Jurnal Sains Komputer & Informatika (J-SAKTI)
Volume 6 Nomor 2, September 2022, pp. 1057-1065
ISSN: 2548-9771/EISSN: 2549-7200
https://tunasbangsa.ac.id/ejurnal/index.php/jsakti

Analysis of The Influence of Service Quality and Relationship Quality on Customer Satisfaction

Aprilia Fitri Karimah[1], Vita Ratnasari[2]
Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia
e-mail: apriliafk@gmail.com, vita_ratna@statistika.its.ac.id

Abstract

PT. PLN (Persero) is one of the State-Owned Enterprises (BUMN) which aims to provide and serve customer needs for electric power. To improve efficiency, service quality, and electricity supply, PT. PLN (Persero) has transformed into four main focuses, namely Lean, Green, Innovative, and Customer Focused. At the point of Customer Focus, PT. PLN (Persero) especially UP3 Kendari has implemented a web-based system to manage complaints and reports of disturbances. The high level of public complaints, demanded PT. PLN (Persero) to improve services that have been provided to the community. It aims to build a good image in society. In this study, a theoretical model and 3 hypotheses were proposed to be tested using the SEM method. This study uses primary data by using data questionnaires to 150 customers. The results of the SEM analysis show that the service quality variable with a value of 0,832 is significantly and positively related to customer satisfaction. Otherwise, the relationship quality with a value of 0.030 has no significant effect on customer satisfaction. The relationship quality variable has an indirect effect on customer satisfaction through service quality of 0.739. To increase customer satisfaction, PLN needs to improve the quality of customer relationships.

Keywords: *service quality, relationship quality, customer satisfaction, SEM-PLS.*

1. INTRODUCTION

Maintaining a good relationship with customers is the key to the company's success to be able to survive and serve the needs of consumers well. Customer Relationship Management is one of the company's tools to improve service, help companies retain their customers, and increase company revenue. In the procurement of services in the electricity sector, PT PLN is still touted as a company that still monopolizes the market. This phenomenon occurs because there is no tight competition in the electricity service industry, thus making customer demands very complex. Therefore, customer relationship management or CRM plays an important role in maximizing the company's ability to convey the company's impression to customers. If Customer Relationship Management is implemented properly it can minimize the number of complaints from customers. Reinartz (2004) said that how to manage good and effective customer relationship management has been a hot topic for academics and practitioners for the past few years.

PT PLN, which is engaged in services and aims to provide and serve the needs of customers for electric power, strives to improve service quality by increasing the reliability of the electricity network to remote villages. Apart from the quality of service, PLN also strengthens relationships with its customer, both household, industrial and government customers. To improve service quality and relationship quality, PLN has developed a CRM strategy and has made a lot of automation in its business processes, one of which is by handling customer service centrally to improve the quality of service to

customers. One of the strategic models used by PLN is to implement and integrate all customer data through the Yantek Optimization and PLN Mobile Relaunch programs. Through PLN Mobile or Call Center 123, customers can submit technical and non-technical complaints, such as the process of installing new old ones, power outages, increasing electricity bills, and so on. On the other hand, on the internal side of PLN, there is a web-based system, namely APKT which is used to manage distribution network operations, recording, handling, and recovering disturbances and customer complaints, the process of which is real-time online and integrated within the PLN environment.

The increase in the number of customer complaints must be viewed positively, that it shows the increasing awareness and concern of customers on the reliability of the PLN network that supplies electricity to remote parts of Southeast Sulawesi. Service is a very important element to increase customer satisfaction. The business of providing electricity is controlled by the state and its supply needs to be continuously improved in line with development developments so that electricity is available in sufficient, equitable, and quality quantities. For this reason, PT PLN pays special attention to service activities in terms of meeting customer needs so that in its implementation it can satisfy its customers.

Furthermore, many studies using the Structural Equation Modeling method with service quality and relationship quality variables have been carried out, including research by Shodiya et al. (2018), Wajid and Giaoa (2020), Vuonga (2020) conducted a study on the relationship of service quality to customer satisfaction. The results showed that tangible, reliability, responsiveness, and assurance had a positive effect, while reliability had a negative effect on customer satisfaction. Subsequent research was conducted by Waqar et al. (2020) which examines the relationship between relationship quality and customer satisfaction. The results show that communication has a positive effect, while trust and commitment have a negative effect on customer satisfaction.

Based on the description of the existing problems and previous research, it is necessary to have a continuous service improvement process and improve customer relations at PT PLN UP3 Kendari to improve service quality and customer satisfaction. It is intended that the company's services to customers can run properly by following the company's vision and mission. Therefore, this study discusses the effect of service quality and relationship quality to increase customer satisfaction of PT PLN UP3 Kendari by using Structural Equation Modeling.

2. RESEARCH METHODOLOGY

2.1. Type of Research

This research is a causal type of research where it will investigate the influence of service quality and relationship quality on customer satisfaction. According to Hair, et al. (2007:160), causal research tests whether or not one event causes another.

2.2. Place and Time of Research

This study was conducted between March and June on the customers of PT PLN (Persero) in Kendari.

2.3. Population and Sample

The population is an identifiable group of elements (e.g, people, products, organizations) of interest to the researcher and pertinent to the information (Hair et al, 2007). The population in the research is the customers of PT PLN (Persero) UP3 Kendari who have reported complaints and disturbances either through Contact Center 123, or PLN Mobile during 2019-2021. So that the sample distribution can be evenly distributed in each work unit at PT PLN (Persero) UP3 Kendari, a sample size sampling technique is used. This study uses the sample size sampling formula because in sampling, the number must be representative so that the research results can be generalized and the calculation does not require a table of the number of samples, but can be done with simple formulas and calculations. The sample size of this research is 150 respondents to prove that the sample size used is more than the minimum or required respondents.

2.4. Data Collection Method

Sekaran and Bougie (2009:180) defined primary data as information obtained first-hand by the researcher on the variables of interest for the specific purpose of the study. While secondary data are data that have already been gathered by researchers, data published statistically and in other journals, and information available from any published or unpublished source available either within or outside of the organization, all of which might be useful to the researcher. In this study, questionnaires will be distributed to collect the required primary data. The making of the questionnaire statement refers to the previous research conducted by Ida et al. (2018) and Rahmadi (2020) related to customer satisfaction.

2.5. Data Analysis Method (Validity and Reliability Testing)

The validity of a scale may be defined as the extent to which differences in observed scale scores reflect true differences in what is being measured, rather than systematic or random (Malhotra & Peterson, 2006). Measurement of construct validity using partial least square software can use in two ways, namely convergent validity and discriminant validity. Measuring convergent validity by looking at the loading factor of each indicator, if there is a loading factor value with an AVE value greater than 0.5 then the indicator is declared valid. While the measurement of discriminant validity is carried out by comparing, among others, the square of the average variance extract (AVE) for each construct with the correlations between other constructs in the model. The model has sufficient discriminant validity if the AVE root value for each construct is greater than the correlation value between constructs. Reliability refers to the internal consistency and stability of the value of the results of a certain measurement scale. Reliability concentrates on the issue of measurement accuracy and results. The measurement of

construct reliability using partial least square software is done by looking at the composite reliability output value of each construct. If the output value is greater than 0.7 ($\alpha > 0.7$), ideally between 0.8-0.9 then the constructs are declared reliable (Ghozali, 2011).

2.6. Structural Equation Modeling Analysis

This study uses the Structural Equation Modeling (SEM) method and the analysis tool used in this method is Smart PLS 3.0 (PLS) software. SEM-PLS is a causal modeling approach that aims to maximize the variance of the criterion latent variables that can be explained by the predictor latent variables (Hair et al., 2017). PLS is an analytical tool that allows researchers to get the value of the latent variable for prediction. The orientation of PLS analysis shifted from testing causality/theory models to component-based predictive models. The latent variable is defined as the sum of the indicators. The PLS algorithm wants to get the best weight estimate for each indicator block of each latent variable. The result of the score component for each latent variable is based on the estimated indicator weight that maximizes the variance explained for the dependent variable (latent, observe, or both).

3. RESULTS AND DISCUSSION

The research involved confirmatory studies in confirming the validity of the model. SPSS version 22.0 was used to process descriptive statistics to measure the demographic profile of the sample. SEM-PLS version 3.0 software was used to evaluate the research model.

3.1. Description of Respondent Characteristics

Table 2 reveals males representing 66% (99) and females representing 34% (51). This indicate that more males responded to the items than females.

Table 2. Description of Respondent Characteristics

Description	Count		Percentage %	
	Male	Female	Male	Female
Gender	99	51	66,00%	34,00%
Education				
Elementary - Senior High School	58	3	38,67%	2,00%
Diploma / Bachelor / Master	41	48	27,33%	32,00%
Profession				
Student	3	11	2,00%	7,33%
Employee	75	16	50,00%	10,67%
Entrepreneur	14	13	9,33%	8,67%
Housewife	0	11	0,00%	7,33%
Others	7	0	4,67%	0,00%

3.2. Validity and Reliability Test

Table 2 display the reflective model for SEM-PLS for convergent validity, discriminant validity, and internal consistency reliability. The

indicator loadings, average variance extracted (AVE), and composite reliability (CR) values of the latent constructs were extracted after performing the confirmatory factor analysis on all the constructs. In SEM-PLS model, the indicator loading was above 0,70 and the findings ranged from 0,805-0,952. All the constructs met the AVE's minimum required value of 0,5. AVE's values for SQ, RQ, CS are 0,840; 0,781; and 0,757; respectively and they having met above minimum threshold requirement proposed for the internal consistency because the composite reliability value showing a number more than 0.70. So, it can be concluded that the measurement model is good because it meets the criteria of validity and reliability, and it is accurate enough for the analysis.

Table 3. Validity and Reliability Test

Variable	Indicator	Loading Factor (≥0,70)	AVE (≥0,50)	Composite Reliability (≥0,70)
Service Quality (X)	X1	0,878	0,84	0,963
	X2	0,908		
	X3	0,952		
	X4	0,927		
	X5	0,917		
Relationship Quality (Y)	Y1	0,915	0,781	0,914
	Y2	0,926		
	Y3	0,805		
Customer Satisfaction (Z)	Z1	0,883	0,757	0,926
	Z2	0,834		
	Z3	0,873		
	Z4	0,889		

3.3. Structural Model

Testing of the structural model or structural model is carried out to see the relationship between variables, significance value, and R-square of the research model. Assessing the model with PLS, it begins by looking at the R-Square for each dependent latent variable, which can then be seen from the value of Q2.

Table 4. R-Square Test

Variabel	R Square	Q2
Customer Satisfaction (Z)	0,737	0,945
Service Quality (X)	0,79	

Based on the table above, it can be seen that the Customer Satisfaction variable can be explained by relationship quality and service quality of 73.7%, while 26.3% is explained by other variables outside the study. th service quality variable can be explained by relationship quality by 79% while 21% is explained by other variables outside the study. Furthermore, the Q2 value of 0.945 indicates that the customer satisfaction modeling has relevant predictions.

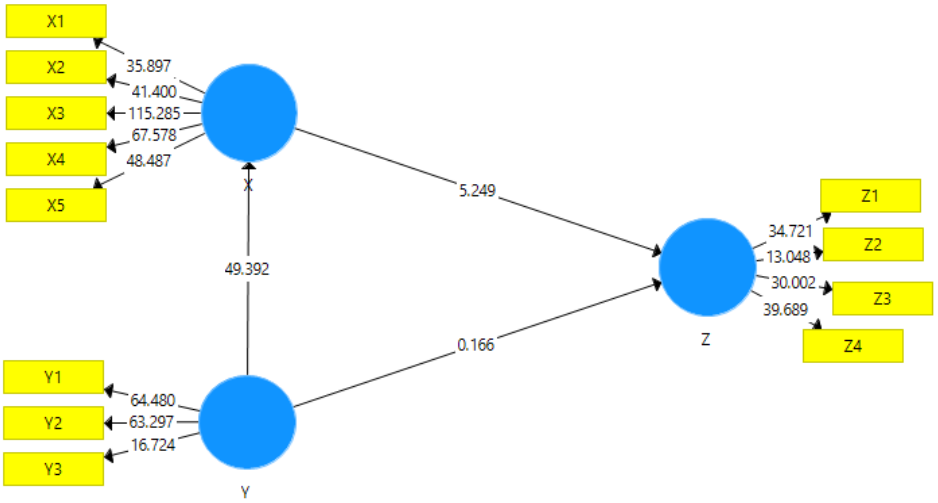

Figure 1. Diagram Path

Hypothesis testing was conducted to determine the relationship between the research variables with the bootstrapping procedure. Research Hypothesis:

a) H0: There is no significant effect between Service Quality and Customer Satisfaction
   H1: There is a significant effect between Service Quality and Customer Satisfaction
b) H0: There is no significant effect between Relationship Quality and Customer Satisfaction
   H1: There is a significant effect between Relationship Quality and Customer Satisfaction
c) H0: There is no significant effect between Relationship Quality and Service Quality
   H1: There is a significant influence between Relationship Quality and Service Quality

Hypothesis testing is done by comparing the values of tcount and ttable (1.96). If the value of tcount is greater than ttable then H0 is rejected and if tcount is less than ttable then H0 is accepted. By using a significance level of 5% and the statistical test, the coefficients, tcounts, and p-values are obtained as follows.

Table 5. Hypothesis testing (direct relationship)

Construct	Original Sample	Standard Deviation	T Statistics	P Values
Service Quality (X) -> Customer Satisfaction (Z)	0,832	0,158	5,249	0
Relationship Quality (Y) -> Customer Satisfaction (Z)	0,03	0,182	0,166	0,868
Relationship Quality (Y) -> Service Quality (X)	0,889	0,018	49,392	0

Based on the table, the influence between latent variables can be explained as follows.

a) Effect of Service Quality on Customer Satisfaction
The tcount value of 5.249 is greater than 1.96 so the service quality variable has a significant effect on customer satisfaction. It can be interpreted that service quality has a positive influence on customer satisfaction of 0.832.

b) Effect of Relationship Quality on Customer Satisfaction
The tcount value of 0.166 is smaller than 1.96, meaning that the relationship quality variable has no significant effect on customer satisfaction.

c) Effect of Relationship Quality on Service Quality
The tcount value of 49.392 is greater than 1.96 so the relationship quality variable has a significant effect on service quality. It can be interpreted that relationship quality has a positive influence on service quality of 0.889.

This test can be done by looking at the direct, and indirect effects. The following shows direct, indirect and total effect.

Table 6. Hypothesis testing (indirect relationship)

Effect	Construct	Service Quality	Customer Satisfaction
Direct Effect	Relationship Quality	0,889	0,03
	Service Quality		0,832
Indirect Effect	Relationship Quality		0,739
Total Effect	Relationship Quality	0,889	0,769
	Service Quality		0,832

A direct effect is a direct effect between latent variables. The relationship quality variable has a direct influence on service quality variable of 0.889 and 0.030 on customer satisfaction. The service quality variable has a direct influence on customer satisfaction of 0.832. The indirect effect is the influence caused by latent variables through other variables. The relationship quality variable has an indirect effect on customer satisfaction through service quality of 0.739. This value is obtained by multiplying the coefficient of the influence of relationship quality on service quality and the coefficient of the influence of service quality on customer satisfaction (0.889 × 0.832 = 0.739). While the total effect is the magnitude of the influence between latent variables either directly or indirectly. Next is to calculate the standard error value (S_γβ). S_γ is the standard error value of the Relationship Quality variable on Service Quality. S_β is the standard error value of the Service Quality variable on Customer Satisfaction. At a significance level of 5%, the value of tcount is greater than ttable (1.96), it can be concluded that relationship quality has a significant indirect effect on customer satisfaction.

4. CONCLUSIONS

Based on the results of calculations obtained in this study, it can be concluded several things, there are: service quality affects customer satisfaction, which means that the higher and better the quality of service

provided, it can be ascertained that customer satisfaction can be achieved. The first indicator that has the most positive effect on service quality so that customer satisfaction can be achieved is the responsiveness indicator. And indicators that have less effect on service quality, causing less customer satisfaction to be achieved are indicators of tangible. The relationship quality has no significant effect on customer satisfaction, which means that not all customers will be satisfied if only with the quality of the relationship, but there must be other factors. This is because the quality of the relationship perceived by the customer is not optimal so the effect on customer satisfaction is not significant.

Based on the results that the quality of service is an important factor in forming customer satisfaction and creation of the trust, then PT PLN (Persero) needs to pay attention to the quality of services that can be given. The quality of the service includes the reliability of the power delivered in the service, the speed in responding to customer requests, the provision of warranties to consumers, special attention to customers, and the ease and convenience of service. These factors can help guide PT. PLN (Persero) to provide excellent service to customers. The second finding is that the relationship quality is still lacking and not optimal. This needs improvement to improve the value of customer satisfaction.

To maintain customer satisfaction, PLN needs to offer something more valuable to increasing relationship quality with customer processes, such as rewards and promotional offers, to gain customer satisfaction. Also, PLN needs to hear dissatisfaction, complaints, and advice from their consumers. PLN can use social media such as Twitter, Facebook, or its own website to know what the consumer talk about, besides PLN Mobile and CC 123.

REFERENCES

[1]. Achmad Rahmadi, 2020. Analisis Pengaruh Kualitas Pelayanan Jasa Terhadap Kepuasan Pelanggan Dengan Metode Multi Linear Kepuasan Pelanggan Dengan Metode Multi Linear Kepuasan Pelanggan Dengan Metode Multi Linear. Pekanbaru: UIN SUSKA RIAU.

[2]. Christopher H. Lovelock, Lauren Wright, 2016. Principles of service marketing and management. Prentice-Hall.

[3]. Don Peppers, Martha Rogers, 1993. The one to one future: Building relationships one customer at a time. s.l.:New York: Currency Doubleday.

[4]. Ha NamKhanh Giao, Bui NhatVuong, 2021. The Impact of Service Quality on Passenger Loyalty and The Mediating Roles of Relationship Quality: A Study of Domestic Flights with Vietnamese Low-Cost Airlines. Transportation Research Procedia, Issue 56, pp. 88-95.

[5]. Ida Afriliana, Hilda Munadia, Indra Dwi Hasta, 2018. E-Kuesioner Kepuasan Pelanggan Pada PT. PLN (Persero) Rayon Tegal Timur. Jurnal ICT : Information Communication & Technology, pp. 2303-3363.

[6]. Imam Ghozali, 2011. MODEL PERSAMAAN STRUKTURAL: Konsep & Aplikasi Dengan Program AMOS 19.0. edisi 4 BP Undip Semarang. Grönroos, Christian 1984. A Service Quality Model and its Marketing Implications. European Journal of Marketing, Issue 18(4), pp. 36-44.

[7]. Jonathan Lee, Janghyuk Lee, Lawrence Feick, 2001. The impact of switching costs on the customer satisfaction-loyalty link: mobile phone service in France. Journal of services marketing.

[8]. Joseph F. Hair, Rolph E. Anderson, William C. Black, Ronald L. Tatham, 1995. Multivariate date analysis with readings. Englewood Cliff.

[9]. Malhotra, N. K., & Peterson, M. (2006). Basic marketing research: A decision-making approach. Prentice hall.

[10]. Motamedifar, A., Nadimi, G., Mojdehi, E. M., Kandsari, A. G., & Razavipour, M., 2013. Relationship between relationship quality (RQ) and customer loyalty: Case Study Refah stores of Rasht. International Research Journal of Applied and Basic Sciences, Issue 4(7), pp. 1868-1871.

[11]. Parasuraman, Valarie A. Zeithaml, Leonard L. Berry, 1988. Communication and control processes in the delivery of service quality. Journal of marketing, Issue 52(2), pp. 35-48.

[12]. Philip Kotler, Kevin Keller, Mairead Brady, Malcolm Goodman, Torben Hansen, 2019. Marketing Management. 4th European Edition ed. s.l.:Pearson UK.

[13]. Robert W. Palmatier, 2008. Interfirm relational drivers of customer value. Journal of Marketing, Issue 72(4), pp. 76-89.

[14]. Sekaran, U. and Bougie, R. 2009. Research Methods for Business: A Skill Building Approach, 5th ed. Wiley: UK.

[15]. Shodiya Abideen, Ojenike Joseph, Jolaosho Surajudeen, Adebayo Adeyinka, 2018. Service quality and customer satisfaction of electricity distribution company: A study of Olumo Business Hub, Abeokuta, Ogun State. Asian Journal of Economics, Business and Accounting, Issue 8(4), pp. 1-18.

[16]. Waqar Nadeem, Mari Juntunen, Farid Shirazi, Nick Hajli, 2020. Consumers' value co-creation in sharing economy: The role of social support, consumers' ethical perceptions and relationship quality. Technological Forecasting and Social Change, Issue 151.

[17]. Werner Reinartz, Manfred Krafft, Wayne D. Hoyer, 2004. The customer relationship management process: Its measurement and impact on performance. Journal of marketing research, Issue 41(3), pp. 293-305.

[18]. Zoya Wajid Satti, Samreen Fahim Babar, Shagufta Parveen, Kashif Abrar, Asma Shabbir, 2020. Innovations for potential entrepreneurs in service quality and customer loyalty in the hospitality industry. Asia pacific journal of innovation and entrepreneurship.