

## ANALYSIS OF SERVICE QUALITY AND SATISFACTION CUSTOMERS USING THE FUZZY METHOD ON PLASA TELKOM MAJALENGKA

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### **Abstract**

*Plasa Telkom is a service that is fully managed by us or in cooperation with partners is provided to serve the customers / potential customers are serviced directly (face to face) with a wide range of possibilities, both recognize the need for all information related to our services and products for the fulfillment of the product itself. Plasa is a facility walk-in customer service points where customers can obtain a variety of information products and services, including billing, payment, suspension of subscriptions, promotions until the grievance. Among the types of serv phone bill payment, payment of the new post, a new plug / mutation, disorders, and others. Indihome product (phone, internet on fiber or high speed internet and cable useetv). Here the author will discuss about the quality of service on the plaza Telkom Majalengka through fuzzy method.*

*Dimensions that will be discussed is the reliability (reliability), responsiveness (responsiveness), assurance (assurance), empathy (empathy), and evidence (tangibles). In order to determine each of these dimensions with fuzzy measurement.*

**Keywords:** *fuzzy measurement, Service Quality, Fuzzy Method*

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### **Introduction**

Service quality is a capital that can describe the condition of customers by comparing the service they expect with what they receive in evaluating quality. Good service quality is one of the important factors in creating customer loyalty. Service can be said to be good or quality if the services provided by a company can satisfy its customers. Therefore, a quality service can be said to be of high quality which will make customers feel satisfied with the services that have been provided by the company so that it can directly make consumers loyal and will remain loyal to the company.

Quality can be seen as a weakness or improvement of consumer response. Consumer expectations can vary from one consumer to another even though the service provided remains the same or consistent. Good service to customers and quality levels can be achieved consistently by improving services and paying special attention to service performance standards, both internal service standards (work systems, service methods, costs) and external service standards (how to always be consistent in order to get expectations). consumer). Service is the key to success in any service business or country. Its role will be decisive if in service activities in the community there is competition in an effort to seize services or people who need them. Based on the data above, most of the complaints experienced by customers are the internet. These include slow internet, disconnects, and other complaints. As for the phone, there are errors, interruptions, dead, can't receive and other complaints. The number of complaints that have been resolved is 395. And that includes various aspects of the internet, telephone, UseeTv, and modems. The rest are still in progress. The complaint data is from January – March 2016. Internet complaints still dominate among other complaints. The number of complaints until March 2016 that entered Plasa Telkom Majalengka was around 462.

Therefore, the author wants to find out through this research. After being explained above, it turns out that there are still many written complaints. therefore the authors took the title of the research "INFLUENCE OF SERVICE QUALITY ON CUSTOMER SATISFACTION AT PLASA TELKOM MAJALENGKA". The aim is to know the quality of service and its effects on customer satisfaction

through this research. And hopefully through this research there will be changes for the better for Plasa Telkom Majalengka in the future.

## **Research methods**

### **Field observation**

The initial stage is field observation. The research was carried out at Plasa Telkom Majalengka by conducting direct observations in the field according to the conditions at that time.

### **Literature review**

At this stage, various documentations, research results, and theories are collected which are directed to obtain research concepts related to the existing problems as a basis for further research stages.

### **Identification of problems**

Limitation of the problem is one way so that a study does not deviate far from its original purpose. Perumusan Masalah

### **Formulation of the problem**

This research is structured based on the description in chapter I regarding the background of the problem. Problem formulation is an attempt to formulate or find the core of the problem to be solved in a study, from a phenomenon that exists in the world of society, systematically based on existing theories.

### **Determination of Research Objectives and Benefits**

Determination of research goals and benefits needs to be done before research because these goals and benefits can provide direction for researchers to achieve the desired goals. The objectives and benefits of the research itself are obtained based on the results of the previous research problem formulation stage, which essentially is an attempt to find answers to the questions that are the core problems in the research.

### **Service Quality Attribute Data Collection (Questionnaire)**

Design Data collection techniques show how the steps taken to collect data to be used in research.

### **Withdrawal of Conclusion**

From testing the data regarding the adequacy, reliability and validity of the data, as well as from processing data regarding the customer satisfaction index number using the fuzzy-servqual method and then fuzzification to get a single value, then an analysis will be carried out to answer the questions that are the core problems in the study.

## Results and Discussion

### Data processing

#### Data Sufficiency Test with Total Defective Data

The questionnaires that the author distributed were 52. And only 50 were declared eligible, due to 2 defective questionnaires. So that only 50 questionnaires were declared eligible. So

$$P = \frac{50 - 2}{52} = \frac{50}{52} = 0,96$$

$$Q = 1 - 0,96 = 0,04$$

By using a significance level of 95% (from the normal distribution table, the value of  $Z = 1.6$  and an error value of 5%, the above formula can calculate the desired minimum number of samples (n),

that is :

$$N = \frac{Z^2 \times P \times Q}{e^2}$$

$$N = \frac{(1,6)^2 \times 0,96 \times (0,04)}{(0,05)^2} = \frac{2,56 \times 0,96 \times 0,04}{0,0025} = 39,32 \approx 39$$

Then  $N = 39.32$  respondents, because 52 respondents so that 52 39.32 then the number of samples is accepted.

From the calculation above, it appears that the minimum sample that must be met is 39 respondents. In this study, a formal sample of 52 respondents was used so that the questionnaire distributed had met the calculated sample.

### Respondents Overview

Table 4.4.1 Respondents by Gender Group

Jenis kelamin	Jumlah	Persentase (%)
Pria	17	34%
Wanita	33	66%
Total	50	100%

Based on the table above, the female respondent group is 33 people with a percentage of 66% and the male group is 17 people with a percentage of 34%.

Table 4.4.2 Respondents by Age Group

Umur	Jumlah	Persentase (%)
20 – 29	11	22%
30 – 39	18	36%
40 – 49	16	32%
50 >	5	10%
Total	50	100%

Based on the table above, the group of respondents aged between 30-39 years is more than 18 people with a percentage of 36%. And the other groups are 16 people aged 40-49 years, 20-29 years old 11 people, and finally at least 5 people aged 50 and over.

Table 4.4.3 Respondents by Education Group

Pendidikan	Jumlah	Persentase (%)
SD	0	0 %
SMP	5	10%
SMA	19	38%
Akademik	7	14%
Perguruan Tinggi	19	38%
Total	50	100%

Based on elementary education 0%, Middle School 5 people 10%, SMA 19 people 38%, Academic 7 people 14%, and College 19 people 38%.

Table 4.4.4 Respondents by Occupational Group

Pekerjaan	Jumlah	Persentase (%)
Pelajar	6	12 %
Petani	3	6%
Wiraswasta	11	22%
Pegawai swasta	7	14%
PNS	13	26%
TNI/POLRI	4	8%
Lainnya	6	12%
Total	50	100%

Based on the work of students 6 people 12%, Farmers 3 people 6%, Entrepreneurs 11 people 22%, Private employees 7 people 14%, PNS 13 people 26%, TNI/POLRI 4 people 8%, and others who are not included in the job list that is 6 people 12%.

Table 4.4.5 Respondents by Income Group

Pendapatan	Jumlah	Persentase (%)
< 500.000	1	2%
500.000 – 1.000.000	4	8%
1.000.000 – 1.500.000	10	20%
1.500.000 – 2.000.000	15	30%
> 2.000.000	20	40%
Total	50	100%

Based on income < 500,000 1 person 2%, 500,000 – 1,000,000 4 people 8%, 1,000,000 – 1,500,000 10 people 20%, 1,500,000 – 2,000,000 15 people 30%, and > 2,000,000 20 people 40%.

**Validity test**

The purpose of testing the validity of this data is to determine the accuracy of the questionnaire distributed. In testing the validity of the data, it is done by comparing the calculated r value with the r table value.

In this study, the validity of all questionnaire results was tested with the help of SPSS 16.00 software. With the number of questionnaires as many as 52 defects 2 then  $df = 52 - 2 = 50$ ; = 5%, then the rtable is 0.279. (see r Table in appendix).

n	Taraf Signifikan		n	Taraf Signifikan		n	Taraf Signifikan	
	5%	1%		5%	1%		5%	1%
3	0,997	0,999	27	0,381	0,487	55	0,266	0,345
4	0,950	0,990	28	0,374	0,478	60	0,254	0,330
5	0,878	0,959	29	0,367	0,470	65	0,244	0,317
6	0,811	0,917	30	0,361	0,463	70	0,235	0,306
7	0,754	0,874	31	0,355	0,456	75	0,227	0,296
8	0,707	0,834	32	0,349	0,449	80	0,220	0,286
9	0,666	0,798	33	0,344	0,442	85	0,213	0,278
10	0,632	0,765	34	0,339	0,436	90	0,207	0,270
11	0,602	0,735	35	0,334	0,430	95	0,202	0,263
12	0,576	0,708	36	0,329	0,424	10	0,195	0,256
13	0,553	0,684	37	0,325	0,418	12	0,176	0,230
14	0,532	0,661	38	0,320	0,413	15	0,159	0,210
15	0,514	0,641	39	0,316	0,408	17	0,148	0,194
16	0,497	0,623	40	0,312	0,403	20	0,138	0,181
17	0,482	0,606	41	0,308	0,398	30	0,113	0,148
18	0,468	0,590	42	0,304	0,393	40	0,098	0,128
19	0,456	0,575	43	0,301	0,389	50	0,088	0,115
20	0,444	0,561	44	0,297	0,384	60	0,080	0,105
21	0,433	0,549	45	0,294	0,380	700	0,074	0,097
22	0,423	0,537	46	0,291	0,376	800	0,070	0,091
23	0,413	0,526	47	0,288	0,372	900	0,065	0,086
24	0,404	0,515	48	0,284	0,368	000	0,062	0,081
25	0,396	0,505	49	0,281	0,364			
26	0,388	0,496	50	0,279	0,361			

The criteria for a data can be declared valid if ( $r$  Count  $r$  Table).

The results of the calculation of the validity of the data as shown in the table as follows:

Table 4.5.1.2 Validity Test Calculation Results

Dimensi	Atribut	rHitung	rTabel	Kesimpulan
Keandalan (Reliability) ( $X_1$ )	( $X_{1,1}$ ) Kemudahan dalam proses pendaftaran menjadi pelanggan baru	0,557	0,279	Valid
	( $X_{1,2}$ ) Kemudahan dalam pembayaran rekening diloket - loket pembayaran	0,625	0,279	Valid
	( $X_{1,3}$ ) Pelaksanaan pencatatan dirumah pelanggan	0,662	0,279	Valid
Ketanggapan (Responsiveness) ( $X_2$ )	( $X_{2,1}$ ) Kecepatan dan ketanggapan karyawan dalam pelayanan administrasi pelanggan baru	0,778	0,279	Valid
	( $X_{2,2}$ ) Kecepatan dan ketanggapan karyawan dalam proses pembayaran rekening	0,742	0,279	Valid
	( $X_{2,3}$ ) Kecepatan petugas lapangan dalam menyelesaikan keluhan pelanggan	0,648	0,279	Valid
	( $X_{2,4}$ ) Ketanggapan petugas pencatat dalam melaksanakan pencatatan	0,519	0,279	Valid
Jaminan (Assurance) ( $X_3$ )	( $X_{3,1}$ ) Keramahan dan kesopanan petugas penerima pengaduan dalam memberikan pelayanan	0,567	0,279	Valid
	( $X_{3,2}$ ) Kejujuran karyawan dalam tugas pembayaran sambungan baru	0,524	0,279	Valid

	(X <sub>1.1</sub> ) Ketrampilan karyawan dalam menangani proses pembayaran rekening	0,619	0,279	Valid
	(X <sub>1.2</sub> ) Ketrampilan karyawan dalam menangani gangguan teknik	0,655	0,279	Valid
<b>Empati (Empaty) (X<sub>2</sub>)</b>	(X <sub>2.1</sub> ) Sikap petugas di loket – loket pembayaran	0,761	0,279	Valid
	(X <sub>2.2</sub> ) Kepekaan petugas penerima keluhan maupun pengaduan terhadap kebutuhan informasi	0,709	0,279	Valid
<b>Bukti nyata(X<sub>3</sub>) (Tangibles)</b>	(X <sub>3.1</sub> ) Kebersihan dan kerapihan berpakaian petugas	0,703	0,279	Valid
	(X <sub>3.2</sub> ) Kebersihan dan kenyamanan kantor pelayanan secara umum	0,795	0,279	Valid
	(X <sub>3.3</sub> ) Kenyamanan ruang tunggu kantor pelayanan	0,759	0,279	Valid
	(X <sub>3.4</sub> ) Fasilitas tempat parkir dikantor pelayanan	0,492	0,279	Valid

### Reliability Test

To test the accuracy of the measurement results of the questionnaire, a reliability test was carried out. A test instrument is said to have a level of confidence if the test gives the right results. The magnitude of the best reliability is 1 and the worst is 0. The greater the value obtained, the more reliable the attribute. If the calculation is not reliable, it is necessary to review the preparation of the questionnaire. The criteria for a data can be declared reliable if ( $\alpha$  Calculate Table). The results of processing the complete reliability test can be seen below:

Table 4.5.2.1 Reliability Test Calculation Results

Dimensi	Atribut	$\alpha$ Hitung	$\alpha$ Tabel	Kesimpulan
<b>Keandalan (Reliability) (X<sub>1</sub>)</b>	(X <sub>1.1</sub> ) Kemudahan dalam proses pendaftaran menjadi pelanggan baru	0,916	0,279	Reliabel
	(X <sub>1.2</sub> ) Kemudahan dalam pembayaran rekening diloket – loket pembayaran	0,914	0,279	Reliabel
	(X <sub>1.3</sub> ) Pelaksanaan pencatatan dirumah pelanggan	0,913	0,279	Reliabel
<b>Ketanggapan (Responsiveness) (X<sub>2</sub>)</b>	(X <sub>2.1</sub> ) Kecepatan dan ketanggapan karyawan dalam pelayanan administrasi pelanggan baru	0,909	0,279	Reliabel
	(X <sub>2.2</sub> ) Kecepatan dan ketanggapan karyawan dalam proses pembayaran rekening	0,910	0,279	Reliabel
	(X <sub>2.3</sub> ) Kecepatan petugas lapangan dalam menyelesaikan keluhan pelanggan	0,913	0,279	Reliabel
	(X <sub>2.4</sub> ) Ketanggapan petugas pencatat dalam melaksanakan pencatatan	0,916	0,279	Reliabel
<b>Jaminan (Assurance) (X<sub>3</sub>)</b>	(X <sub>3.1</sub> ) Keramahan dan kesopanan petugas penerima pengaduan dalam memberikan pelayanan	0,915	0,279	Reliabel
	(X <sub>3.2</sub> ) Kejujuran karyawan dalam tugas pembayaran sambungan baru	0,916	0,279	Reliabel
	(X <sub>3.3</sub> ) Ketrampilan karyawan dalam	0,914	0,279	Reliabel

	menangani proses pembayaran rekening			
	(X <sub>1,4</sub> ) Ketrampilan karyawan dalam menangani gangguan teknik	0,913	0,279	Reliabel
Empati ( <i>Empaty</i> ) (X <sub>4</sub> )	(X <sub>2,1</sub> ) Sikap petugas di loket – loket pembayaran	0,909	0,279	Reliabel
	(X <sub>2,2</sub> ) Kepekaan petugas penerima keluhan maupun pengaduan terhadap kebutuhan informasi	0,911	0,279	Reliabel
Bukti nyata(X <sub>2</sub> ) ( <i>Tangibles</i> )	(X <sub>3,1</sub> ) Kebersihan dan kerapihan berpakaian petugas	0,911	0,279	Reliabel
	(X <sub>3,2</sub> ) Kebersihan dan kenyamanan kantor pelayanan secara umum	0,908	0,279	Reliabel
	(X <sub>3,3</sub> ) Kenyamanan ruang tunggu kantor pelayanan	0,909	0,279	Reliabel
	(X <sub>3,4</sub> ) Fasilitas tempat parkir dikantor pelayanan	0,918	0,279	Reliabel

## Conclusion

From the research/discussion that has been done in the previous chapter, it can be concluded that:

Table 6.1 the results of the scores on each dimension

No.	Dimensi	Kriteria skor nilai
1.	Ketanggapan ( <i>responsiveness</i> )	3,975 ( kurang baik)
4.	Bukti nyata ( <i>tangibles</i> )	4,015 (baik)
3.	Jaminan ( <i>assurance</i> )	4,0175 (baik)
5.	Empati ( <i>empaty</i> )	4,055 (baik)
2.	Keandalan ( <i>reliability</i> )	4,13 (baik)

After being compared based on the table above, the responsiveness dimension is the one with the least score, namely 3,975. Thus, it is still below the good standard score (4). And this dimension by the Plasa Telkom Majalengka must be evaluated and improved. Because the respondents assessed that the dimensions still have shortcomings, namely the responsiveness and speed of field officers in resolving customer complaints.

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