Assessing Service Quality in Healthcare Public Sector: An Exploratory on Puskesmas

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Abstract

To achieve competitive advantage, an organization has to measure and improve the quality of its services continuously, leading to customer satisfaction. This also applies to non profit organizations, such as Puskesmas, a government owned clinic located in sub-districts. This paper aims to determine the dimensions that can be used to assess the quality of puskemas' services, so that leveraging factors in order to improve the quality of its services can be identified. The data are collected through surveys, which were conducted at six puskesmases in Tangerang to 200 patients. The SERVQUAL instrument with a five factor structure is used to assess the quality of the service. Data were analyzed not only by descriptive analysis but also by multivariate regression analysis with Structural Equation Modeling (SEM). The results showed that the two dimensions of SERVQUAL had a significant influence on the quality of service in puskesmas, namely 'tangibility' and 'assurance'. Although SERVQUAL is able to capture important elements in assesing service quality, it has limitations in the validity of inference. However, this study is still able to provide input for management of puskesmas.

Keywords
Puskesmas, service quality, healthcare, public, Tangerang

1. Introduction

Quality management is important for health services. Various studies related to quality management have been carried out in the health sector. The implementation of quality management helps hospitals to increase their awareness about quality (Miguel, 2006) so that, hospitals will improve the quality of their services (Yang, 2003). Multiple health service organizations have implemented quality management to improve their operating processes (Lagrosen et al., 2007). Through the implementation of Total Quality Management (TQM), organizations are able to meet the real needs and expectations of customers (Lam et al., 2012). When patients get medical services, theywill compare their experience with his expectations. Comparisons of the expected and actual service by an outpatient is expressed as service satisfaction (Raposo et al., 2009). By increasing service quality, it will increase service satisfaction. Service quality can be determined through customer assessment toward the services (Buyukozkan et al., 2011). Thus, to be competitive, hospitals must evaluate the quality of their services (Chaniotakis and Lymperopoulos, 2009).

In Indonesia, the government is responsible for the availability of all forms of the good quality in health services, which are safe, efficient, and affordable to all levels of society (Article 19 of Law No. 36 of 2009). One of the efforts made by government to meet its responsibility in providing good quality of health services and affordable to all levels of society is the establishment of Puskesmas, a community health center in each sub-district (Bappenas, 2009). Puskesmas is the technical service implementing unit of county/city government, which is responsible for organizing health development in the work area. The quality of service is closely related to the comparison of the reality and the expectation of the services to customers, namely appropriate and affordable. Puskesmas as the first-level agent of the health service efforts is responsible for providing health services to all people who are administratively domiciled in their working areas. With the presence of Puskesmas, it is expected that the community can obtain proper quality of health services with the easiest access and affordable costs (Bappenas,

2009). Health organizations, including puskesmas as a spearhead of health services for the community, have to strive to improve their services to maintain the loyality of its customer (Puay and Nelson, 2000). This certainly requires continuous efforts to improve service quality (Zaim et al., 2010).

Tangerang, is a developing area. Tangerang with 13 sub-districts has 33 Puskesmas serving more than 1.8 million people, with a composition of 51.02% of men and 48.98% of women (Tangerang City Health Office, Tangerang City Health Profile 2015). The majority of Tangerang residents graduated from high school (46.77%). The Tangerang government continuously improves health services for its citizens. But unfortunately, when the Tangerang government tried to improve services, the number of patient visits to the health center decreased. When compared with the number of people who used Puskesmas in 2014 with 2015, the percentage decreased by 100% (in 2014 there were 1,906,092 people, while in 2015 there were 880,536 people). Therefore, it is important to identify the health services provided by Puskesmas in Tangerang and then to evaluate it to find out the dimensions which have significant influence on determining the quality of services. By increasing service quality, it will increase costomer satisfaction, so that strive for zero defections could be reached. This is necessary, because generally government-owned health services, like many other public institutions, have low productivity and low service quality (Kalepu, 2014).

This study took a case study at 6 Puskesmas in Tangerang, namely Puskesmas Cipondoh, Tanah Tinggi, Batu Ceper, Cikokol, Benda, and Poris Pelawad. Six Puskesmas out of 33 Puskesmas in Tangerang were selected randomly. In 2015, Puskesmas Cipondoh; Batu Ceper; Poris Pelawad; and Tanah Tinggi were visited by 31,849; 25,811; 22,143; 20,926 people respectively. While Puskesmas Cikokol; and Benda were visited by 18,402 people and 16,901 people respectively (Tangerang City Health Office, Tangerang City Health Profile 2015, Data on Puskesmas visits in Tangerang in 2015).

Understanding the factors that influence service quality is important in the health industry. By finding relationship among service dimensions, hospital managers will be able to have scientific insight in order to increase tsatisfaction and loyalty of the patient (Sadeh, 2017). To define service quality in the health industry is still somewhat ambiguous, because quality is influenced by various factors, namely: process, structure and outcome (Hogston, 1995). Nevertheless, a review of the quality of services remains important. Understanding patient expectations and perceptions of services is important. Thus, the main objective of this study is to determine the dimensions to assess the quality of health services and ultimately using the data collected to determine the factors influencing and the leverage to increase customer satisfaction toward health services provided at Puskesmas Tangerang.

2. Literatur

Increased competition among health care organizations caused patient satisfaction became important (Mortazavi et al. 2009). Patient satisfaction is patient psychological state involving feelings, both positive and negative toward their experience of receiving health services (Chang et al., 2013). One of the objectives of implementing quality management is to make continuous improvements and increase loyalty customer. To maintain the loyalty of the customer, one of the important factors in the service sector is customer satisfaction. Therefore, it is important to know the satisfaction of each service (Hasin et al., 2001), including the quality of health services.

Generally, customers have expectations and perceptions of a service. Therefore, assessment of service quality levels is influenced by two parameters, namely customer perception (P) and customer expectations (E). Expectations are customer desires; something that should be provided by the service provider. Perception is a consumer evaluation of service providers. Differences in expectation and perception values will produce scores that determine the level of service quality (Zaim et al., 2010). The level of service quality is expressed as perception minus expectations (Sheetal and Harsh, 2004). Good service quality for customers was expressed as how well the service received compared to their expectations (Lewis, 1993) or exceeded their expectations (Reeves and Bednar, 1994).

The SERVQUAL model can be used to assess the level of service quality, where this model is based on a gap analysis between "customer expectations" and "customer perception". The five dimensions of SERVQUAL are as follows: 1. Tangibility, 2.Reliability, 3. Responsiveness, 4. Assurance, 5. Empathy. Parasuraman et al. (1988) elaborate the five dimensions of SERVQUAL as follows: (1) Tangibility: This shows the appearance of the physical facilities of the organization, the equipment used, the appearance of personnel and the communication material used; (2) Reliability: is the organization's ability to provide promised and reliable services; (3) Responsiveness: This shows the willingness of employees to help customers and provide services quickly; (4) Assurance: This is related to knowledge, manners, employee competence and ability to increase customer trust in the organization; (5). Empathy:

is concern, attention given to customers, both ease of communication and understanding customer needs (Manjunatha and Shivalingaiah, 2004).

The SERVQUAL instrument is a questionnaire with several question items covering five important dimensions of service quality. This tool has been widely applied, including in quality services in hospitals (Zarei et al., 2012). The five dimensions of SERVQUAL's divided into several items, which differs each other according to the researcher. Lam (1997) dividing SERVQUAL dimensions into 22 items, while Aagia and Garg (2010) divided them into 24 items. Sohail (2003) into 15 items, Snipes et. al., (2010) into 27 items, and Zarei et al., (2012) into 22 items. In this study, five dimensions of SERVQUAL are divided into 13 items. Determination of SERVQUAL items refers to previous research conducted by Zarei et al., (2012), Yousapronpaiboon and Johnson (2013), and Kalepu (2014).

SERVQUAL or modified SERVQUAL has been used extensively to measure service quality in health care sector (Pai, Y. P. and Chary, S. T., 2013). The results of the study show that the improvement in health services needed varies from country to country. Research on the quality of hospital services in Saudi Arabia shows that the tangibles and accessibility aspects are the most influencing factors on consumer satisfaction compared to other aspects (Al-Hawary, 2012). Likewise, research on the quality of hospital services in Turkey (Çeelik and Sehribanoglu, 2012), Iran (Zarei et al., 2012) and at Kerman University (Nekoei-Moghadam and Amiresmaili, 2011) show that the tangibility aspect is the most important aspect affecting satisfaction of patient perception. While the research of Al-Hawary et al. (2011) at a hospital in Jordan showed that the the most affecting aspect for patient satisfaction were the caring staf, which were doctors, nurses and health professionals, including academic / professional qualifications and also the services they provided and comfortable accommodation. Different things are shown by John's research (1991) which shows that the perception of service quality in hospitals can be improved through communication between patients and service providers. Indian hospital research shows that hospitals in India need to concentrate more on reliability and responsiveness (Kalepu, 2014). But the research by Qolipur et al., (2018), found a negative gap in all dimensions of service quality in the hospitals studied. Thus, it appears that the aspects providing service satisfaction vary from one to the other hospital.

3. Research Methodlogy

3.1. Research Model

This research is explanatory using deductive approach. The research instrument was a questionnaire with a Likert scale of 1 to 5. The questionnaire used was a questionnaire from research conducted by Zarei et al., (2012), Yousapronpaiboon and Johnson (2013), and Kalepu (2014). The model built in this study consists of two parts, namely "Service Quality" and "Customer Satisfaction", as shown below:

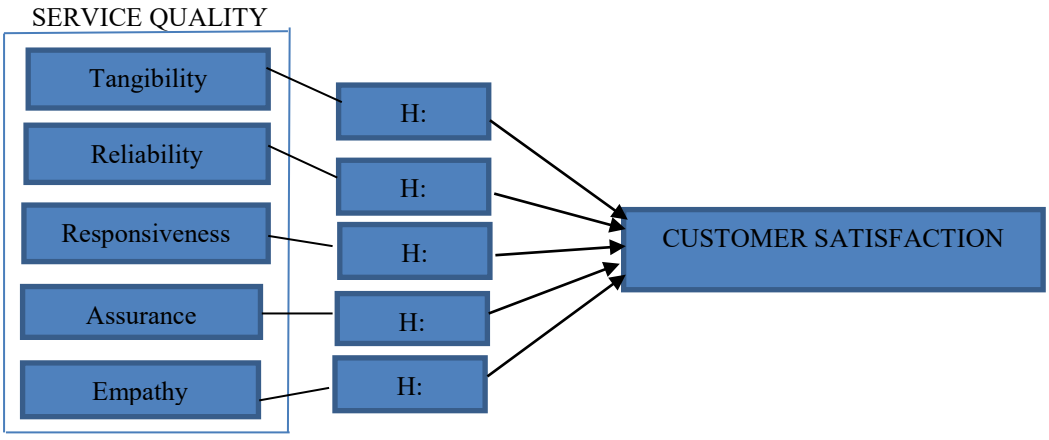

Figure 1. Conceptual Framework

3.2. Population dan Sample

The research locus chosen purposively was the Puskesmas in Tangerang. The population of this study were patients who visited puskesmas in Tangerang. The sampling technique used was non-probability, convenience sampling because respondents were chosen based on the availability and comfort of patients who were visiting. To collect quantitative data, 200 questionnaires were distributed, at six Puskesmas. The sample size of 200 people is

considered sufficient to represent the existing population. This refers to previous researchers, which also use similar sample sizes, namely: Sohail (2003); Ariffin and Aziz (2008); Aagja and Garg (2010).

Respondents observed consisted of 43% of men and 57% of women. Six Puskesmas out of 33 Puskesmas in Tangerang were selected randomly. The selection of respondents is done randomly, and each questionnaire will be kept confidential. There were 177 valid questionnaires, as shown in Table 1 below.

Table 1. Number of Sample in Each Puskesmas

No	Nama Puskesmas	No of patients	Percentage (%)
1	Puskesmas Cipondoh	32	18
2	Puskesmas Tanah Tinggi	40	23
3	Puskesmas Cikokol	21	12
4	Puskesmas Batu Ceper	20	11
5	Puskesmas Benda Baru	36	20
6	Puskesmas Poris Pelawad	28	16
	TOTAL	177	100

To find out the representation of the sample statistically, the data adequacy test was carried out. Data adequacy test resulted in N' = 67.3. Since N '<N, it can be concluded that the sample taken statistically represented the existing population.

Next, the data were analyzed by 2 methods, namely descriptive analysis and multivariate regression analysis. The level of confidence used is 95%. After performing analysis of the indicators forming latent variables with confirmatory factor analysis, the next step is to carry out multivariate regression analysis with SEM by using Analysis of Moment Structure Software (AMOS). SEM analysis is done by using full model.

3.3. Descriptive Analysis

Results of data processing on questionnaire for tangibility, reliability, responsiveness, assurance and empathy are shown in Table 2.

Table 2. Respondent Responses on Questionnaire

Variable	Indicator	Satisfaction Level					Index
		5	4	3	2	1	
Tangibility (X_1)	Room cleanliness and comfort X_{11}	46	100	20	8	3	4.01
	Staff appearance X_{12}	25	120	24	6	2	3.90
	Equipment facilities X_{13}	34	121	21	1		4.06
Reliability (X_2)	Solving Problem X_{21}	31	123	23			4.05
	Service reliability X_{22}	26	131	18	1	1	4.02
Responsiveness (X3)	Staff Readiness X_{31}	26	138	13			4.07
	Readiness to help patients X_{32}	24	133	15	5		3.99
	Timeliness X_{33}	22	142	11	2		4.04
Assurance (X4)	Staff knowledge X_{41}	29	118	27	3		3.98
	Staff confidence X_{42}	17	143	14	2	1	3.98
Empathy (X5)	Honesty and patience X_{51}	29	127	17	3	1	4.02
	Justice in providing services X_{52}	30	132	14	1		4.08
	Understanding patient needs X_{53}	29	127	19	2		4.03

The results of data processing show that the most significant factors influencing satisfaction of visitors at the six puskesmas are the factors of 'responsiveness' and 'empathy', which have the average satisfaction value of 4.04. The lowest satisfaction level is 'assurance' which has an average value of 3.98, and tangibility is 3.99.

3.4. Multivariate Regression Analysis.

3.4.1. Confirmatory Factor Analysis

Confirmatory factor analysis is used to test uni-dimensionality, validity and reliability of construct measurement models that cannot be measured directly. Feasibility test of the model, as the results of confirmatory factor analysis for construction of five factors, is presented in Table 3.

Table 3. Feasibility Model Testing Results on Factor Analysis

Construct	Goodness of Fit Index	Cut-off Value	Result	Model Evaluation
Tangibility	Chi Square (X^2)		19,934	
	Probability	≥ 0,05	0,332	Good
	RMSEA	≤ 0.08	0,024	Good
	GFI	≥ 0.90	0,922	Good
	AGFI	≥ 0.90	0,923	Good
	CMIN/DF	≤ 2.00	1,500	Good
	TLI	≥ 0.90	0,945	Good
	CFI	≥ 0.90	0,978	Good
Reliability	Chi Square (X^2)		18,65	
	Probability	≥ 0,05	0,222	Good
	RMSEA	≤ 0.08	0,002	Good
	GFI	≥ 0.90	0,912	Good
	AGFI	≥ 0.90	0,962	Good
	CMIN/DF	≤ 2.00	1,567	Good
	TLI	≥ 0.90	0,945	Good
	CFI	≥ 0.90	0,911	Good
Responsiveness	Chi Square (X^2)		18,238	
	Probability	≥ 0,05	0,064	Good
	RMSEA	≤ 0.08	0,038	Good
	GFI	≥ 0.90	0,989	Good
	AGFI	≥ 0.90	0,947	Good
	CMIN/DF	≤ 2.00	1,551	Good
	TLI	≥ 0.90	0,912	Good
	CFI	≥ 0.90	0,923	Good
Assurance	Chi Square (X^2)		2,032	
	Probability	≥ 0,05	0,917	Good
	RMSEA	≤ 0.08	0	Good
	GFI	≥ 0.90	0,996	Good
	AGFI	≥ 0.90	0,987	Good
	CMIN/DF	≤ 2.00	0,339	Good
	TLI	≥ 0.90	1	Good
	CFI	≥ 0.90	1	Good
Empathy	Chi Square (X^2)		12,832	
	Probability	≥ 0,05	0,8217	Good
	RMSEA	≤ 0.08	0	Good
	GFI	≥ 0.90	0,986	Good
	AGFI	≥ 0.90	0,944	Good
	CMIN/DF	≤ 2.00	0,669	Good
	TLI	≥ 0.90	1	Good
	CFI	≥ 0.90	1	Good

The goodness of fit test results in the process of confirmatory factor analysis presented in Table 3 show that the 'tangibility' factor meets the established criteria. The probability value in the goodness of fit test is 0.332, which is greater than 0.05 indicates feasibility test of the model meets the requirements as a good model. Therefore, based on confirmatory factor analysis, 'tangibility' can be used for further analysis. The root mean square error of

approximation (RMSEA) for 'tangibility' shows the number 0.024, which is smaller than 0.08. This shows that it is still acceptable as a suitable model. The root mean square error of approximation (RMSEA) describes the residuals contained in the model. The Comparative Fit Index (CFI) is the comparative value of the model compiled with the ideal model. The CFI value for 'tangibility' is 0.978, a value greater than 0.90. The value of AGFI (Adjusted Goodness of Fit) is 0.923, a value greater than 0.90. This shows that the model is suitable. It can be concluded, based on the model parameters above, that the 'tangibility' factor is good.

Equivalent to 'tangibility', it can be stated that 'reliability', 'responsiveness', 'assurance' and 'empathy' are also good factors. The model parameters in feasibility test to build SEM model are qualified as good parameters because the feasibility test shows that the measurement of model parameters is fit. This can be seen from the measurement index of RMSEA, GFI, AGFI, CMIN / DF, TLI and CFI in the range of significant values.

3.4.2. SEM Analysis

After performing confirmatory factor analysis, the next step is to conduct SEM analysis using full model. Analysis of processed data at the stage of a full model SEM was conducted by conformation test and statistical test. SEM using modified – full model can be seen in Figure 2.

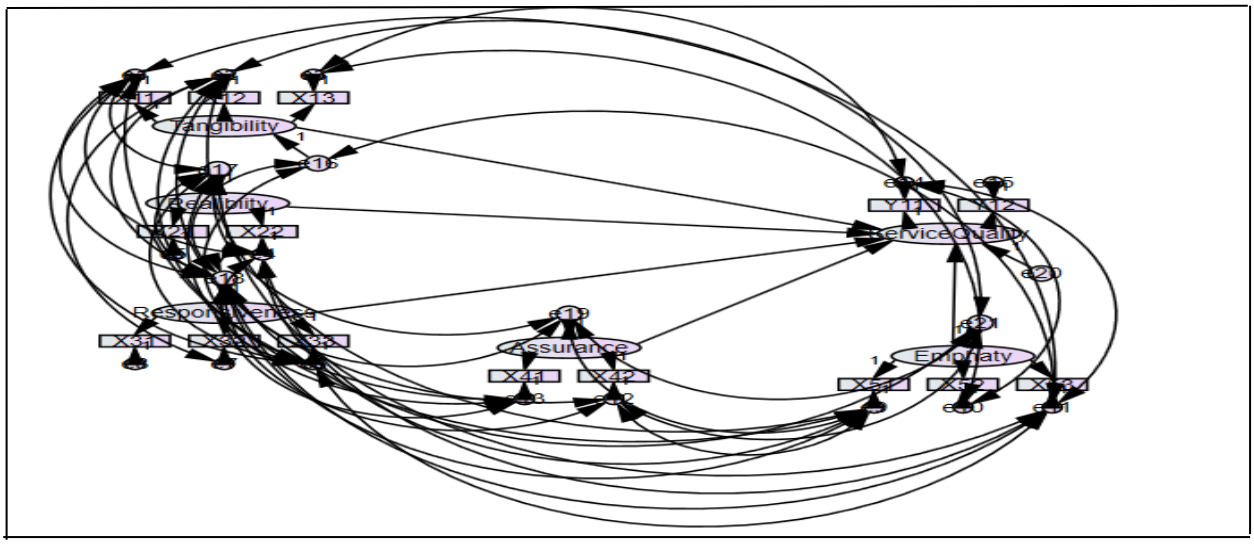

Figure 2. SEM - Using modified

Data processed using modified – full model SEM can be summarized in Table 4.

Table 4. SEM (Modified) Feasibility Test Result

Goodness of Fit Index	Cut-off Value	Analysis Result	Model Evaluation
Chi Square (X^2)		70,688	
Probability	≥ 0,05	0,511	Good
RMSEA	≤ 0.08	0,055	Good
GFI	≥ 0.90	0,952	Good
AGFI	≥ 0.90	0,974	Good
CMIN/DF	≤ 2.00	1,537	Good
TLI	≥ 0.90	0,946	Good
CFI	≥ 0.90	0,976	Good

Based on the results in Table 4, it can be seen that the model used was acceptable, since chi-square value obtained was 70,688 with probability value of 0.511. This show that structural equation model was good enough. Measurement index of RMSEA, GFI, AGFI, CMIN / DF, TLI and CFI indicated that the model tested had already met the required criteria.

3.4.3. Hypothesis Testing

Hypothesis testing to prove causality of relationship H1, H2, H3, H4, H5 based on the value critical ratio (CR) value of SEM analysis result, could be seen on Table 5.

Table 5. Hypothesis Testing Based on Critical Ratio Value

Variable	Estimate	S.E	C.R.	p-value
Service quality <--- Tangibility	1.333	.44	3.01	***
Service quality <--- Responsibility	-.646	1.09	-2.42	.034
Service quality <--- Responsiveness	-.453	5.37	-1.35	.045
Service quality <--- Assurance	1.341	.90	3.13	***
Service quality <--- Empathy	-.145	3.31	-5.44	.044

Hypothesis testing based on Table 5 shows that 'tangibility' and 'assurance' significantly affect service quality. Magnitude of the estimation coefficient for tangibility variable on service quality is 1,333. This indicates that if the tangibility variables increase by 1.0 then the service quality will increase by 1.333. Likewise, the magnitude of the estimation coefficient for assurance variable on service quality is 1,341. This indicates that if the assurance variables increase by the service quality will increase by 1,341.

While the other three variables, namely 'responsibility', 'responsiveness' and 'empathy' do not significantly affect service quality. The coefficient estimate of responsibility variable on service quality is approximately -2.42 (CR <1.96, not significant). This research also shows that responsiveness does not affect service quality. The coefficient estimate of responsiveness variables on service quality is approximately -.1.35 (CR <1.96, not significant). Likewise with empathy, which is not significant effect on service quality, because the coefficient estimate of empathy variables on service quality is approximately -.5.44 (CR <1.96, not significant).

4. Conclusion

The research findings indicate that two dimensions of SERVQUAL, namely ‘tangibility’ and ‘assurance’, are the most important factors in influencing the satisfaction of the patients at puskesmases in Tangerang. This shows that the aspects of ‘tangibility’ and ‘assurance’ are leverage factors to improve the quality of services at puskesmases in Tangerang.

The importance of ‘tangibility’ as an important factor influencing the perception of the patients at puskesmas in Tangerang is in line with the research on hospital service quality conducted in Turkey (Çeelik and Sehribanoglu, 2012) and also the research on hospitals conducted in Iran (Zarei et al., 2012). The ‘tangibility’ factor consists of physical appearance, cleanliness and comfort and appearance of employees which are important aspects for improving the quality of services at puskesmas in Tangerang.

In addition, the ‘assurance’ is also an important factor that influences the perception of patient at puskesmases in Tangerang. Managing human resource skills, is a leverage factor to improve the quality of Tangerang Public Health services. This is in line with the research on hospitals in Jordan conducted by Al-Hawary et al (2011). Therefore, a puskesmas, as the first level agent for health services for all the people who are administratively domiciled in its working area, should continuously improve the quality of its human resources.

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