

# THE INFLUENCE OF SERVICE QUALITY ON CUSTOMER TRUST THROUGH VARIABLES INTERVENING CUSTOMER SATISFACTION USING STRUCTURAL EQUATION MODELING METHOD IN PT.XYZ

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## ABSTRAK

*Pada perusahaan yang bergerak di bidang jasa tentu tidak lepas kaitannya dengan konsumen, Diperlukannya penilaian terhadap kepuasan pelanggan. Kepuasan pelanggan pada PT. XYZ juga menjadi orientasi pihak perusahaan. Namun, pada perusahaan yang baru berdiri ini belum ada penilaian terkait kepuasan pelanggan, sehingga belum bisa mengevaluasi faktor apa saja yang menyebabkan kepuasan pelanggan serta faktor atau hal apa saja yang dapat berhubungan dengan Kepuasan Pelanggan. Adapun hal yang memiliki pengaruh dari kualitas pelayanan adalah Customer Trust dan dapat dipengaruhi oleh kualitas pelayanan. Menggunakan metode structural equation modeling dapat mempermudah untuk mengetahui nilai atau tingkatan dari pengaruh antar variabel. Dari hasil ini dapat membantu evaluasi perusahaan jika ketiga variable memiliki pengaruh positif atau baik. Maka perusahaan perlu membuat strategi untuk meningkatkan kepuasan pelanggan. Hasil dari penelitian ini didapatkan bahwa keterlibatan kualitas pelayanan berpengaruh secara positif dan signifikan terhadap kepuasan pelanggan karena semakin tingginya keterlibatan kualitas pelayanan yang diperoleh, maka semakin tinggi tingkat kepuasan pelanggan pada perusahaan. Selain itu juga didapatkan kesimpulan bahwa kualitas pelayanan dan kepuasan pelanggan berkorelasi sehingga memberikan pengaruh positif terhadap Customer Trust.*

Kata Kunci: Kepuasan pelanggan, Kualitas Pelayanan, Customer Trust, Structural Equation Modeling (SEM)

## ABSTRACT

*In companies engaged in the service sector, of course it cannot be separated from consumers, the need for food and customer satisfaction. Customer satisfaction at PT. PT. XYZ is also the orientation of the company. However, in this newly established company, there are no orders that satisfy customers, so they can assess what factors cause customer satisfaction and what factors or things can be related to Customer Satisfaction. The things that have an influence on service quality are customer trust and reliability of service quality. Using structural equation modeling methods can make it easier to see the value or influence between variables. From this result, it can help evaluation if the three variables have a positive or good effect. Then the company needs to make a strategy to increase customer satisfaction. The results of this study found that the involvement of service quality has a positive and significant effect on customer satisfaction because the higher the involvement of service quality*

*obtained, the higher the level of customer satisfaction in the company. In addition, it is also concluded that service quality and customer satisfaction are correlated so that it has a positive influence on customer trust.*

*Keywords: Customer Satisfaction, Service Quality, Customer Trust, Structural Equation Modeling (SEM)*

## 1 Introduction

PT.XYZ is a distribution company engaged in services, there are installation, maintenance and rePT. XYZ r services for water heater units. In a distribution company like this, of course there are many competitors in the same field. This company is also still pioneering and is always improving and developing the work system so that this company can be managed more. In a company engaged in the service sector, of course it cannot be separated from the consumer, there will always be communication with the consumer. Because this company is not only focused on sales. The company still has responsibility after the sale. So, it is necessary to assess customer satisfaction. Customer satisfaction can be seen from various factors such as the responsiveness of the company, the commitment of the company, etc. Customer satisfaction at PT. XYZ is also the orientation of the company as stated in the vision of the company itself. Every business actor in each business category is required to be sensitive to any changes that occur and place an orientation towards customer satisfaction as the main goal [1].

Customer satisfaction analysis is the main topic of this research. The results of the analysis of customer satisfaction can provide important information to the company, where customer analysis is an important aspect in the business world. Regardless of the results or product quality, customers will assess the quality of service at each company. According to [2] service quality can be interpreted as an effort to meet the needs and desires of consumers and the accuracy of their delivery in balancing consumer expectations. Because in buying and selling transactions for services or products, good service is needed so that customers can get clear information and can solve problems for customers with a product or service sold by the company.

Service quality is an assessment from the consumer side with several indicators or aspects of the services provided by the service provider. If the service received by consumers is in accordance with what they expect, the quality of service can be said to be good or satisfying to consumers. Customer trust is defined as the thoughts, feelings, emotions, or behavior that are manifested when customers feel that the provider can be relied on to act in their best interest when they give up direct control [3]. Customer trust is formed because of the possibility of creating positive behavioral interest towards a particular company or brand because the company can provide a good first impression on consumers.

Customer satisfaction there are several factors that influence it, one of the factors is in terms of service to consumers or customers. The impact of customer satisfaction is where if the consumer or customer is satisfied it will be likely or likely that the customer will repurchase the service or product being sold. In this study using the Structural Equation Modeling method. Because the SEM is different from the analysis of the network and PLS. According to [4] Structural Equation Modeling (SEM) is an evolution of multiple equation models developed from econometric principles and combined with regulatory principles from psychology and sociology, SEM has emerged as an integral part of academic managerial research. Structural Equation Modeling is a method used to determine the cause and effect of variables in research. So, the relationship between variables will be known and can find out correlated errors.

## 2 Research Method

### 2.1 Method of Collection Data

The data collection technique is an important factor in the success of the research. The data collection techniques in this study are as follows:

1. Observation  
In this observation, the researcher is directly involved with the situation being observed as a data source. Observations are made to determine the real condition of the company at this time, especially with regard to the object to be studied.
2. Questionnaire/Questionnaire  
According to [5] : a questionnaire is a data collection technique which is done by giving a set of questions or written statements to respondents to answer.
3. Literature study  
Literature study is carried out by researchers by looking for reference books, reports, journals and other media to study. Literature study is a support that can support data collection and discuss the object of research.

### 2.2 Determination of the Number of Samples

Determination of the number of samples in this study using the calculation of the Slovin formula. The Slovin formula is a formula or formula for calculating the minimum number of samples if the behavior of a population is not known with certainty. This formula was first introduced by Slovin in 1960. In this study, the population size was known, with the following calculations:

$$n = 143; e = 0.05$$

So, it can be obtained the number of samples needed in this study are:

$$N = \frac{n}{(1+(n \times e^2))} \quad (1)$$

$$N = \frac{143}{(1+(143 \times 0.05^2))}$$

$$N = 105$$

The number of samples needed is 105 respondents from 143 populations in the 1-year period (September 2019-August 2020) PT.XYZ

### 2.3 Operationalization of Research Variables

Operational variables explain the variables under study, concepts, indicators, units of measure, and measurement scales that will be understood in research operations. The operationalization of the variables in this study can be seen in the table as follows:

**Table 1.** Operationalization of Variable Independent

Variable	variable Concept	Question Indicator
Service Quality (X1)	The quality of service from PT.XYZ is a very high thing. From the quality of service, whether it will have an influence on	1. PT. XYZ provide services according to those in promise. (X1.1)

**Table 1.** Operationalization of Variable Independent

Variable	variable Concept	Question Indicator
Service Quality (X1)	customer satisfaction and customer trust and whether during this one year consumers have been satisfied with the service from PT.XYZ	2. PT. XYZ provides responsive service to consumers with clear information delivery. (X1.2) 3. PT. XYZ conducts service visits/unit delivery/unit installation on time according to the specified schedule. (X1.3) 4. PT.XYZ understand the desires that consumers need. (X1.4) 5. PT. XYZ has an attractive and easy-to-use website appearance and other social media platforms. (X1.5)

**Table 2.** Operationalization of Variable Dependent

Variable	variable Concept	Question Indicator
customer satisfaction (Y1)	Customer satisfaction variable is an intervening variable which makes the relationship between service quality and trustworthiness customer.	1. Consumers Satisfied with PT. XYZ services 2. PT. XYZ are able to respond to consumer complaints. 3. PT. XYZ is able to guarantee the unit warranty and proper installation.
Customer Trust (Y2)	This variable is a variable that is influenced by the two variables of service quality and customer satisfaction. From this variable, we will find out all the effects of the two variables and what is the effect and how much influence it is and what kind of things the company needs to evaluate.	1. Consumers choose the PT. XYZ service for service or repurchase. 2. Consumers will recommend the PT. XYZ because of its excellent service. 3. Consumers are not interested in paying attention to services provided by competing companies.

In the question, three indicators, the above variables are question items from the reference journal such as:

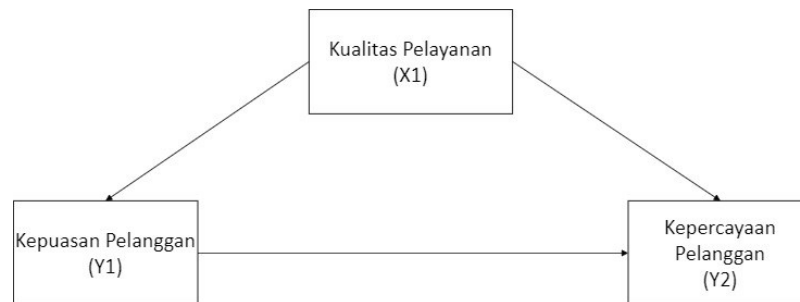
1. Analysis of Service Quality, Customer Satisfaction, Trust, Commitment and Customer Loyalty in E-commerce Services [6]

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2. Analysis of Customer Satisfaction and Loyalty Pt. Bank Rakyat Indonesia (Persero) Tbk. Yogyakarta Cik Ditiro Branch Office. [3]

## 2.4 Research Model

In this research model, the effect of service quality on customer trust with the intervening variable customer satisfaction is described as follows:



**Figure 1.** Research Model

H1: Service quality has a positive effect on customer satisfaction.

H2: Customer satisfaction has a positive effect on customer trust.

H3: Service quality has a positive effect on customer trust.

H4: Service quality intervening with customer satisfaction has a positive effect on customer trust.

## 3 Result and Discussion

### 3.1 Data Collection

Data collection started from observations at PT. XYZ regarding an overview of the After Sales Service unit. The data used in this study were taken from the Operational and Project division, namely data on unit installation and maintenance/service from September 2019 - August 2020 which contains 142 customer transaction data on maintenance services and solar water heater unit installation services for PT. XYZ. The attribute data used is customer respondent data resulting from distributed questionnaires and will then be processed using Microsoft Excel 2016 and Amos Graphics 24 Software.

### 3.2 Validity Test

Before determining the calculated  $r$  value from the results of the validity test, it is necessary to do it first to find the  $r$  table by calculating using ms. Excel so that  $r$  table = 0.249181654 is obtained with information  $df = 104$  and with a real level value = 1%. Statement items that have a correlation coefficient value  $r$  count 0.249 for  $n = 105$  then the data is declared validly. Test the validity of each statement item from 105 respondents. The results of the validity test of the statement items can be seen in the following table.

**Table 3.** Validity Test Results

Variable	Pearson Correlation	Sin. (2-tailed)	Information
X1.1	0,885	0,000	Valid
X1.2	0,894	0,000	Valid
X1.3	0,855	0,000	Valid

**Table 4.** Validity Test Results

Variable	Pearson Correlation	Sin. (2-tailed)	Information
X1.4	0,896	0,000	Valid
X1.5	0,800	0,000	Valid
Y1.1	0,908	0,000	Valid
Y1.2	0,899	0,000	Valid
Y1.3	0,892	0,000	Valid
Y2.1	0,912	0,000	Valid
Y2.2	0,895	0,000	Valid
Y2.3	0,916	0,000	Valid

The determination of the validity test can be done in two ways:

1. R table with  $n = 105$ , significance = 0.01 (2-tailed) is 0.249. The calculated R value or the Pearson Correlation value for each variable  $> r$  table. Then the data are declared validly. Because in the results of data processing, all question items have a calculated R value that is greater than R table.
2. The value of sig. (2-tailed) On all variables is 0.000. So, the data are declared validly because sig (2-tailed)  $< 0.05$  or  $0.000 < 0.05$ .

### 3.3 Reliability Test

In reliability testing, the results of the statement item score (variable) are measured and seen from the Cronbach's Alpha value [10]. The variable is said to be reliable if Cronbach's Alpha  $\geq 0.6$ . Following are the results of the reliability test on the Service Quality variable (X1).

**Table 4.** Service Quality Reliability Test Results (X1)

Reliability Statistics	
Cronbach's Alpha	N of Items
0.916	5

It can be seen that Cronbach's Alpha value on the service quality variable with the number of question items 5 is 0.916, which means that it is greater 0.6. It can be concluded that the variable (statement item) is reliable or reliable because Cronbach alpha  $> 0.6$ . Furthermore, it can be seen the results of the reliability test on the customer satisfaction variable (Y1).

**Table 5.** Customer Satisfaction Reliability Test Results (Y1)

Reliability Statistics	
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Cronbach's Alpha	N of Items
0.883	3

It can be seen that Cronbach's Alpha value on the customer satisfaction variable with the number of question items 3 is 0.883, which means that it is greater than 0.6. It can be concluded that the variable (statement item) is reliable or reliable because Cronbach alpha > 0.6 Furthermore, the reliability test results can be found on the customer trust variable (Y2).

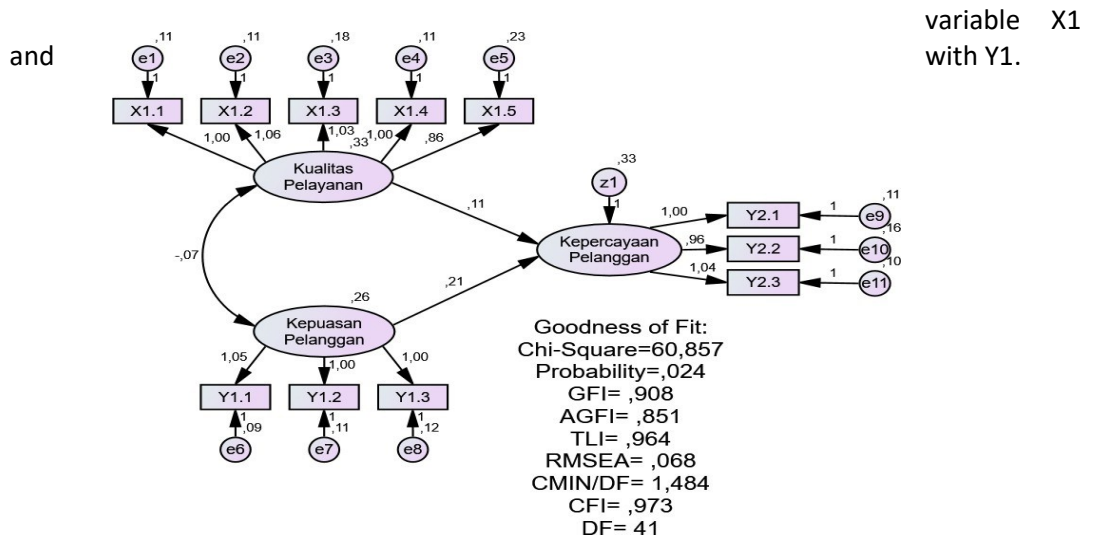
**Table 6.** Customer Trust Reliability Test Results (Y2)

Reliability Statistics	
Cronbach's Alpha	N of Items
0.893	3

It can be seen that Cronbach's Alpha value on the customer trust variable with the number of question items 3 is 0.883, which means that it is greater than 0.6. It can be concluded that the variable (statement item) is reliable or reliable because Cronbach alpha > 0.6

### 3.4 Structural Equation Modeling (SEM)

Structural Equation Modeling is a statistical technique for testing and estimating causal relationships using a combination of statistical data and qualitative responses [9]. Sem is also a combination of factor analysis, path analysis, and regression. SEM is used for multivariate variables where in the study there are latent variables (Latent variables are variables that cannot be observed directly.) In this research, Structural Equation Modeling is made using AMOS software. In this study, in making SEM there are 3 research variables, namely customer satisfaction (X1), service quality (Y1), and customer trust (Y2). The variable X1 is the independent variable. The concept is that this variable influences the variables Y1 and Y2. Then, for variable Y1 it is the dependent intervening variable, in this variable it becomes the relationship between variable X1 and Y2. And for variable Y2 is the dependent variable (dependent) where the variable results from the influence of the



**Figure 2.** Model of Structural equation Modeling

In the model above, it can be seen using the 1-way arrow which is a structural shape. The shape of the causal arrow is used because it shows the influence of one variable to another, while the 2 arrow model (measurement) shows the correlation/relationship between two variables.

### 3.5 Evaluation of Goodness of Fit Criteria

Goodness of fit is a suitability test and statistical test obtained from a model that has been made using Amos [8]. After forming a model and proceeding to enter the goodness of fit code so that there is an output that can be analyzed as in the table below:

**Table 7.** Goodness of Fit

<i>Goodness of Fit Index</i>	<i>Cut of value</i>	<b>Model Results</b>	<b>Model Evaluation</b>
<i>Chi square</i>	The smaller the better	60,857	
<i>p-value</i>	> 0,05	0,024	Bad
CMIN/DF	≤ 2,00	1,484	Good
GFI	≥ 0,900	0,908	Marginal
AGFI	> 0,900	0,851	Marginal
TLI	> 0,950	0,964	Good
CFI	> 0,950	0,973	Good
RMSEA	< 0,080	0,068	Good

1. Chi square dan p-value  
The chi square value obtained was 60.857 with a p-value smaller than or equal to 0.05, which is 0.024. So it can be said that the structural model is not good.
2. CMIN/DF  
The recommended CMIN/DF value for accepting a model fit is a smaller CMIN/DF value of 2.00. And the results obtained for 1.484 indicate a good fit model.
3. GFI  
With the level of acceptance recommended by GFI is greater than 0.900, and the results of the model show the number 0.908, it can be concluded that the model has a fairly good level of conformity.
4. AGFI  
AGFI is a development index from GFI, an index that has been adjusted to the available degree of freedom ratio for testing whether the model is accepted or not. With the recommended level of acceptance is greater than 0.900, and the model has an AGFI result of 0.851, it can be said to have a fairly good level of conformity.
5. TLI  
The Tucker Lewis Index is an alternative Incremental fit Index that compares a model being tested against a baseline model. The recommended level value as a good suitability level is greater than 0.950, and the model has a TLI result of 0.964, so the suitability level is good.
6. CFI  
CFI is an incremental suitability index that also compares the tested model with the null model. A good index which indicates that the model being tested has a good fit is if the CFI is greater than 0.950, and the model has a CFI result of 0.973 then the suitability level is good.



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7. RMSEA

The RMSEA value that is less than 0.080 is an index to which a model can be accepted which shows a close fit of a model based on the degree of freedom. The RMSEA value of 0.068 indicates a good suitability value because it is below 0.080.

According to [7], if one or more parameters are fit, the model is declared fit. From the results of the Goodness of Fit test which can be seen in table 5.10 above, along with the explanation provided, it is proven that almost all of the models show a fit result so that it can be said that the model made is suitable for use. [8]

3.6 Evaluate The Causality Test

Table 8. The Causality Test

			Estimate	S.E.	C.R.	P	Label
Customer Trust	<---	Quality Service	,107	,111	,961	,336	
Customer Trust	<---	Customer Satisfaction	,207	,131	1,583	,113	
X1.1	<---	Quality Service	1,000				
X1.2	<---	Quality Service	1,065	,088	12,089	***	
X1.3	<---	Quality Service	1,029	,098	10,481	***	
X1.4	<---	Quality Service	1,003	,085	11,776	***	
X1.5	<---	Quality Service	,862	,099	8,706	***	
Y1.3	<---	Customer Satisfaction	1,000				
Y1.2	<---	Customer Satisfaction	1,005	,106	9,497	***	
Y1.1	<---	Customer Satisfaction	1,046	,108	9,697	***	
Y2.1	<---	Customer Trust	1,000				
Y2.2	<---	Customer Trust	,961	,096	9,972	***	
Y2.3	<---	Customer Trust	1,040	,096	10,851	***	

From the above it can be seen that all indicators of C.R value > 0.681 (t-table df 41, t = 0.5) , so it can be concluded that these indicators are significantly the dimensions of the latent variables formed [9]. Then, to see the relationship between variables whether positive or negative can be seen in the Standardize Reg column [10]. Weight ( $\lambda$ ). If there is no sign "-" then the relationship between these variables is positive. As in the table below:

**Table 9.** The Standardize Reg Column Weight

		<b>Estimate</b>
Customer Trust	<--- Quality Service	,106
Customer Trust	<--- Customer Satisfaction	,179
X1.1	<--- Quality Service	,871
X1.2	<--- Quality Service	,879
X1.3	<--- Quality Service	,811
X1.4	<--- Quality Service	,866
X1.5	<--- Quality Service	,722
Y1.3	<--- Customer Satisfaction	,824
Y1.2	<--- Customer Satisfaction	,843
Y1.1	<--- Customer Satisfaction	,869
Y2.1	<--- Customer Trust	,871
Y2.2	<--- Customer Trust	,815
Y2.3	<--- Customer Trust	,887

Based on Table above, it can be seen that variable (X1) has a positive effect on the variable (Y1), variable (Y1) has a positive effect on the variable (Y2), variable (Y2) has a positive effect on variable (X1), and variable (X1) positive effect on variable (Y2). Hypotheses H1, H2, H3, and H4 are accepted.

## 4 Conclusion

After conducting research modeling with output analysis from AMOS, testing validity of the reliability test fiber using Structural Equation Modeling (SEM) method can certainly provide information about the relationship between customer satisfaction, service quality, and customer trust in the company. The result of this study include:

1. Involvement of service quality in PT.XYZ has a positive and significant effect on customer satisfaction because the higher the involvement of service quality obtained, the higher level of customer satisfaction in the company.
2. Service quality affects customer trust in PT. XYZ, this is proven through the results of data processing using AMOS 26 which get good results in this study. So it can be concluded that the quality of service is good and significant to customer trust because the better the level of service quality provided by the company, the higher customer trust in PT. Indonesian Water Heater.
3. Customer satisfaction affects customer trust in PT. XYZ, this is proven through the results of data processing using AMOS 26 which get good results in this study. Thus, it can be concluded that the involvement of customer satisfaction is good and significant on customer trust because the higher customer satisfaction with the company, the higher customer trust in the company.
4. Customer satisfaction has a positive effect on service quality and also customer trust, this is because customer satisfaction can be a link between service quality and customer trust. From this it can be seen that service quality and customer satisfaction are corelated and can have a positive influence on customer trust.

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