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The Influence of Interactivity on Corporate Cellular Service Quality for Performance Excellence in Jakarta and West Java Provinces

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ABSTRACT

Competition among telecommunications service operators has been increasing significantly. "Quality," where it related to mobile telecommunications services, is an important keyword in the competition. This study aims to determine the effect of interactivity between operators and their customers as well as the influence of interactivity on the service quality of mobile operators. The sub-variables used for the interactivity (as independent variables) include control activities, interactivity responsibilities and non-verbal interactivities information. Quality of service is treated as a dependent variable. Sampling was conducted using the non-probability purposive sampling technique. Regression analysis showed that the quality of service is strongly influenced by the interactivity responsibilities sub-variable. On the other hand, the non-verbal interactivities information sub-variable had the least influence. The results indicate interactivity responsibility is considered to be the variable providing most influence on service quality, while the least influencing variable is the non-verbal information interactivity variable. The determination factor is 52.8%, meaning that interactivity is just 52.8% of the required variables for influencing the quality of services, while the rest, which is 47.2%, is another variable that is not covered in the model.

Keywords: Control activities, non-verbal information activities, quality of service, responsibility activities

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INTRODUCTION

Competition among mobile telecommunications operators in Indonesia has been increasing. This rivalry is compounded by an indication that the cellular telecommunications services market is increasing rapidly to the point of saturation. Saturation of the market is related to indication that market growth has shrunk. Competition requires operators to increase their service quality. Quality of service is important because this factor is the only choice factor among customers. Quality of service is a very important variable in corporate competition. It is believed that product quality strongly influences a company's service quality. Interactivity is one of the factors affecting service quality. It has been stated that some telecommunications service providers do not have good interactivity with their customers. Customers place such operators in the 'not good' category.

This article aimed to examine the correlation between interactivity, telecommunications service providers and their customers. Customers of mobile telecommunications service providers in the provinces of Jakarta and West Java were invited to be respondents in this research. The study employed the descriptive and verificative quantitative method and used three variables as the independent variables and one as the dependent variable. The independent variables were interactivity control (X1), interactivity responsibility (X2), and non-verbal information interactivity (X3), while the dependent variable was quality of service (Y). The non-probability purposive sampling technique was used. A Likert-scale measurement was used.

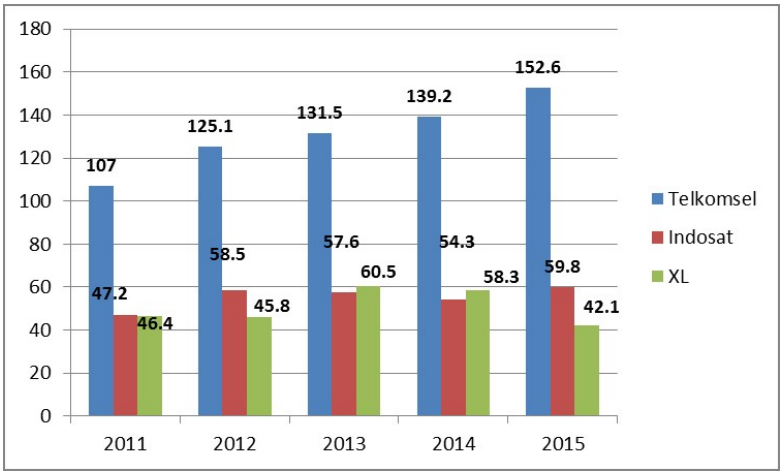

Figure 1. The number of subscribers of mobile telecommunications operators. Taken from the *Indosat Annual Report* by Indosat, 2013, 2014 and 2015 (https://indosatooredoo.com/en/investor-relation/informasi-keuangan/laporan-tahunan); *PT Telekomunikasi Selular Annual Report* by Telkomsel, 2013, 2014, 2015 (http://www.telkomsel.com); *Annual Report* by XL Axiata, 2013, 2014, 2015 (https://www.xl.co.id/id/about-us/documents/annual-report). In the public domain

As Figure 1 shows, the number of customers of the cellular telecommunication industry in Indonesia has grown since 2011. However, the growth has been decreasing in percentage year by year. The customer growth conditions are not the same for every operator. The growth of Telkomsel customers increased steadily over the past five years. However, the growth of customers of the other two operators fluctuated. The saturation in the telecommunications services industry in the last two years could be seen from the growth percentage, that was only about 1%. This growth has an implication for the way mobile telecommunications operators compete with each other.

Service quality of the operators is the key factor for success in the competition since the types of product launched by the operators are relatively similar. Yoo and Donthu (2001) stated that interactivity is one dimension by which the quality of a company's services can be measured. Interactivity can determine the quality of a company's services. The most important phase for determining quality is when there is interactivity between customers and a company (Al-Farsi & Basahel, 2014). The company must pay attention to interactivity factors, design and reliability as quality of services is supported by these factors (Al-Farsi & Basahel, 2014; Yoo & Donthu, 2001). Quality of services is necessary for a company as these factors contribute fairly to loyalty (Amin, Ahmad, & Hui, 2012). This research aimed to address customer perception about the interactivity provided by mobile telecommunications operators in Jakarta and West Java and the impact of the interactivity factor on the operators' service quality.

LITERATURE REVIEW

Interactivity

With regard to mobile telecommunications, Lee (2012) and Lee, Moon, Kim and Yi (2015) defined interactivity as a state that users experience when they are interacting by using telecommunications services. The level of interactivity in mobile telecommunications services depends on the perception of users and also the awareness of potential users of the adequacy of the interaction provided (Wu, 2006). Interactivity refers to how a website responds to a consumer from an online environment (Zeithaml, 2002). The premium rate culture of the service market is characterised by the presence or absence of mobile interactivity services. Interactivity services are used as a reference that the product is a premium-rated product (Goggin, 2007).

Interactivity perception consists of three dimensions i.e. perception control, perception of response and perception of personalisation (Wu, 2006). Interactivity can be measured using three dimensions: communication, control and response (Song, 2008). Mobile services can be classified according to two kinds of interactivity, personal interactivity (interactivity between humans) and machine interactivity (interactivity between persons and machines). There is a clear distinction in how the performance of the two interactivity

types are measured (Nysveen, 2005). Interactivity is a dimension that can be used in measuring the quality of service companies (Yoo & Donthu, 2001). Interactivity using the Internet allows for responses that can enhance more personalised services (Bitner, 2000). In cellular services, a very different matter is that interactivity occurs in the advertisements of the cellular telecommunication services. In the cellular service, there are chosen response services. The difference between fixed-phone and mobile-phone services is the presence of mobile advertisement services in cellular services with interactivity between consumers and providers (Chaudhuri, 2001). The interactivity variable can be described using several dimensions such as interactivity control, interactivity responsibility and non-verbal information interactivity. The dimensions of the sub-construct can be described as follows:

1. Interactivity control is a sub-construct that describes the control level of service, the originality of obtaining information and the suitability of the services provided by the operator.
2. Interactivity responsibility is a sub-construct that describes the speed of the operator in responding and providing information to customers.
3. Non-verbal information interactivity is a sub-construct that describes icon availability and a numeric code that describes the type of service from the operators.

Quality of Service

Quality of service is defined as customers' experience of the difference between the services they have received and the services they expected. The constructs that measure the gap between customer expectations and customer perception of service are referred to as quality of service (Gronroos, 2000). Cellular telecommunications customers will choose a provider based on the service quality of the provider's network, and this includes the characteristics of the network, the coverage area and the service tariff (Karacuka, Catik, & Haucap, 2013). The definition of quality of service is an assessment or attitude related to the overall excellence of the service. Quality of service can be defined as the performance of the service, and this is the difference between expectations and perception of consumers (Parasuraman, 1988).

Interactivity between customers and the company allows customers to obtain responses from the company in more personalised ways that can describe the quality of service (Bitner, 2000). The quality of service is measured by the efficiency of the service quality, quality flexibility, service quality fulfilment and quality of service contacts. The superiority of service quality is key in achieving customer loyalty, which is treated as the company's primary goal by utilising customer retention (Ehigie, 2006).

A contact, especially time contact, between employees and customers, has a moderating effect on the relationship between employee loyalty and customer

perception of service quality (Silvestro, 2000). Satisfaction has a mediating effect on service quality dimensions (tangibles, reliability, responsiveness, empathy and assurance) and customer loyalty (Butcher, 2001; Caruana, 2002; Lam, 2006). Service quality dimensions can be classified into two main groups: yield group and process group. The yield group is a factor of reliability, while the process group consists of tangibility, responsiveness, assurance and empathy (Mosahab, Mahamad, & Ramayah, 2010). The relationship between service quality, customer satisfaction and customer loyalty can help companies determine target customers by using limited marketing resources (Kheng, Mahamad, Ramayah, & Mosahab, 2010). The dimensions of quality of service include (i) efficiency of service quality, which is a sub-construct describing the quality level of quality efficiency provided by operators; (ii) quality flexibility, which is a sub-construct describing the quality of flexibility for customers provided by operators with regard to the level of confidentiality of customer data; (iii) service quality fulfilment, which is a sub-construct describing the service quality provided by operators in fulfilling customers' needs; and (iv) service contacts quality, which is a sub-construct describing the service quality related to the hospitality and treatment by officers in handling customer problems.

Framework

A description of the relationship between interactivity and the service quality was used as a reference in determining the author's framework. The framework was established by connecting the variable of interactivity with the service quality variable. The interactivity variable was measured using such dimensions such as activity control, activity responsibility and non-verbal interactivity information. Quality of service was measured using the dimensions of service quality efficiency, flexibility quality, fulfilment requirement quality and service contacts quality. Based on these descriptions, the framework of research was built as in Figure 2.

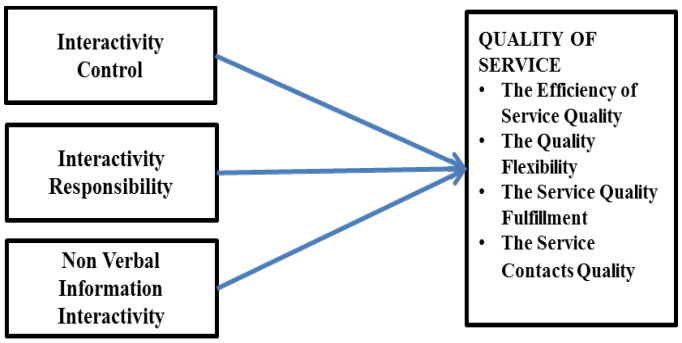

Figure 2. Framework. From "Antecedents and Consequences of Mobile Phone Usability: Linking Simplicity and Interactivity to Satisfaction, Trust, and Brand Loyalty" by Lee, Moon, Kim and Yi (2015), *Information and Management*, 52, 295–304. Copyright 2015 by the American Psychological Association.

MATERIALS AND METHODS

This study applied the quantitative method, where the random sampling technique was used. The multi-linear regression using SPSS was employed as an analysis technique. Descriptive and verificative analysis methods were also used in this research. The samples were taken from the subscribers of operators in DKI Jakarta and West Java Provinces, representing the whole population. The sample size (number of respondents) was determined using the Slovin Formula; the respondents were obtained from a population of 17.3 million customers; the error rate of 5% was 400 respondents. The researcher used a questionnaire that consisted of 11 questions describing the dimensions of interactivity control, interactivity responsibility, non-verbal information interactivity and quality of service. The multiple linear regression analysis was used for measuring the strength of the relationship between two variables and measuring the effect of variables that involved more than one independent variable (Sugiyono, 2012).

RESULTS AND DISCUSSIONS

Profile of the Respondents

Description of respondents by age. Most of the respondents, 71% or 285 respondents, were between 20 and 35 years old, 8% or 32 respondents were below 20 years old and the remaining 21% or 83 respondents were above 35 years old. Hence, it could be concluded that most of the customers were above 35 years old.

Description of respondents based on occupation. The majority of the respondents i.e. 63% or 252 respondents were private-sector employees, 11% or 42 respondents were civil servants, 11% or 43 respondents were employees of state-owned companies and the rest, about 16% or 63 respondents, were students/learners. Most of the respondents were from the private sector.

Description of respondents based on average customer income. Most of the respondents, 42% or 167 respondents, had an income of more than IDR3.5 million, while 31% or 125 respondents earned between IDR1.5 and IDR2.5 million, 17% or 69 respondents earned between IDR2.5 and IDR3.5 million and the remaining 10% or 39 respondents earned less than IDR1.5 million. It could be concluded that the majority of the respondents were from the average-income group.

Respondents' Responses

The respondents' responses could be grouped by independent variable and dependent variable.

Responses grouped by independent variables. The interactivity control variable (X1) showed a percentage of 60% i.e. it was neutral, while the interactivity responsibility variable (X2) showed a percentage of 70%, falling into the category of good and the non-verbal information interactivity variable (X3) showed a percentage of 64%, also falling into the neutral category. It can be concluded that almost all the

independent variables expressed by the respondents were in the neutral category, except for the interactivity responsibility variable, which was in the good category. The lowest response from the respondents was for the interactivity control variable. Thees responses concerning the independent variables indicated that the interactivity control needed improvement.

Responses grouped by dependent variables. The quality of the service variable had four items. The item, quality flexibility, obtained the highest response from the respondents at a percentage of 73%, categorizing it as good, while the efficiency of service quality and the service contacts quality obtained the lowest responses (60%) from the respondents, categorised as neutral. Overall, quality of service received 66% responses, and this was categorised as neutral. The responses concerning the dependent variables indicated that the service contacts quality was a variable that needed to be improved.

Test Result

Classical assumption test. The Classical Assumption Test was used to test whether the data fulfilled the criteria of a good regression model; the multicolinearity test and normality test were used to implement the Classical Assumption Test. The tests revealed that there was no multicollinearity among the variables and the variables could be used as a tool to investigate and analyse the problem.

Table 1
Multicollinearity test

	Model	Unstandardised Coeff		Stand Coeff	t	Sig	Collinearity Statistics	
		B	Std Error	Beta			Tolerance	VIF
1	(Constant)	1.045	0.111					
	Control	0.214	0.042	0.267	5.135	0.000	0.443	2.259
	Responsibility	0.384	0.04	0.487	9.456	0.000	0.459	2.180
	Non-Verbal Info	0.03	0.03	0.041	1.009	0.000	0.727	1.376

a. Dependent Variable: Quality

Results of multiple linear regression analysis. Based on the results of the calculations recorded in Table 1, it can be concluded that the form of multiple linear regression equations obtained was as follows:

$$Y = 1.045 + 0.214X1 + 0.384X2 + 0.030X3$$

The regression coefficient X1 was 0.214, the regression coefficient X2 was 0.384 and the regression coefficient X3 was 0.030; this means that for every increment, each dimension of interactivity control (X1), interactivity responsibility (X2) and non-verbal information interactivity (X3) will

increase the quality of service (Y) equal to the value of each regression coefficient. From the above equation, we can understand that the factor with the most influence from the interacctivity variable is interactivity responsibility and the factor with the least influence is non-verbal information interactivity.

Coefficient of determination. The calculation results performed using SPSS for the coefficient of determination are as shown in Table 2.

Table 2
Determination test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.726[a]	0.528	0.524	0.602	1.807

a. Predictors: (Constant), Nonverbal Info, Responsibility, Control
b. Dependent Variable: Quality

The R square is 52.8%, as given in Table 2, meaning that the independent variable (Xs) used in the model was able to explain the dependent variable, quality of service, (Y) which was 52.8%, while the remaining 47.2 % may be explained by the other variables not included in the research model.

Correlation between descriptive and verificative analysis results. The verificative analysis revealed that the variable with the most influence was interactivity responsibility, with a coefficient of 0.384, while the descriptive analysis revealed that the response percentage was 70%, the highest percentage of response. On the other hand, the interactivity control was the second most influential variable for quality of service, while the descriptive analysis showed that this variable received a response percentage of 60%, the lowest response by the respondents. This meant that the variable, interactivity control, should be improved in order to increase the quality of service.

CONCLUSION

The variable of interactivity responsibility (X2) fulfilled the respondents' desire at the response percentage of 70%, which was categorised as good. However, the variables of interactivity control (X1) and non-verbal information interactivity (X3) did not meet the wishes of the respondents, showing a percentage of 60% and 64%, respectively. This suggested that the operators have to take the necessary action to increase interactivity control and non-verbal information interactivity because the respondents perceived these two factors as being unfavourable.

The equations that correlate the dependent and independent variables illustrate that the most influential variable

was interactivity responsibility and the least influential variable was non-verbal information interactivity. This highlighted that the operators have to increase non-verbal information interactivity to improve quality of service. This is considered very important since quality of service will influence customer loyalty.

The coefficient of determination of 0.52.8 or 52.8 % illustrated that the interactivity variable gave an effect of 52.8% to the independent variable required by the model, while the remaining 47.2% was due to influence by other variables not in the model. It is clear that to increase the coefficient of determination in order to refine the accuracy of the results, more factors have to be added in the interactivity variable.

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