

## Pengaruh Kualitas Pelayanan Terhadap Kepuasan Pelanggan pada Perusahaan Daerah Air Minum Tirta Jam Gadang Kota Bukittinggi Sumatera Barat

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### Abstract

*Data were collected through the distribution of questionnaires with a Likert scale model and then tested for validity and reliability of the questionnaire. The data analysis technique used is the Binary Logistic method. The results of this study are a). Physical evidence, There is a Positive and Significant Influence on Customer Satisfaction of Clean Water at the Regional Public Drinking Water Company Tirta Jam Gadang, Bukittinggi City. b). Empathy, There is a Positive and Significant Influence on Customer Satisfaction of Clean Water at the Regional Public Drinking Water Company Tirta Jam Gadang, Bukittinggi City. c). Responsiveness, There is a Positive and Significant Influence on Customer Satisfaction of Clean Water at the Regional Public Drinking Water Company Tirta Jam Gadang, Bukittinggi City. d). Reliability, There is a Positive and Significant Influence on Customer Satisfaction of Clean Water at the Regional Public Drinking Water Company Tirta Jam Gadang, Bukittinggi City. e). Assurance, There is a Positive and Significant Influence on Customer Satisfaction of Clean Water at the Regional Public Drinking Water Company Tirta Jam Gadang, Bukittinggi City. The most dominant variable influencing Clean Water Customer Satisfaction at the Tirta Jam Gadang Regional Drinking Water Company in Bukittinggi City is Empathy.*

### Keywords:

Bukti fisik  
Empati  
Daya tanggap  
Keandalan  
Jaminan  
Kepuasan pelanggan

### Abstrak

Penelitian ini bertujuan untuk melihat factor yang memengaruhi kepuasan pelanggan pada Perusahaan Daerah Air Minum Tirta Jam Gadang Kota Bukittinggi. Pengumpulan data dilakukan melalui penyebaran kuesioner dengan model skala likert kemudian dilakukan uji validitas dan reliabilitas kuesioner. Teknik analisis data yang digunakan adalah metode Binary Logistic. Hasil penelitian ini adalah a). Bukti Fisik (X1) Terdapat Pengaruh Positif dan Signifikan terhadap Kepuasan Pelanggan Air Bersih pada Perusahaan Daerah Air Minum Umum Tirta Jam Gadang Kota Bukittinggi. b). Empati (X2) Terdapat Pengaruh Positif dan Signifikan terhadap Kepuasan Pelanggan Air Bersih pada Perusahaan Daerah Air Minum Umum Tirta Jam Gadang Kota Bukittinggi. c). Daya Tanggap (X3) Terdapat Pengaruh Positif dan Signifikan terhadap Kepuasan Pelanggan Air Bersih pada Perusahaan Daerah Air Minum Umum Tirta Jam Gadang Kota Bukittinggi. d). Keandalan (X4) Terdapat Pengaruh Positif dan Signifikan terhadap Kepuasan Pelanggan Air Bersih pada Perusahaan Daerah Air Minum Umum Tirta Jam Gadang Kota Bukittinggi. e). Jaminan (X5) Terdapat Pengaruh Positif dan Signifikan terhadap Kepuasan Pelanggan Air Bersih pada Perusahaan Daerah Air Minum Umum Tirta Jam Gadang Kota Bukittinggi. Variabel yang paling dominan mempengaruhi Kepuasan Pelanggan Air Bersih pada Perusahaan Daerah Air Minum Umum Tirta Jam Gadang Kota Bukittinggi adalah Empati.

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## I. Introduction

Clean water is a natural resource that is very important to pay attention to and is part of human rights that must be fulfilled for survival . (Lomi & Messakh, 2020) . Since its creation, the human body contains 60% water elements and not only that, water also plays a very important role in meeting other needs such as agricultural areas, settlements, industry, fisheries, energy, tourism and others. Water has become a primary need that is very much needed by humans to carry out their daily activities such as drinking, cooking, bathing, and up to industrial processing needs so that the function of water is not only limited to carrying out economic functions but also as a social function, where this social function is closely related to the condition of healthy, clear and clean water so that it is very important to be understood by all parties. The social and economic functions of water in order to meet daily needs are very important to note.

Clean water used daily must have good quality to be consumed according to drinking water standards in Indonesia, namely the Indonesian Minister of Health Regulation No. 492 / MENKES / PER / IV / 2010 concerning Drinking Water Quality Requirements. The provision of clean water for the community in an area has a very important role in improving the welfare and health of the environment. and clean water also has a role in reducing the number of sufferers of diseases that are specifically related to clean water, and clean water also plays a role in improving the standard and level / quality of life of the community.

To meet the need for clean water, people can use water sourced from the services of the Regional Drinking Water Company (PDAM) in various regions. The existence of PDAM in various regions is a government company whose management is under the responsibility of the regional government which is expected to serve the community, but in reality not all government organizations engaged in the field of drinking water services can meet the need for clean water according to what the community expects. This situation can occur because the purpose of the Regional Drinking Water Company (PDAM) in addition to serving the community must also carry out its function as a company that is oriented toward profit and benefits. (Kuncoro, 2016)

As a Regional Drinking Water Company (PDAM) has goals, vision and mission. Goals are an absolute element that must be owned by an organization. The goal will not be achieved without efforts that lead to achieving the goal. So to see the success or failure of an organization can be seen from the extent to which the goal has been achieved according to the original plan. As a government agency responsible for providing services to the community, to see the extent of the quality of the Regional Drinking Water Company (PDAM) can be seen from its performance process in achieving the organization's goals, namely in meeting the need for clean water and one of the sources of local revenue (PAD).

In order to satisfy customers, PDAM employees should provide good service in responding to customer complaints and improve the quality of PDAM services from various aspects so that customer needs are met. According to (Lupiyoadi, 2018) there are five (5) dimensions of service quality , namely tangible , reliability , responsiveness , assurance and certainty and empathy . According to (Kertajaya, 2017) the indicators used to measure service quality are: 1) *Reliability*, 2) *Tangible*, 3) *Assurance*, 4) *Empathy*, 5) *Responsiveness* . (Nam, Ekinici, & Whyatt, 2018 ) stated that customer satisfaction is an evaluative assessment of the last purchase and based on all encounters with the service provider. In the study of Esmailpour, Zadeh, and Hoseini (2018 ) it is explained that customer satisfaction is conceptualized as a customer assessment combining their cognitive and affective evaluations of their use or consumption experience. According to (Esmail Pour, Zadeh, & Hoseini, 2018 ) , service quality was found to be a strong predictor of customer satisfaction. This paper will examine how service influences customer satisfaction of clean water users managed by drinking water companies in Bukittinggi City.

## 2. Theoretical basis

### a. Quality of Service

Based on the definition put forward by several experts, it can be explained that service quality is a customer's assessment of the service they receive when fulfilling their needs. For more details, it can be seen based on the opinions of experts . According to (Sudarso, 2016) service quality is the benefit felt by customers after evaluating the product/service and comparing the benefits expected by customers. Service quality will have an impact on consumer satisfaction, where every consumer wants the products or services produced by producers to provide satisfaction to their consumers (Kotler & Armstrong, 2017). (Lupiyoadi, 2018 ) service quality can be defined as how far the difference is between reality and customer expectations

for the services they receive . According to Assauri ( 2018 ) service is a form of provision given by producers both to the service of goods produced and to the services offered in order to obtain consumer interest, thus service influences consumer interest in a good or service from the company that offers products or services. Service quality simultaneously or together explains or influences 77.8% of customer satisfaction (Suryaningtiyas, Harahab, & Riniwati, 2018 ) .

According to (Tetraleniajr, Anggraeni, & Fatihah, 2021) Increasing customer satisfaction is trying to establish better relationships with customers, and being willing to listen to all customer complaints about the services provided to the satisfaction of the service. In determining customer satisfaction, there are five factors that must be considered by the company (Lupiyoadi, 2018 ) . namely product quality, quality of service or service, emotion, price, and cost. From these factors it can be seen that the quality of service provided by a company can affect customer satisfaction .

#### **b. Dimensions of Service Quality**

Service quality is measured based on five dimensions known as TERRA, namely (Tjiptono, 2018):

- 1) Reliability , namely ability to provide immediate service with the following indicators: fast and accurate service, cost appropriateness.
- 2) Responsiveness , namely the desire of staff to provide responsive service *and* help consumers solve problems with the following indicators: willingness and speed.
- 3) Assurance *includes* knowledge, competence, politeness and trustworthiness of employees with the following indicators: discipline and responsibility.
- 4) Attention ( *Empathy* ) is the attitude of employees who provide sincere attention to their customers with the following indicators: fair and easy to contact.
- 5) Physical evidence ( *Tangibles* ) is the appearance of infrastructure, employees and other physical facilities with the following indicators: appearance, environmental conditions and comfort .

According to (Lupiyoadi, 2018 ) there are five (5) dimensions of service quality , namely tangible , reliability , responsiveness , assurance and empathy . According to (Kertajaya, 2017) the indicators used to measure service quality are: 1) Reliability, 2) Tangible, 3) Assurance , 4) Empathy, 5) Responsiveness . Based on the definitions put forward by several experts above, it can be concluded that the dimensions of service quality consist of: physical evidence ( *tangibles* ), reliability , responsiveness , assurance , and *empathy* .

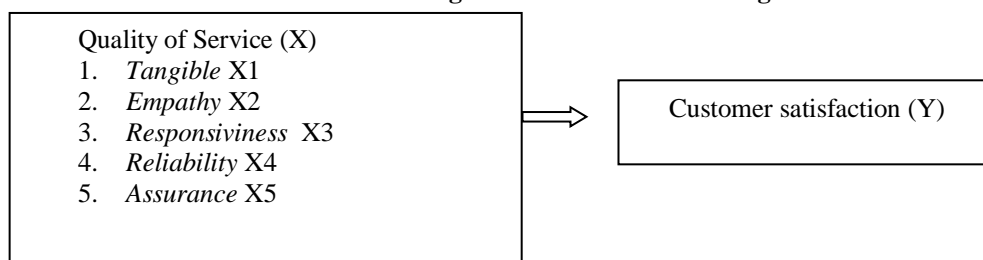
#### **c. Customer satisfaction**

According to (Tjiptono, 2018) consumer satisfaction is a situation shown by consumers when they realize that their needs and desires are in accordance with what is expected and are well fulfilled. Meanwhile, according to Bachtiar (2017 ) , consumer satisfaction is a positive feeling of consumers related to products / services during or after using services or products. (Apriyani & Sunarti, 2017) Consumer satisfaction refers to positive consumer sentiment towards a product and service during or after the product service is used. Consumer satisfaction is the level of feeling happy or disappointed after comparing the services / products received and those expected. According to (Palandeng & Lumentut, 2018 ) Consumer satisfaction refers to the pleasure and disappointment that exists after comparing the performance of the results thought of a product with the expected performance results, the indicators are: satisfied with the service, satisfied with the service, satisfied with the company and satisfied with the whole.

### **3. Framework of thought**

The framework of thought in this research on service quality is as follows:

**Figure 1 Framework of Thought**



Source : Lupiyodi 2018

Based on the above framework, it can be seen that to measure the level of customer satisfaction, there is no standard that can be used as a guideline. But empirically, customer satisfaction can be understood by examining 5 dimensions of service, namely: *reliability* , *assurance* , *responsiveness* , *tangibility* (physical evidence) and *empathy* . If able to describe the five dimensions in a service mechanism, then customer

satisfaction is easier to realize or in other words, consumer expectations to feel satisfied with the service will be closer to reality. Service is said to be of quality if consumers feel satisfied, both in the occurrence of service contact in certain situations.

#### 4. Research methods

##### a. Types of research

In this study, the author uses quantitative field research, namely the author collects directly from the field or research location. The method used is quantitative descriptive, according to (Arikunto, 2018) quantitative method is a type of research that is intended to describe or explain conditions, situations, events, activities and others.

##### b. Sample

A sample is a part of a population that is taken or determined based on certain characteristics and techniques. To draw the characteristics of a population, a sample must truly be able to represent its population. Therefore, a procedure is needed to be used in selecting a sample section so that a representative research sample can be obtained such as the characteristics of the population. Given the large population and the limited time and cost of research, the sample needs to be limited in sampling. The sampling technique used is *random sampling*, which is taking samples randomly from a predetermined population. According to Hair *et al* (2017), the minimum number of samples that should be used is 10 times the total number of indicators. In general, a sample size of more than 100 is better, but a sample size smaller than 100 is acceptable, depending on the background of the research. In this study, the Hair formula technique was used, namely: Sample = number of indicators x 10 In this study, there were 15 indicators, so the sample size used was  $15 \times 10 = 150$  samples.

#### 5. Binary Logistic Regression Analysis

According to (Sugiyono, 2016) a analysis binary logistic regression is the analysis used when the dependent variable (response) is nominal data type with two criteria. Binary logistic regression analysis is used to predict the probability of an event occurring by fitting data to the logit function of the logistic curve. In this study, binary logistic regression is used to determine the effect of service quality on customer satisfaction of clean water at the Regional Drinking Water Company (PDAM) Titra Jam Gadang, Bukittinggi City. The formula used is as follows (Sugiyono, 2016):

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 \dots + e$$

Information formula:

Y = Quality of Service

$\beta$  = Regression Coefficient

X1= Tangibles

X2= Empathy

X3= Responsiveness

X4= Reliability

X5= Assurance

e = Error

Formula on will estimated with a an approach called *likehoode*. Purpose from regression This For predict large dependent variable in the form of binary variable with using the independent variable data that has been known the size. Where nominal data type with two statement criteria, namely satisfied = 1 and dissatisfied = 0. To facilitate research, researchers divide the assessment categories above into:

- a. Binary scale 1, for respondent answer values 5 and 4
- b. Binary scale 0, for respondent answer values 3,2 and 1

#### 6. Findings and Discussion

##### a. General description

Bukittinggi City is better known as "City of Clock Tower" and "City of Tourism". The history of the state administration of the Bukittinggi City Regional Government has now begun since the Dutch colonial era, namely with the establishment of *Geeneente Fort De Kock* which changed to *Sudsqemeeente Fort De Kock* which was included in *Staatsbald* Number 358 in 1938. During the Japanese occupation, the Bukittinggi City Government was named "Bukittinggi Shi Yaku Sho". During the struggle for independence of the Republic of Indonesia, Bukittinggi played a role as a city of struggle. In December 1948 to July 1949, Bukittinggi was appointed as the Capital of the Republic of Indonesia after Yogyakarta fell into the hands of the Dutch.

## b. Binary Logistic Analysis

### 1. Logistic Regression Model

Logistic regression is used to determine the effect of independent variables partially on dependent variables and also to see the dominant independent variables in influencing dependent variables. From the results of data processing obtained with the logistic regression model according to the display of *variables in the equation* :

**Table 1. Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>	Physical evidence (X1)	.215	.098	4,749	1	.029	.807
	Empathy (X2)	.317	.125	3.020	1	.002	1.243
	Responsiveness (X3)	.159	.119	2,780	1	.012	.172
	Reliability (X4)	.269	.136	3.909	1	.048	.764
	Guarantee (X5)	.322	.151	2,653	1	.019	.885
	Constant	5.353	4.903	3.192	1	.075	21,217

*Source: Processed primary data, 2024*

Logistic Regression can be substituted into the following equation:

$$Y = 5,353 + 0.215 X1 + 0.317 X2 + 0.159 X3 + 0.269 X4 + 0.322 X5$$

The constant value is 5.353 units which explains that if the service quality is zero then customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) is already 5.353 units with the assumption that there are no other variables. The explanation of the equation above is that the physical evidence variable (X1) has a positive effect on customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) by 0.215 units, meaning that if physical evidence is increased by one unit then customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) will also increase by 0.215 units with the assumption that other variables remain constant.

The explanation of the equation above is that the empathy variable (X2) has a positive effect on customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) by 0.317 units. This means that if empathy is increased by one unit, customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) will increase by 0.317 units, assuming that other variables remain constant. The explanation of the equation above is that the responsiveness variable (X3) has a positive effect on customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) by 0.159 units. This means that if the responsiveness is increased by one unit, customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) will also increase by 0.159 units, assuming that other variables remain constant.

The explanation of the equation above is that the reliability variable (X4) has a positive effect on customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) by 0.269 units. This means that if reliability is increased by one unit, customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) will also increase by 0.269 units, assuming that other variables remain constant. The explanation of the equation above is that the guarantee variable (X5) has a positive effect on customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) by 0.322 units. This means that if the guarantee is increased by one unit, customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) will increase by 0.322 units, assuming that other variables remain constant.

### 2. Wald test

This test is a significance test of the influence of service quality variables on customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM). From the results of Binary Logistic Analysis, it is known that the testing of service quality variables can be seen in table 4.14 above, it can be interpreted that partially the existing service quality variables have a significant effect on customer satisfaction at the Regional Drinking Water Company (PDAM) in Bukittinggi City because the sig value is <0.05, such as the physical evidence variable has a significant value from the Wald test of 0.029 <0.05, then the empathy variable has a significant value from the Wald test results of 0.002 <0.05, then the third variable is responsiveness has a significant value of 0.012 <0.05 then the fourth variable reliability has a significant value of 0.048 <0.05 and the last is assurance has a significant value from the Wald test results of 0.019

<0.05 so that partially all service quality variables have a significant effect on customer satisfaction at the Regional Drinking Water Company (PDAM) in Bukittinggi City .

### 3. G Test

From the results of data processing with the SPSS program version 23.00, the results of the binary y logistic test with the G test were obtained, meaning that the hypothesis testing together produced results as in table 4.15 below:

Table 2. G Test Results  
Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	13,789	5	.017
	Block	13,789	5	.017
	Model	13,789	5	.017

Source: Processed Primary Data 20 2 4

Hypothesis testing was carried out simultaneously using the G test, from the results obtained that the independent variables, namely physical evidence (X1), empathy (X2), responsiveness (X3) , reliability (X4) and assurance (X5) have a positive and significant influence on customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) because the significant value of the five service quality variables above is smaller than 0.05, namely 0.017, so that the hypothesis submitted simultaneously can be accepted.

### 4. Expectation Test B

This test was conducted to determine which of the five variables the author studied had the greatest influence on customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) . From the expected value B above, it shows that the empathy variable (X2 ) has a greater influence, namely with an expected value of B= 1.2 43 units on customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) compared to other variables such as physical evidence, reliability, assurance and responsiveness . This means that the empathy variable makes a major contribution to customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) and is the most dominant variable .

## 7. Discussion

From the results of the study, the author found that the service quality variables consisting of five dimensions, namely physical evidence, empathy, responsiveness, reliability and assurance have a positive and significant influence on customer satisfaction at the Regional Drinking Water Company (PDAM) in Bukittinggi City. This means that if one of the five service quality variables is increased, customer satisfaction at the Regional Drinking Water Company (PDAM) in Bukittinggi City will also increase because it has a positive and unidirectional influence, so that if the independent variable increases, the dependent variable will also increase and so on.

Based on the level of significance obtained from data processing through the SPSS version 23.00 program, the results of the Wald test showed that partially the service quality variable has a significant influence on customer satisfaction at the Bukittinggi City Regional Drinking Water Company (PDAM) because the significant value of the Wald test results shows that the level of significance is smaller than *alpha* or the level of significance set so that all five service quality variables have a significant influence partially. Based on the level of significance obtained together through the results of the G test, it shows that simultaneously the service quality variable has a significant influence on customer satisfaction at the Regional Drinking Water Company (PDAM) of Bukittinggi City because the significant value of the G test results shows that the level of significance is smaller than *alpha* or the level of significance set so that all five service quality variables have a significant influence simultaneously. This result is the same as the research conducted by Kereta, 2014 with the title of his research is " Analysis of the Influence of Service Quality on Customer Satisfaction at the Regional Drinking Water Company (PDAM) of East Flores Regency" from the results of this study showed that both had a positive and significant influence on Customer satisfaction at the Regional Drinking Water Company (PDAM) of East Flores Regency as well as the research that the author did.

Based on the results of the analysis conducted by the author on the service quality variables at the Bukittinggi City Regional Drinking Water Company (PDAM). the variable that has the greatest influence on customer satisfaction at the Regional Drinking Water Company (PDAM) of Bukittinggi City is empathy ,

shown by the large value of the expectation B empathy obtained from the results of this finding compared to other variables, so it can be concluded that the most dominant variable influencing customer satisfaction at the Regional Drinking Water Company (PDAM) of Bukittinggi City is the empathy variable. In accordance with the results of previous research by Hardiyono, & Nurlia, 2019 with the title of the research is "The Effect of Product Quality and Service Quality on Increasing Customer Satisfaction and Loyalty of the Regional Drinking Water Company (PDAM) of Makassar City" which shows that the empathy variable is the most dominant variable influencing customer satisfaction at the Regional Drinking Water Company (PDAM) of Makassar City.

Descriptive responses of respondents to the service quality variables studied by the author obtained results that the average physical evidence variable of respondents' answers was quite good about the physical evidence in the Regional Drinking Water Company (PDAM) of Bukittinggi City so that in the future this existing physical evidence needs to be improved to a better level or developed again so that very good respondents' answers are obtained about the physical evidence in the Regional Drinking Water Company (PDAM) of Bukittinggi City. Then the second variable of service quality studied by the author obtained the average results of respondents' answers regarding this empathy variable which is good, this service quality variable needs to be improved so that in the future the empathy in the Bukittinggi City Regional Drinking Water Company (PDAM) will be better than it is now or at least the current situation can be maintained. Then the third variable of service quality studied by the author obtained the average results of respondents' answers regarding the responsiveness variable which were quite good, so that in the future it needs to be improved further.

Then the fourth variable of service quality studied by the author obtained the average results of respondents' answers regarding this reliability variable which was quite good, meaning that the reliability provided by the Bukittinggi City Regional Drinking Water Company (PDAM) needs to be improved again so that respondents' answers are not like they are now regarding the reliability at the Bukittinggi City Regional Drinking Water Company (PDAM). Then the fifth variable of service quality studied by the author obtained an average of respondents' answers regarding the guarantee variable giving good criteria so that it can be concluded that of the five service qualities studied according to the respondent's criteria, the service quality at the Bukittinggi City Regional Drinking Water Company (PDAM) has quite good and good criteria so that in the future it needs to be improved again to a better stage than it is now.

## 8. Conclusion

Based on the results of the analysis of the author's research on the Influence of Service Quality on Customer Satisfaction of the Regional Drinking Water Company (PDAM) of Bukittinggi City, the following conclusions were obtained. That the quality of service consisting of physical evidence, empathy, responsiveness, reliability and assurance has a positive and significant effect on Customer Satisfaction of the Regional Drinking Water Company (PDAM) of Bukittinggi City. The most dominant variable influencing Customer Satisfaction of the Bukittinggi City Regional Drinking Water Company (PDAM) is empathy.

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