaggerated promises. For this reason, there is a wise saying that can be used as a guideline: do not promise what cannot be delivered, but give more than what is promised.

3. Managing Proof of Service Quality

Evidence of service quality management aims to strengthen customer perceptions during and after the service is delivered.

4. Educating Consumers About Services

Assisting customers in understanding a service is a positive effort to realize the process of delivering and consuming services effectively and efficiently.

5. Fostering a Quality Culture

Quality culture is an organizational value system that creates a conducive environment for the establishment and continuous improvement of quality. In order to create a good quality culture, overall commitment from all members of the organization is required.

6. Creating Automated Quality

Automation has the potential to overcome the problem of service quality variability caused by a lack of human resources in an organization. The balance of high touch and high tech is needed to support the success of delivering services effectively and efficiently.

7. Follow Up Services

Service follow-up is needed in order to perfect or improve unsatisfactory service aspects and maintain good aspects.

8. Developing a Service Quality Information System

The information needed covers all aspects, namely current and past data, quantitative and qualitative.

Consumer Satisfaction

Definition of Consumer Satisfaction

Satisfaction after making a purchase depends on the offer's performance in meeting the buyer's expectations. Consumers experience different levels of satisfaction after experiencing each service according to the degree to which their expectations are met. The problem of satisfaction is a subjective problem, one's satisfaction is not necessarily the same as the satisfaction used by other people, even though the services they provide have the same characteristics or quality of service. Because of this satisfaction is very difficult to measure quantitatively.

According to Kotler and Keller translated by Molan (2007; 177) what is meant by satisfaction is: Satisfaction is a person's feeling of pleasure or disappointment that arises after comparing the performance (results) of the product in question to the performance (or results) expected.

Customer Satisfaction Measurement Techniques

According to Kotler and Keller cited by Tjiptono (2005; 367) there are several methods that can be used by each company to measure and monitor customer satisfaction (as well as competitors' customers). There are four methods to measure satisfaction, namely:

a. Complaint and suggestion system (suggestion and recommended)

Every customer-oriented company needs to provide the widest possible opportunity for its customers to submit their suggestions, opinions and complaints. Media that can be used are in the form of suggestion boxes placed in strategic places (which are easily accessible or frequently passed by customers), providing comment cards (which can be filled in) directly or sent via post to the company), provide special telephone lines (customer hot lines), and others.

b. Periodic Surveys

In general, a lot of research on customer satisfaction is carried out using the survey method,

whether by post, telephone, or personal interviews.

c. **Mystery Shoppers (mystery shoppers)**

This method is carried out by employing several people (*ghost shopper*) to play a role or act as a potential customer/buyer of the company's products and competitors.

d. **Lost Consumer Analysis (customer loss rate)**

This method is a little unique. The company tries to contact its customers who have stopped buying or who have switched suppliers.

Factors Causing Customer Dissatisfaction

Customer expectations are formed and based on several factors, including past shopping experiences, the opinions of friends and relatives, as well as information and promises from the company and competitors. (Kotler and Armstrong) quoted by Tjiptono (2006; 150).

Basically, customer satisfaction and dissatisfaction with the product will affect the next pattern of behavior, this is shown by the customer after the purchase process occurs. If the customer is satisfied, then he will show the possibility of repurchasing the same product. Satisfied customers also tend to provide good references to other products.

Consumer Satisfaction Strategy

There are several strategies to meet consumer satisfaction, according to Fandy Tjiptono (2006; 161) consumer satisfaction strategies are as follows:

1. **Relationship Marketing Strategy**

In this strategy, the transaction relationship between the service provider and the customer is ongoing, not ending after the sale is completed.

2. **Strategy Superior Customer Service**

This strategy seeks to offer services that are superior to competitors. To make it happen requires large funds, human resource capabilities, and persistent effort.

3. **Strategy Unconditional Guarantee**

Strategy unconditional guarantee commitment to provide satisfaction to customers which in turn will be a source of dynamism in improving service quality and company performance. In addition, it will also increase the motivation of employees to seek better levels of performance than before.

4. **Complaint Handling Strategy**

Good complaint handling provides an opportunity to turn an unsatisfied customer into a satisfied customer (or even a permanent customer).

Effect of Service Quality on Consumer Satisfaction

As previously known that services are not tangible (*intangibles*) where the service cannot be felt, seen, touched before buying. Thus customers will look for signs or evidence of the quality of the service (service) through the other people, equipment and prices they see. In the difference between purchasing services with services difficult to do. This is because the purchase of an item is often accompanied by certain services (eg TV shops) and conversely the purchase of a service often involves accompanying goods (eg restaurants and cafes).

Companies that have competence in the fields of marketing, manufacturing and innovation can make it a resource to achieve competitive advantage (Daengs GS, et al. 2020: 1419).

To find out the results of the data, the technique of data analysis is also used to test the hypotheses put forward by the researchers, because the analysis of the data collected to determine the effect of the independent variables on the related variables is used multiple linear statistical test. (Enny Istanti, et al, 2020: 113).

RESEARCH METHODS

In this study the authors used a descriptive-verification method.

According to Malhotra (2007; 78) states descriptive research is as follows: Descriptive research is a type of conclusive research that has is major objective the description of something-usually characteristics or functions.

In this study, descriptive research was used to describe the service quality and satisfaction of water service users in PDAM Surabaya. Meanwhile, to analyze the relationship between variables used verification method.

The number of samples is determined using the formula proposed by Slovinquoted by Umar (2002; 34) using the formula:

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

Information :

n = sample size for research

N = Population Size

e = Percent of sampling discrepancies still tolerated (10%)

Population data is based on data from the company, namely the number of consumers who subscribe to the PDAM on average per month as many as 200 consumers. So it is estimated that in one year there will be around 2400 consumers (population size).

In order to obtain the number of samples as follows:

$$\begin{aligned} N &= \frac{2,400}{(2,400 \times 0.1^2) + 1} \\ &= 96 \text{ rounded up to } 100 \end{aligned}$$

So based on the calculation above, the number of respondents studied was 100 people.

Furthermore, the interpretation of variables x and variable y uses the following table, which is obtained from the formulation put forward by Riduwan (20003: 15)

With Formula:

$$\frac{\text{Highest Score} - \text{Lowest Score}}{\text{Interval Class}}$$

$$\frac{5 - 5}{5} = 0.8 \text{ (intervals)}$$

Whether or not the relationship between variable X and Y variable is strong is measured by a correlation number as categorized by Riduwan (20003: 15), as follows :

Correlation Intervals	Relationship Level
1 - 1.79	Very weak
1.8 - 2.59	Weak
2.6 - 3.39	Enough
3.9 - 4.19	Strong
4,2 - 5	Very strong

The interpretation of the variable x and variable y is:

intervals	X variable	Y variable
1 - 1.79	Not very good	Very unsatisfactory
1.8 - 2.59	Not good	Less satisfactory
2.6 - 3.39	Pretty good	Good enough
3.9 - 4.19	Well	Satisfying
4,2 - 5	Very good	Very satisfactory

Once the relationship between each variable is known, it can be determined how much influence service quality has on consumer or community satisfaction by using the coefficient of determination (Kd), with the following formula:

$$Kd = r \times 100 \%$$

The Kd value above shows what percentage of an independent variable affects the dependent variable and other independent variables are ignored.

A variable can be predicted from the predicted variable (*criterion*) and the variables used to predict (predictors) have a significant correlation (relationship).

According to Hadi (2001: 2) The main tasks of the regression analysis are:

1. Find the equation of the regression line.
2. Looking for correlations between ktiteruim and predictors.
3. Test whether the correlation is significant or not.

If there is data consisting of two or more then it is appropriate to study the relationship of these variables. The relationships obtained are generally expressed in the form of mathematical equations which state the functional relationships between variables. In conducting the analysis of these variables, the authors use technical analysis as follows:

1. Preliminary analysis namely validity and reliability test
 - a. Validity test is defined as a measure of how accurately a test tool performs its measuring function. So the higher the validity obtained, the results are more on target. This test is carried out with internal validity, namely the criteria used come from within the test kit itself, in which each aspect is correlated with the total value obtained from the product correlation coefficient. The formula for the validity test according to Arikunto (1998: 162) is:

$$r_{XY} = \frac{N\Sigma XY - (X)(\Sigma Y)}{\sqrt{\{N\Sigma X^2 - (\Sigma X)^2\}\{N\Sigma Y^2 - (\Sigma Y)^2\}}}$$

Statistically, the correlation number obtained is compared with the critical value of the correlation table for the value of r. If the r table is above, then the question is significant or valid.

- b. Reliability is an index that shows the extent to which a measuring device in this case a questionnaire can be trusted or reliable. If the measuring instrument is used twice to measure the same symptoms and the measurement results obtained are relatively consistent, then the measuring instrument is reliable.

DISCUSSION

Research result

In this study the authors distributed 100 copies of the questionnaire to consumers of PDAM Surabaya. This questionnaire consists of two parts, namely the first part is the consumer's response to the quality of service and the second is the consumer's response to the customer satisfaction of PDAM Surabaya.

To get an overview of the consumers who are respondents in this study, the following describes the grouping of respondents based on several classifications to make it easier to do the analysis. The following are tables compiled to provide an overview of the composition of respondents.

Validity and Reliability Test

Validity is done by correlating each statement with the total score of each variable. Validity is defined as the extent to which the accuracy and accuracy of a measuring instrument in carrying out its function. Therefore, the authors tested the validity level of the questionnaire distributed to the respondents. The results of the validity test are used with the help of the SPSS 18.0 program, each variable is as follows:

Based on the results of the validity test, it shows that the correlation value of each statement item with a total score obtained is greater than 0.195 so it can be concluded that the statement items used are valid and can be used in subsequent data analysis.

Respondents' responses to PDAM Surabaya City Service Quality

Through the statements given by the author in the questionnaire distributed for research purposes, it can be seen the respondents' expectations of the service quality of PDAM Surabaya city. The nineteen statements proposed aim to find out how respondents expect the quality of services provided.

reliability

This is because the level of consistency in performing good services can speed up service delivery, making it easier for consumers of clean water services to meet their needs.

Because the neat and clean place after the handling process can make consumers feel happy because they don't need to tidy up again where there are problems.

Based on the questionnaire distributed to the respondents, it can be seen regarding the respondents' responses to the level of importance of the services provided by PDAM Surabaya City, to facilitate the assessment of the respondents' answers, the following assessment criteria were made:

Very Good (SB) = 5

Good (B)= 4

Good Enough (CB) = 3

Not Good (TB) = 2

Very Not Good (STB) = 1

Respondents' responses to PDAM Surabaya City Customer Satisfaction

Through the statements given by the author in the questionnaire distributed for research purposes, it can be seen the level of satisfaction of respondents to customer satisfaction of PDAM Kota Surabaya. The eight statements proposed aim to find out how the respondents' expectations of the customer satisfaction are given.

Table 3.

Availability of suggestion box in PDAM Kota Surabaya in

respond to consumers

Based on the table above, it can be seen that the respondents' responses to the availability of suggestion boxes at PDAM Kota Surabaya in response to consumers, who stated strongly agreed were 9 respondents (9%), who stated that they agreed were 73 respondents (73%), and those who stated quite agree as many as 18 respondents (18%). Of the 100 respondents as a whole it can be concluded that the availability of a suggestion box in PDAM Kota Surabaya in response to consumers expressing agreement is seen from the average score of 3.91 which is in the interval 3.40 - 4.19.

But there is still something that needs to be considered because it has a value below the average, namely the statement of the availability of a suggestion box in response to consumers, the availability of comment cards that can be filled in as consumer complaints, the availability of guarantees to deal with complaints to each consumer, the company will conduct an appeal test against the seller other water as a form of assessing the shortage of PDAM companies.

CONCLUSION

1. The service quality of PDAM Kota Surabaya which is expected by consumers at PDAM Kota Surabaya is considered very important, because the average value of the entire statement is 4.22 in the interval 4.20 – 5.00.

But there are still things that need to be considered because it has a value below average, such as the speed of PDAM employees in dealing with complaints, the level of ease of contacting the service department, the willingness of PDAM to listen to consumer complaints and suggestions, the level of friendliness in serving when making payments, guarantees that nothing will happen - things that endanger consumers when servicing disruptions and installing new pipes, the level of PDAM ability to understand consumer needs and the level of attention of officers when serving consumers.

2. PDAM Kota Surabaya Consumer Satisfaction which is expected by consumers at PDAM Surabaya City can be stated as satisfied, because the average value of the entire statement is 3.95 in the interval 3.40-4.19.

But there is still something that needs to be considered because it has a value below the average, namely in the statement of the availability of a suggestion box in response to consumers, the availability of comment cards that can be filled in as consumer complaints, the availability of guarantees to deal with complaints to each consumer, the company will conduct an appeal test against the seller other water as a form of assessing the shortage of PDAM companies.

3. Based on the results of statistical calculations, namely analysis of the Spearman rank correlation coefficient, it was obtained $r_s = 0.637$, which means that the relationship between service quality and customer satisfaction can be said to be strong.

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