

# Factors that influencing Customers satisfaction: A case study from Marketing Branch of PDAM Tirtanadi, Medan Amplas, North Sumatra, Indonesia

Idham Khalid Siregar, Amrin Fauzi, Sutarman & Yossie Rossanty

## Abstract:

The purpose of this research is to analyze dimensions affecting PDAM Tirtanadi customer satisfaction of Medan Amplas marketing branch. Factors affecting customer satisfaction are measured in five dimensions: Tangible, Reliability, Responsiveness, Assurance and Empathy. The research method is comparative causal by processing the primary data obtained from the research sample and using the multiple regression equation models. To determine the number of samples using Table Isaac and Michael. From Table Isaac and Michael were obtained with a population of 17,398 customers with a 5% error rate, then the sample size was 341 subscribers. From partial t-test, Tangible has a positive effect but has no significant effect on customer satisfaction. Reliability partially has a positive effect but has no significant effect on customer satisfaction. Responsiveness partially has a positive and significant influence on customer satisfaction. Assurance partially has a positive and significant influence on customer satisfaction. Empathy partially has a positive and significant influence on customer satisfaction. We suggested to PDAM Tirtanadi, especially marketing department of Medan Amplas to improve service especially dimension of responsiveness, assurance, and empathy. The enhancement efforts are a) Performing a water account payment system online to run well as expected. b) Conducting a new online water register payment system in order to run well as expected. c) Optimize Halo Tirtanadi d) Providing training to customer service in order to service the customers who complain. e) Giving rewards to customer. f) Regarding improving the quality of good water that consumers obtain. g) Regarding the increasing quantity of water. h) In terms of increasing the continuity of water in the community.

**Keywords:** Customer Satisfaction, Tangible, Reliability, Responsiveness, Assurance, Empathy and Services.



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## About Author

**Idham Khalid Siregar**, (Corresponding Author), Postgraduate Program, Magister Management, Universitas Sumatera Utara, Indonesia

**Amrin Fauzi**, Faculty of Economics and Business, Universitas Sumatera Utara, Indonesia

**Sutarman**, Faculty of Math and Science, Universitas Sumatera Utara, Indonesia

**Yossie Rossanty**, Visiting Lecturer, Postgraduate Program, Magister Management, Universitas Sumatera Utara, Indonesia

## INTRODUCTION

PDAM Tirtanadi was built by the Dutch Colonial Government on September 8, 1905, named NV Waterleiding Maatschappij Ajer Clean. On September 10, 2009, a North Sumatera Provincial Regulation No. 10 on "Perusahaan Daerah Air Minum" (PDAM) states that the primary objective of PDAM Tirtanadi is to manage and administer drinking water services that meet health requirements and to develop regional economies, increase regional revenues, as well as improving the quality of the environment by providing the services of collection and distribution of wastewater through piping systems in order to achieve the welfare of the general public (Syahril, 2005). Currently, PDAM Tirtanadi's customers in Medan have reached 455,451 home connections (December 2017). This research is done because of its high complaints about PDAM Tirtanadi's services. From data over the year 2014, there is a customer complaint that reports complaints to the service through a letter of readings in daily newspaper Medan city, Call Center 1500922 toll-free, as well as call directly to marketing branches. Based on interviews and problem identification, the author formulated some hypotheses in this study as follows: What factors affecting PDAM Tirtanadi's customer satisfaction are the five dimensions: Tangible, Reliability, Responsiveness, Assurance, Empathy.☐

## LITERATURE REVIEW

### Services

Lovelock (2011) defines a service as a process, or performance not just one thing that is physically visible. Kotler (1994) defines the service as any action that one party can offer to another party that is essentially intangible and does not yield ownership of anything. Its productions may or not be tied to physical products. Gronroos (1990) service is an activity or series of activities that are more or less unrealistic, but it does not necessarily, interact between customer and service personnel or physical resources or goods and systems of service providers, provided as a solution to customer issues

### Customer satisfaction

Parasuraman et al. (1988) describe the dimensions of the quality of service that can be used as an indicator to evaluate the service, and if it is associated with a quality service development effort in order to increase customer satisfaction. Measuring customer satisfaction is essential, as customers are people who experience how services they provide from a particular kind of service. According to Kottler (1994), the quality of service should be seen from customer needs and ends with customer perceptions as a service consumer. A good quality image is not based on a service provider's perspective, but rather on a customer's perception point of view. Customers can decide what and how their quality, as well as how they can communicate what and how customers need.

### Tangible is Realistic Service

Physical evidence is a service that can be seen, kissed and felt, so the tangible aspect becomes meaningful as a measure of service. Customers will use the sense of vision to assess the quality of service. A good tangible will affect the perceptions of customers. At the same time, this tangible aspect is also one of the sources that affect the customer's expectations because good tangible, the expectation of respondents becomes higher.

### Reliability Can Trust

Reliability is a dimension that measures the reliability of the company in providing services to its customers. Companies are expected to meet their customers' expectations. For example, the correct water meter recording, easy account payment process, tariff certainty for customers can sense that the company's services are indeed trustworthy

### **Responsiveness**

Responsiveness is the most dynamic dimension of service quality. Customer expectations of service speed can almost certainly be changed with the tendency to rise over time. Companies are expected to respond quickly to complaints reported by consumers either directly to the office or via mass media and social media such as Facebook, twitter and other online media

### **Assurance is Security Assistance**

Assurance is the quality dimension associated with the company's ability and the behavior of the service staff in instilling trust and confidence in its customers. The company expects its officers to provide good services such as customers guaranteed quality, quantity and continuity of water contributed to the community.

### **Empathy is Attention**

Empathy is one's ability to feel the emotional state or feelings that others have to have Parasuraman et al. (1988) express customers' expectations, as a customer's confidence before trying or buying a product that is standardized in assessing the performance of the product. This hope is formed from the experience of consuming in the past, information from friends, family, and other (word of mouth), its needs (personal needs) so to determine the quality of a good product or not, can be measured from customer satisfaction.

## **RESEARCH METHODS**

The present study aims to analyze the dimensions affecting customer satisfaction. Factors affecting customer satisfaction are measured by five dimensions which are Tangible, Reliability, Responsiveness, Assurance and Empathy. The research method is comparative causal by processing the primary data obtained from the research sample and using the multiple regression equation models. To determine the number of samples done by using Table Isaac and Michael. Based on the table Isaac and Michael were obtained with a population of 17,398 customers with a 5% error rate then the sample size was 341 subscribers. The research method used is multiple regression. In the data processing process, the author uses a Statistical software Product and Service Solution (SPSS) data processing application.

## **RESULTS & DISCUSSION**

### **Results**

#### **Validity Test**

The total sample is 341 respondents, and the correlation analysis was conducted between the questionnaire score and the validity value ( $r$ -critical). For the  $r$  product moment ( $r$ -critical), at 66 samples, with a significant level of 5% is 0.106, if the  $r$ -count value is higher or equal to 0.106, then it can be stated that the instrument is valid. Thus the whole question in the questionnaires is declared valid (Sinulingga, 2014). The following table of validity test results of the research instrument is as follows :

**Table 1: Validity Test Results**

Variables & Item	r-count	r-critical value	Description
<b>(X1) Tangibles1</b>	0,727	0,106	Valid
Tangibles2	0,772	0,106	Valid
Tangibles3	0,775	0,106	Valid
Tangibles4	0,727	0,106	Valid
Tangibles5	0,603	0,106	Valid
<b>(X2) Reliability 1</b>	0,786	0,106	Valid
Reliability 2	0,702	0,106	Valid
Reliability 3	0,854	0,106	Valid
<b>(X3) Responsiveness 1</b>	0,865	0,106	Valid
Responsiveness 2	0,832	0,106	Valid
Responsiveness 3	0,840	0,106	Valid
<b>(X4) Assurance 1</b>	0,783	0,106	Valid
Assurance 2	0,762	0,106	Valid
Assurance 3	0,782	0,106	Valid
Assurance 4	0,788	0,106	Valid
Assurance 5	0,827	0,106	Valid
<b>(X5) Empathy 1</b>	0,843	0,106	Valid
Empathy 2	0,871	0,106	Valid
Empathy 3	0,822	0,106	Valid
<b>(Y) Customer Satisfaction</b>	0,723	0,106	Valid
Customer Satisfaction 2	0,746	0,106	Valid
Customer Satisfaction 3	0,624	0,106	Valid
Customer Satisfaction 4	0,636	0,106	Valid
Customer Satisfaction 5	0,687	0,106	Valid

### Reliability Test

The measurement of the variables is done once, and the results are compared to other questions to measure the correlation between the answers to the questions. According to Sekaran (2006), generally, a variable is stated to be reliable if it provides a Cronbach Alpha value higher than 0.60. □

**Table 2 : Reliability Test Results**

Variables	Alpha Cronbach value	Description
Tangible (X <sub>1</sub> )	0,782	Reliabel
Reliability (X <sub>2</sub> )	0,681	Reliabel
Responsiveness	0,800	Reliabel
Assurance (X <sub>4</sub> )	0,840	Reliabel
Empathy (X <sub>5</sub> )	0,800	Reliabel
Customer	0,708	Reliabel

### Hypothesis Test

#### Simultaneous Test Results (F-Test)

**Table 3: Simultaneous Test Results**

Model	Sum of Squares	df	Mean Square	F	Sig.
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1	Regression	1186,938	5	237,388	75,754	.000 <sup>a</sup>
	Residual	1049,777	335	3,134		
	Total	2236,716	340			

a. Predictors: (Constant), Emphaty, Tangible, Reliability, Responsiveness, Assurance

b. Dependent Variable: Customer Satisfaction

From Table 3, the significance level of F-test is 0,000 ( $p < 0,05$ ). It means there is a significant influence of tangible (X1), reliability (X2), responsiveness (X3), assurance (X4), and empathy (X5) to customer satisfaction (Y) simultaneously.

### Partial test (T-Test)

**Tabel 4. Partial Test Results Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	8,564	,688		12,454	,000
<i>Tangible</i>	,036	,033	,043	1,100	,272
<i>Reliability</i>	,035	,067	,031	,530	,597
<i>Responsiveness</i>	,177	,062	,174	2,847	,005
<i>Assurance</i>	,239	,040	,387	5,920	,000
<i>Empathy</i>	,260	,051	,235	5,076	,000

a. Dependent Variable: Customer Satisfaction

Based on Table 4, the result of regression test analysis states that partially responsiveness, assurance and empathy have positive and significant effect on customer satisfaction. Positive effect can be seen from the beta coefficient of the unstandardized coefficient of each positive value variable, while to see the significance can be seen by comparing the significance value to 0.05, if the significance value  $< 0.05$  then the independent variable partially has a significant effect on the dependent variable. The significant levels for tangible are 0.272, higher than 0.05, and the value of a beta coefficient, the unstandardized coefficient of the tangible variable is 0.036. The result indicates that tangible does not have a significant effect on customer satisfaction. The significant level for reliability is 0.597, higher than 0.05, and the value of a beta coefficient unstandardized coefficient of reliability is 0.035. The result shows that reliability does not have a significant effect on customer satisfaction. The significant level for responsiveness is 0.005, lower than 0.05, and the coefficient of a beta coefficient, the unstandardized coefficient is a positive response of 0.177. The result indicates that responsiveness has a positive and significant effect on customer satisfaction. Level of significance for assurance is 0.000, lower than 0.05, and the

coefficient value of beta, the unstandardized coefficient is positive assurance value of 0.239. The result indicates that assurance has a positive and significant effect on customer satisfaction. Level of significance for empathy is 0.000, which is lower than 0.05. The coefficient value of beta, the unstandardized coefficient is a positive value which is 0.260. This result shows that empathy has a positive and significant effect on customer satisfaction.

## Discussion

### The effect of Tangible on Customer Satisfaction

The test result shows that tangible partially does not have a significant effect on PDAM Tirtanadi's customer satisfaction. Theoretically, since a form of service cannot be seen, kissed and felt, physical aspects become essential as a measure of service. Customers will use the sense of sight to assess the quality of service. Physical form (tangible) is a customer requirement that focuses on physical facilities such as buildings and spaces, parking space, cleanliness, neatness and space comfort, equipment completeness, communication facilities, and employee performance. The physical relationship with customer satisfaction has a positive influence on customer satisfaction. The positive perception of the customer towards physical existence then customer satisfaction will also be higher and vice versa. However, based on the results of this study it is not proven that tangible can influence customer satisfaction in PDAM Tirtanadi.

### The effect of Reliability on Customer Satisfaction

Test results in this study indicate that partial reliability does not have a significant effect on the satisfaction of Tirtanadi's PDAM customers. Reliability is the ability of the company to provide services by what is promised accurately and reliably. Performance should be in line with customer expectations meaning timeliness, same service for all customers without error, sympathetic attitude, and with high accuracy. Fulfilling promise in service will reflect the credibility of the company. Relationship with customer satisfaction which means reliability has a positive influence on customer satisfaction. The positive perception of the customer towards the reliability of the company then the satisfaction of customers will also be higher and vice versa. Regarding theoretical, it is concluded that reliability influences customer satisfaction, but this result is not following the result obtained in this research because based on the result of this research it is not proven that reliability can influence customer satisfaction in PDAM Tirtanadi.☐

### The effect of Responsiveness on Customer Satisfaction

The test result in this research shows that partial responsiveness has a positive and significant effect on PDAM Tirtanadi Medan customer satisfaction. Responsiveness is an employee's response or ease in helping customers and delivering fast and reliable service, including employees' eager to serve customers, employee speed handling transactions and handling customer complaints. Responsiveness is a policy to assist and provide prompt and responsive service to customers, with clear information delivery. Letting customers wait is a negative perception of service quality. The effect of responsiveness with customer satisfaction is that responsiveness has a positive influence on customer satisfaction. The better the perception of the customer to the company's responsiveness then the customer satisfaction will also be higher, and vice versa. With the theory, it can be concluded that responsiveness has an influence on customer satisfaction and according to the result obtained in this research.

### **The effect of Assurance on Customer Satisfaction**

The test result in this research shows that partial assurance has a positive and significant effect on PDAM Tirtanadi's customer satisfaction. Assurance is the precise knowledge of the product, employee loyalty in providing services, skills in providing information, the ability to provide security, the ability to instill trust and customer confidence in the company. Assurance includes the ability of employees to know their products regarding accuracy, hospitality, attention and courtesy, skills in providing information, ability to provide security, utilizing the services offered and the ability to instill customer trust towards the company. The trustworthy nature of the staff, free from harm, risk or doubt. Knowledge, courtesy, and the ability of corporate employees to grow the trust of customers to the company. The influence of assurance with customer satisfaction is a guarantee of having a positive influence on customer satisfaction. The better the customer perception of the guarantee provided by the company then the customer satisfaction will also be higher and vice versa. It can be concluded that assurance has an influence on customer satisfaction and this is according to the result obtained in this research.

### **The effect of Empathy on Customer Satisfaction**

The test result in this study shows that empathy by partial has a positive and significant effect on PDAM Tirtanadi's customer satisfaction. Empathy is the concern of providing a sincere and individual attitude that the company provides to its customers, the ease of contacting the company, the ability of employees to communicate with customers and enterprise businesses to understand the needs and needs of customers. Companies are expected to have the insights and knowledge of customers, understand customers' specific needs, and have a convenient time of operation for customers. Empathy is special or individual attention to all customer needs and complaints as well as good communication between employees and customers. The individual attention and good communication from employees to customers will have an impact on customer satisfaction, as customers will feel that the company is aware of what is required and complained about by the company. Empathy of concern with customer satisfaction is a concern to have a positive influence on customer satisfaction. The better the perception of the customer towards the care given by the company then the customer satisfaction will also be higher and vice versa. It can be concluded that empathy influences customer satisfaction. [2]

## **CONCLUSION & SUGGESTION**

### **Conclusion**

Based on the results of the research and discussion in the previous chapter it can be concluded as follows:

Partially, Tangible does not have a significant effect on customer satisfaction. Reliability does not have a significant effect on customer satisfaction. Responsiveness has a positive and significant effect on PDAM Tirtanadi's customer satisfaction. Assurance has a positive and significant effect on PDAM Tirtanadi's customer satisfaction. Empathy has a positive and significant effect on customer satisfaction. Simultaneously, All independent variables have a positive and significant effect on customer satisfaction.

### **Suggestions**

Based on the above conclusions and limitations of this study, the suggest that can be proposed is as follows:

PDAM Tirtanadi is expected to improve the quality of service provided to its customers, by improving service quality, customer satisfaction will also increase. Based on the result of this research, it is suggested to PDAM Tirtanadi, especially marketing department of Medan Amplas can make efforts to improve service especially dimension of responsiveness, assurance, and empathy. The enhancement efforts are a) Performing a water account payment system online to run well as expected. b) Conducting a new online water register payment system in order to run well as expected. c) Optimize Halo Tirtanadi call center 1500922 toll-free existing today as an effort to improve service to customers. So all the results from customer complaints from the call center 1500922 can be followed up quickly and completed thoroughly. d) Providing training to customer service in order to service the customers who complain, so that consumers feel their complaints are respected and valued as consumers. e) Giving rewards to customer service department employees reward rewards as employees of the month to employees who are achieving, whereas employees who do not perform the service to consumers are well given the punishment in the form of a warning letter to the next which affects the periodic rise and class. f) Regarding improving the quality of good water that consumers obtain, the efforts that PDAM Tirtanadi can do is to provide training to regular water treatment operators in order to improve their skills in water treatment work. Moreover, also for distribution personnel can make public pipe cleaning routinely and adequately so that water quality in consumers can be better. g) Regarding the increasing quantity of water, the Tirtanadi PDAM should quickly build new water treatment installations to offset the ever-growing population growth and also upgrade to the old Installation to increase water production capacity. h) In terms of increasing the continuity of water in the community that the current condition is only able to distribute water for 20 hours/day, then PDAM should increase the service hours to consumers for 24 hours per day without increasing the capacity of water and making water reservoirs in disturbed areas water that is not 24 hours until water can flow for 24 hours.

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