SERVICE QUALITY AND CUSTOMER SATISFACTION IN THE CELLULAR TELECOMMUNICATION SERVICE PROVIDER IN MALAYSIA

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ABSTRACT

Using the SERVQUAL model, this study attempts to examine the impact of service quality dimensions on customer satisfaction. A total of 225 current users of a GSM provider participated in this study. Gap Analysis was used to determine the perceived and expected satisfaction level on each of the service quality dimensions and regression analysis was conducted to test the relationship between the SERVQUAL dimensions and customer satisfaction. Results indicated that all 5 service quality dimensions positively influenced customer satisfaction in terms of loyalty and attitudes. In addition, t-test results showed that there was a significant gap between the perceived satisfaction and expectation (P-E) on all of the service quality dimensions.

Keywords: Service quality, customer satisfaction, perception and expectation, cellular telecommunication, gap analysis.

INTRODUCTION:

Cellular telecommunication service providers (CTSP) are a paramount importance to both developed and developing nations. In an emerging economy like Malaysia, CTSP are envisaged to greatly contribute to the national goal of achieving a fully developed nation status by 2020. Delivering superior service quality appears to be a prerequisite for success, if not survival of such business (Parasuraman, Zeithaml& Berry, 1988). Quality is an indistinct construct often mistaken for vague adjectives like goodness, luxury, shininess or weight (Crosby, 1979). Few academic researchers have attempted to define and model quality because of the difficulties involved in developing and measuring the construct. Along this line, Parasuraman, Zeithaml and Berry, (1988) developed a model in which they contended that customers compare the service they expected with perception of the service they received in the evaluation of service quality. The model is known as SERVQUAL.

In the cellular phone sector, the market size has been registering rapid growth. With 12 cellular service providers for a population of 27 million, Malaysia's cellular industry is among the world's most competitive. By the year 2020, teledensity in Malaysia is forecasted to increase to 85 phones per 100 residents which can be translated to 13.5 million subscribers. In the year 2009 alone there were 2.31 million subscribers with 0.974 million in central Malaysia itself (SKMM, 2010)

Table 1.1: Cellular Telecommunication Market Composition

Operator	License Year of Issue	Percent Estimated Number of Subscribers ('000)	Percentage of Market Share (2010)
Telekom Malaysia	1985	-	-
Maxis	1993	9,700	41.6
DiGi	1994	6,400	27.9
Celcom	1989	7,200	31.9
TimedotCom	1995	-	-

(**Source:** "Industry Performance Report 2010" by SKMM, 2010)

With 12 service providers, the competition is intense and requires that marketers to have the ability to provide superior customer service which serve as a differential advantage over competitors. The importance of customers has been highlighted by many researchers and academicians. According to Zairi (2000:p.331), "Customers are the purpose of what we do and rather than them depending on us, we very much depend on them. The customer is not the source of a problem, we shouldn't perhaps make a wish that customers 'should go away' because our future and our security will be put in jeopardy". That is the main reason why organizations today are focusing on customer satisfaction, loyalty and retention. The perception of quality is multilateral: quality means different things to different people (Gerson, 1993) andfrom the perspective of quality's dimensions (input, process and output) and from the perspective ofthe stakeholders, there are many views of quality (Reichheld, 1996).This study intend to explore an insight of CTSP practices in Malaysia and to identify the customer's satisfaction towards the service provided. The SERVQUAL model along with the GAP Model developed by Parasuraman et al., (1988) shall be adopted to determine whether the model may be applicable for the cellular service providers in Malaysia.

LITERATURE REVIEW:

SERVQUAL has been widely used in telecommunication industries in different cultural context with high reliability and validity (Hoffman & Bateson, 2001; Tyran& Ross, 2006; Stafford et al., 1998; Sureschander et al., 2002). In a study of mobile telecommunication in South Africa, Van der Wal et al., (2002) used SERVQUAL with some modifications. The modified instrument resulted scale reliability of 0.95. In their study of service quality in telecommunication services, Ward and Mullee (1997) used reliability, availability, security, assurance, simplicity, and flexibility as criteria of service quality. They argued that, from customers' perspective, it is not appropriate to separate network quality from the other dimensions of quality. Quality of services from mobile phone users' perspective need to be studied with a view to facilitate its measurement. Numerous studies have investigated the perspective of mobile phone users with regard to the quality aspects. These have been discussed in succeeding paragraphs. These studies provide insight to the quality dimensions that mobile phone operators need to consider remaining competitive in changing environment.

Rusdi (2000), studied the productivity of Telstra, the Australian telecommunicationcompany from the period of 1980-1997. Estimating the total factor productivity (TFP)using the Divisia aggregation method, he found that

Telstra's TFP was significantlyhigher during the post-reform period compared to the pre-reform period. In the case ofthe output, his index included the number of telephone calls, total number of telephonerented, new services connected, total number of telex services in operation, total number of telex calls, international calls and other services. Meanwhile, the input index was comprised of labour, capital and other costs. Lam and Lam (2005), in their paper on the total factor productivity of Hong Kong telephone company (HKTC), found the growth to be 2.31-3.56% per year between 1964 and 1998. Using two methods, namely the growth accounting approach and the Divisia aggregation method, they (Lam and Lam, 2005) found the TFP growth to vary substantially under different regulatory regime, with the importance of scale effects relative to the technological effects diminishing over time. The total revenue (in real terms) was used as output while inputs covered the use of capital and labour (total number of employees). The cost of capital used was the rental price of capital while the cost of labour was represented by the average wage.

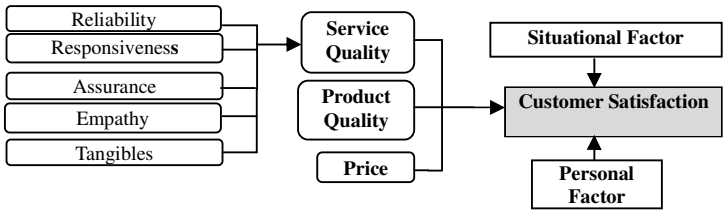
Yoon (1999), examined the efficiency implications of Korea's liberalization policy on the Korean's telecommunications sector. Employing the Divisia aggregation method, he found that the total factor productivity growth of Korea Telecom (KT) between 1970 – 1995 to be 6.9% which was higher than the Korean manufacturing industry's growth rate for the period. Nonetheless, the productivity rate for KT began falling from the 1980s onwards and into the 1990s as its market share shrank from then onwards.

SERVICE QUALITY AND CUSTOMER SATISFACTION:

Since customer satisfaction has been considered to be based on the customer's experience on a particular service encounter, (Cronin & Taylor, 1992) it is in line with the fact that service quality is a determinant of customer satisfaction, because service quality comes from outcome of the services from service providers in organizations. Another author stated in his theory that "definitions of consumer satisfaction relate to a specific transaction (the difference between predicted service and perceived service) in contrast with 'attitudes', which are more enduring and less situational-oriented," (Lewis, 1993: 4-12) This is in line with the idea of Zeithaml et al. (2006:106-107). Regarding the relationship between customer satisfaction and service quality, Oliver (1993) first suggested that service quality would be antecedent to customer satisfaction regardless of whether these constructs were cumulative or transaction-specific.

Some researchers have found empirical supports for the view of the point mentioned above (Anderson & Sullivan, 1993; Fornell et al., 1996; Spreng&Macky, 1996); where customer satisfaction came as a result of service quality. In relating customer satisfaction and service quality, researchers have been more precise about the meaning and measurements of satisfaction and service quality. Satisfaction and service quality have certain things in common, but satisfaction generally is a broader concept, whereas service quality focuses specifically on dimensions of service (Wilson et al., 2008). Although it is stated that other factors such as price and product quality can affect customer satisfaction, perceived service quality is a component of customer satisfaction (Zeithaml et al. 2006: 106-107). This theory complies with the idea of Wilson et al. (2008) and has been confirmed by the definition of customer satisfaction presented by other researchers. Figure 2.1 below shows the relationship between customer satisfaction and service quality. The author presented a situation that service quality is a focused evaluation that reflects the customer's perception of reliability, assurance, responsiveness, empathy and tangibility while satisfaction is more inclusive and it is influenced by perceptions of service quality, product quality and price, also situational factors and personal factors. (Wilson, 2008: 78).

Figure 2.1: Customer perceptions of quality and customer satisfaction (Wilson et al., 2008, p. 79)



The SERVQUAL model (Parasuraman, Ziethaml& Berry, 1988) suggests that the differences between customers' expectations about the performance of a general class of service providers and their assessment of the actual performance of a specific firm in that class results in perceptions of quality. So that the first step in satisfying customers is to determine the level of customer service through service quality assessment. But is there a consensus among researchers, as they argue over whether high degree of service quality always brings about satisfaction. The work of Bitner et al. (1990) proposed an alternative method and defined service quality as the customer's overall

impression of the relative inferiority/superiority of a firm and its service offerings. Antreas (1997) found that service provider perceptions about customer satisfaction are a function of perceived service quality.

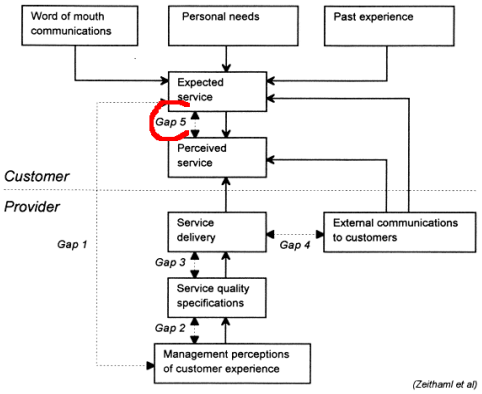
SERVICE QUALITY GAP:

In previous service research, meeting and exceeding expectations of clients and customers is a perspective that has gained most attraction. This concept is all inclusive and cuts across service domains but expectations change and experiences with alternate service providers could shape the customer's expectations. The important research gap here is attaining customers' expectation towards a particular service (Hernon&Nitecki, 2001).
The SERVQUAL model of service quality identifies five gaps that cause unsuccessful delivery. These five quality gaps are the result of inconsistencies in the quality management process (Zeithamlet al., 1990):

Gap 1	The management perception gap. Manager's perceptions of customer's expectations may be different from actual customer's needs and desires, suggesting that management perceives the quality expectations inaccurately.
Gap 2	The quality specification gap. Divergences in service quality specifications might signify that, even if customer needs are known, they may not be translated into appropriate service specifications.
Gap 3	The service delivery gap. This is referred to as the service performance gap and denotes that quality specifications are not met by the performance in the service production and delivery process.
Gap 4	The market communication gap. This gap indicates that promises given by market communication activities are not consistent with the service delivered.
Gap 5	The perceived service quality gap. This gap results when the perceived service falls short of the expectations of customers (Zeithamlet al. 1990). Brogowicz*et al.* (1990) contend that this gap is the most important, because it compares actual to perceived service delivery. Zeithaml and Bitner (2003) stated that in order to manage service quality, it was important to manage the gaps between expectations and perceptions on the part of the management, employers and customers.

Service quality scores (Q) can be measured by subtracting the customer's perception score (P) from the customer's expectations score (E). This can be denoted by the equation: Q= P-E (Zeithamletal., 1990). Figure 2.2 shows the gap model of service quality.

Figure 2.2: Gap Model of Service Quality



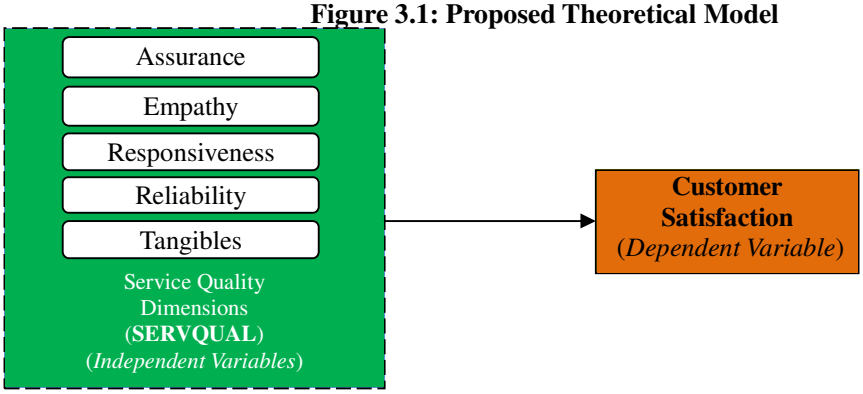
RESEARCH METHODOLOGY:

FRAMEWORK AND HYPOTHESES:

For the measurement of customer satisfaction on service quality, a model named SERVQUAL was developed by Parasuraman (1988). The model consists of ten components. SERVQUAL provides a technology for measuring and managing service quality. In their 1988 work these ten dimensions were reduced to five dimensions as follows:

	Dimensions	Items in Scale
1	Reliability	4
2	Assurance	5
3	Tangibles	4
4	Empathy	5
5	Responsiveness	4

Figure 3.1: Proposed Theoretical Model



HYPOTHESES OF THE STUDY:

The hypotheses of the study are developed as below:
H_1: There is a significant relationship between assurance and customer satisfaction.
H_2: There is a significant relationship between empathy and customer satisfaction.
H_3: There is a significant relationship between tangibles and customer satisfaction.
H_4: There is a significant relationship between reliability and customer satisfaction.
H_5: There is a significant relationship between responsiveness and customer satisfaction.

RESEARCH INSTRUMENTS AND DATA COLLECTION:

The instrument used in this study is based on Parasuraman et al., (1990). The structured questionnaires were based on the five dimensions of service quality (tangibility, assurance, reliability, responsiveness and empathy) and used the five point Likert scale from 1 strongly disagree to 5 strongly agree. Random sampling approach was used to identify the respondents for the study.

RELIABILITY TEST:

According to George andMallery (2003), reliability is the degree to which measure are free from error and therefore yield consistent results. The reliability of a measure indicates the stability and consistency with which the instrument measures the concept and helps to assess the 'goodness' of a measure (Cavana, Delahaye&Sekaran, 2001). According to Sekaran (2003), the closer the reliability coefficient gets to 1.0, the better it is, and those values over .80 are considered as good. Those values in the .70 is considered as acceptable and those reliability value less than .60 is considered to be poor (Sekaran, 2003). All the constructs were tested for the consistency reliability of the items within the constructs by using Cronbach's alpha reliability analysis. Cronbach's Alpha values in respect of each variable are given in table 4.1 below. Respondents were also assured about the confidentiality as information shared in this regard would be used for academic and research purposes only. The Cronbach's alpha for individual variables of tangibles (0.839); reliability (0.836); responsiveness (0.832); empathy (0.929) and assurance (0.855) indicated that the measure is compositely reliable and internally consistent as recommended by Nunnally (1978). The reliability of the instrument of this study is 0.896, indicating a high reliability factor. In conclusion, the results showed that the scores of the Cronbach's alpha for all the constructs exceeded the threshold of 0.70 indicating that the measurement scales of the constructs were stable and consistent.

Table 4.1: Cronbach's Alpha Reliability Test

Construct	Alpha Coefficient		Number of Items
	Expectations	Perceptions	
Customer satisfaction	0.875	0.824	10
Empathy	0.948	0.929	9
Tangibles	0.842	0.839	9
Reliability	0.753	0.836	10
Responsiveness	0.737	0.832	8
Assurance	0.822	0.855	9

PILOT TESTING OF INSTRUMENT:

To validate the instrument, a convenience sample of 60 cellular phone users was selected. The Cronbach's alphas for variables used in the instrument ranged from 0.819 to 0.873. The results reflected adequacy of the questionnaire as recommended by Nunnally (1978).

DESCRIPTIVE STATISTICS:

PEARSON CORRELATION COEFFICIENT:

Pearson's correlation coefficient (r) is a measure of the strength of the association between the two variables. According to Sekaran (2003), in research studies that includes several variables, beyond knowing the means and standard deviations of the dependent and independent variables, the researcher would often like to know how one variable is related to another. While correlation could range between -1.0 and +1.0, the researcher need to know if any correlation found between two variables is significant or not (i.e.; if it has occurred solely by chance or if there is a high probability of its actual existence). As for the information, a significance of p=0.05 is the generally accepted conventional level in social sciences research. This indicates that 95 times out of 100, the researcher can be sure that there is a true or significant correlation between the two variables, and there is only a 5% chance that the relationship does not truly exist. The correlation matrix between dependent variable and independent variables are exhibited in Table 4.2 below. The findings from this analysis are then compared against the hypotheses developed for this study. Table 4.2 shows the mean value depicting the overall customers' satisfaction. As far as this description analysis is concerned, customers' satisfaction on the cellular telecommunication service provided is above satisfactory level (with a mean value of 3.26 on a 5 point Likert scale). As far as the mean values are concerned customers are satisfied on tangibles, reliability, responsiveness, empathy and assurance.

Table 4.2: Summary of Means, Standard Deviations and Correlation Matrix

Variables	Mean	SD	Customer Satisfaction	X1	X2	X3	X4	X5
Customer Satisfaction	4.13	1.03						
Empathy	3.47	0.732	0.288**					
Tangibles	3.35	0.724	0.166**	0.512**				
Reliability	3.41	0.882	0.195**	0.554**	0.482**			
Responsiveness	3.42	0.734	0.211**	0.571**	0.383**	0.497**		
Assurance	3.31	0.727	0.232**	0.632**	0.615**	0.564**	0.606**	

Note: Correlation is significant at the **0.01 level (2-tailed)
X1=Empathy, X2=Tangibles, X3=Reliability, X4=Responsiveness, X5=Assurance

As shown in table 4.2, the correlation matrix indicates that service quality was positively and moderately correlated with customer satisfaction. The highest coefficient of correlation in this study between service quality variables and customer satisfaction however is 0.212, which is below the cutoff of 0.90 for the collinearity problem. Thus, multicollinearity problem does not occur in this study (Hair et al., 1998). These correlations are also further evidence of validity and reliability of measurement scales used in this research. (Barclays et al., 1995; Hair et al., 2003).There was a significant positive relationship between assurance and customer satisfaction (r = .232, p<0.01). The positively moderate correlation were responsiveness and customer satisfaction (r = .211, p<0.01), reliability and customer satisfaction (r = .195, p<0.01) and the strongest correlation were between empathy and customer satisfaction (r = .288,p<0.01). The weakest correlation was for tangibles and customer satisfaction (r = .166, p<0.01). In other words, the results indicate that the most important service quality dimension on customer satisfaction was empathy, which goes to prove that empathy was perceived as a dominant service quality; improvements in customer satisfaction levels were significant. The findings displayed that the respondents who perceived a greater awareness of service quality exhibiting the more positive reactions in favour of customer satisfaction. Thus H_1, H_2, H_3, H_4 and H_5 were supported.

GAP ANALYSIS: COMPARISON OF EXPECTATIONS AND PERCEPTIONS ON SERVICE QUALITY:

Based on t-test results, the comparison between expectations and perceptions rated by participants on all five service quality dimensions (tangibility, responsiveness, assurance, empathy and reliability) delivered by this CTSP indicated a significant gap (p<0.01). As shown in table 4.3 below, the largest mean difference between

expectations and perceptions of service were noted from the responsiveness perspective (mean difference = -0.31) followed by assurance perspective and the reliability perspective (mean difference = -0.28 and -0.27respectively). On the other hand, the smallest mean difference between expectations and perceptions of the services were identified from the tangibility perspective (mean difference = -0.16).

Table 4.3: Gap Analysis Results

Service Quality Dimensions	Expectations		Perceptions		Mean Differences	Gap (P-E)		***Sig.
	Mean	S	Mean	S		S	T	
Empathy	4.76	0.56	4.51	0.66	-0.21	0.66	4.51	0.000
Tangibles	4.28	0.72	4.32	0.61	-0.16	0.74	2.84	0.000
Reliability	4.59	0.63	4.67	0.67	-0.27	0.68	5.85	0.000
Responsiveness	4.62	0.58	4.77	0.61	-0.31	0.65	6.87	0.000
Assurance	4.57	0.72	4.42	0.62	-0.28	0.73	5.10	0.000

CONCLUSION:

An evaluation of relative importance of CTSP service quality dimensions is essential to identify the effects of these dimensions on customer perception of cellular phone service quality. This would serve to identify the relevant parties concerned to identify and undertake necessary initiatives to improve those aspects that customers value the most. The results analysis in Table 4.3 indicate that empathy, responsiveness, assurance, tangibles and reliability are dimensions that have a positive and significant impact of customers' perceived service quality on CTSP in Malaysia. The results of this study concur with the outcome of other studies on traditional service quality setting (Bitner, 1990; Parasuraman et al., 1988).

The importance of responsiveness in influencing customer satisfaction suggests that strong relationship between the management and customers' should be emphasized for long term sustainability. The management's strategy should be directed to focus on improving customer responsiveness to strengthen loyalty. As the present research examined service quality factors in only two cellular telecommunication service providers in Penang, additional studies need to be undertaken to examine customer satisfaction pattern in other regions and with larger samples. The results of this study concur with the findings of earlier researches in mobile phone industry that the dimensions discussed in the study have positive and significant effect on mobile phone users' perception of service quality (Joachim &Omotayo, 2008; Lai et al., 2007; Negi, 2009; Leisen& Vance, 2001; Wang & Lo, 2002).

LIMITATION OF THE STUDY:

Although the research findings provide some new insights to researchers, these findings should be viewed in light of some limitations. 225 samples from Penang may not be large enough to represent accurately the whole populations' attitude towards customer satisfaction in the cellular telecommunication service provided in Malaysia.

IMPLICATIONS FOR FUTURE RESEARCH:

We believe that our findings could greatly benefit companies in the cellular telecommunications industry. Acknowledgement of the importance and positive effects of customer satisfaction have critical importance in the service sector which is inextricably linked to a client, because indeed customers are taking an important part in the service and personal experiences are very crucial. Thus, both parties; customers and service providers influence the final outcome of this relationship. The area of future research should primarily address the limitation of this study. An important limitation of this study was the scope of the sample, which was concentrated only in one location. Therefore there is a need to replicate this study with samples from other states in Malaysia to provide cross-cultural perspective. With the advancement of technology, CTSP are competing intensely to retain and satisfy their customers for long term sustainability.

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