

Out-patient Service Quality Perceptions in Private Thai Hospitals

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Abstract

The purpose of the study was to determine the dimensions used in judging the hospital services quality; to develop a tool for measuring perceived service quality for hospitals; to test the validity and reliability of the new scale; and finally to use the results of the data collected to suggest improving service quality. A cross-sectional field study was conducted among 400 hospital out-patients in Thailand. The researchers administered the SERVQUAL instrument in order to assess the applicability of these service quality attributes to the out-patient hospital setting in Thailand. The data collected were used to assess the psychometric properties of the SERVQUAL instrument and to analyze whether and to what extent the SERVQUAL dimensions adequately predicted overall service quality among Thai hospital out-patient respondents. The psychometric properties of the instrument were quite acceptable and the resulting 5-factor structure was consistent to and confirms earlier measurement theory. The measurement model as estimated by the use of structural equation modeling further showed that the hypothesized model fit the empirical data quite well. The results indicate that SERVQUAL's five latent dimensions had a significant influence on overall service quality. Responsiveness had most influence; followed by empathy, tangibles, assurance; and finally reliability. The results of this study further demonstrate that service quality can be assessed in diverse service settings such as hospital out-patient departments. SERVQUAL is robust enough to capture the critical elements used to assess overall service quality. The study was limited in its external validity and prediction was constrained due to the nature of the data collected, i.e. cross-sectional design. This study also chose to focus on one outcome variable, i.e. overall service quality. Other critical variables might be reasonably assessed, e.g., customer satisfaction, loyalty intentions, firm performance

Keywords: Service Quality, Disconfirmation, SERVQUAL, Responsiveness, Thailand, Health services sector

1. Introduction

Currently, the role of service quality is widely recognized as being a critical determinant for the success and survival of an organization in competitive environment. One of the fastest growing in the service sector is the health care industry (Zaim, Bayyurt & Zaim, 2010). In this study, we are specially focusing on private hospital in Thailand as it is one of the parts of health care system. During the recent decade, the number of private hospital providing health care service in Thailand has been ever increasingly growing. Based on the 2010 statistics issued by the Ministry of Public Health of Thailand, 270 private hospitals are active in the Thai health sector. According to the social security office (SSO), in 2010, the total medical service utilization rates for private hospitals out-patients were 2.77 visits per person per year. Furthermore, quality of care perceptions vary based on type of provider and patient payment status. For example, patients under the social security scheme, who are paid for on a capitation basis, consistently gave lower ratings to certain aspects of outpatient care than other patients (Tangcharoensathienm Bennett, Khongswatt, Supacutikul & Mills, 1999). The success of private hospitals depends on patients' perceptions or judgment on the quality of products / services provides by service personnel in hospitals and service quality is the measure of how well the services delivered meet patients' expectations

Thus, a major objective of this study was to determine the dimensions used in judging the quality of private hospital services; to develop a tool for measuring perceived service quality for private hospitals; to test the validity and reliability of the new scale; and finally to use the data collected to suggest improving service quality for private hospitals.

2. Conceptual Frameworks and Relevant Literature

Service quality

Service quality is defined as the discrepancy between customer's perceptions of services offered by a particular firm and their expectations about firms' offering such services. Goetsch & Davis (2010) define quality as: a dynamic state associated with products, services, people, processes and environments that meets or exceeds expectations and helps produce a higher value. Hospital service quality is the discrepancy between patient's perceptions of services offered by a particular hospital and their expectations about hospitals offering such services (Aagja & Garg, 2010). The patients' expectations are derived from their perception of the ideal care standards of their previous experiences in the use of services (Kucukarslan & Nadkarni, 2008). A satisfied customer will more likely to continue to use the service, spread positive views that help healthcare providers get new patients without additional cost such as advertising (Zeithaml & Bitner, 2000), in the same way as unmet expectations relate to dissatisfaction (Dawn & Lee, 2004). Therefore, it is important for healthcare providers to continuously monitor and measure customer service expectations and perceptions (Butt & de Run, 2009). After delivering the services, service providers also must monitor how well the customers' expectations have been met (Zarei, Arab, Froushani, Rashidian, & Tabatabaei, 2012). Researchers have offered varying service quality conceptualizations. For example, in his earlier work, Grönroos (1984) identified two dimensions of service quality namely functional quality—how the service was performed and technical quality—the actual outcome of the service that can be objectively measured, i.e. the health test was administered accurately. Garvin (1988) used a much more aggressive and strategic approach by defining quality along 8 dimensions—performance, features, reliability, conformability, durability, serviceability, aesthetics, and perceived quality. Finally, Parasuraman, Zeithaml and Berry (1985) conceptualized service quality using a disconfirmation model that compares customer expectations and perceptions.

This seminal research on service quality initiated by Parasuraman, et al (1985) involved interviewing executives from retail banking, credit cards, securities brokerage, and product repair and maintenance sectors from which they developed the now popular “gap model”. They concluded that potentially five service quality gaps exist in organizations (Zeithaml, Bitner, Gremler, 2013). The first gap is called the “listening gap”, which is the difference between customer expectations of service and company understanding of those expectations. The second gap is called the “service design and standards gap” and represents the difference between a company's understanding of customer expectations and the development of customer-driven service designs and standards. The third gap is the “service service-performance gap” which occurs when there is a discrepancy between the development of customer-driven service standards and actual service performance. Service performance suffers when service delivery falls short of the set standards, often attributable to people, systems or technology. The fourth gap is the service delivery external communications gap based on the firm's capability to deliver what is promised and completely inform consumers. Finally, the fifth gap is the expected service-perceived service gap. It is the difference between the customers' expectation and perception in service quality (Akter, Upal & Hani, 2008).

Service quality dimensions

The original ten dimensions identified by Parasuraman and his colleagues and these dimensions comprise what is known as the SERVQUAL model. Further testing by Parasuraman, Zeithaml and Berry (1988) resulted a more parsimonious five dimensions of service quality namely Tangibles, Reliability, Responsiveness, Assurance and Empathy. The SERVQUAL: scale is one of the best and most widely used tools for evaluating customer expectations and their perceptions of the service quality. Thus, the outcome is where customer perceptions are compared with the measures of performance (Zarei et al., 2012; Pakdil & Aydin, 2007). These dimensions are described as follows:

- Tangibles – refers to the appearance of physical facilities, equipment, appearance of personnel and communication materials.
- Reliability – refers to the ability of the service provider to perform the promised service dependably and accurately.

- Responsiveness – refers to the willingness of employees to help customers and provide prompt service.
- Assurance – refers to the knowledge, courtesy and competence of employees and ability to inspire trust and confidence in the customer towards the service provider.
- Empathy refers to the caring, individualized attention provided to customers.

These dimensions are captured in the SERVQUAL instrument, a questionnaire with a set of 22 items spanning across the five major dimensions of service quality. It has two sets of similar statements of which, the first measures customer expectations (E) and second set is perception of the actual service delivered by the provider (P). In this instrument measures the quality as difference between perceptions and expectations (P minus E). It was originally created in 1985 and refined in 1991. Parasuraman, Berry, and Zeithaml (1991) contended that the gap between expectations and perceptions provides a way to analyze the level of service rendered, so that effective actions can be taken to enhance service quality (Ariffin & Aziz, 2008). According to Manjunatha and Shivalingaiah (2004), after series of successful tests in hotel, telephone, automobile and banking services, they recommended that SERVQUAL is a reliable instrument, one which could be applied to any service providers by adopting suitable terminology. Moreover, the SERVQUAL scale has been widely applied by researchers in hospitals to assess customer perceptions of service quality (Irfan & Ijaz, 2011, Lis, Rodeghier, & Gupta, 2011, Nekoei-Monghadam, and Amiresmaili, 2011, Zarei, et al, 2012). According to Zeithaml and Bitner (1996), the SERVQUAL model is applicable to the health care sector in the following characteristics: reliability – appointments kept on schedule, accurate diagnoses; responsiveness – accessible services, no waiting, willingness to listen; assurance – knowledge, skills, credentials, reputation; empathy – patient acknowledged as a person, awareness of previous problems, good listening, patience; and tangibles – waiting room, examination room, equipment, written materials (Herstein & Gamliel, 2006).

Service quality in hospitals sector

The main purpose of the SERVQUAL is to measure the result of patients' expectation and perception regarding on particular service sector (Haque, Sarwar, Yasmin, & Nuruzzaman, 2012). Many researchers have applied SERVQUAL to assess perceived service quality have been undertaken in the hospital sector in different countries (Al-Hawary, 2012; Zarei et al., 2012; Butt & Run, 2010; Suki, Lian, & Suki, 2011; Norazah, Jennifer, & Norbayah, 2011; Irfan & Ijaz, 2011; Ahmed & Samreen, 2011; Brahmbhatt, Baser, & Joshi, 2011; Haque et al., 2012). Al-Hawary (2012) studied to health care services quality of private hospitals in Jordan and Saudi Arabia found that tangibles and accessibility were better provided in Saudi Arabia hospitals. Ramez (2012) found that patients rated the reliability dimension most important, the assurance dimension least important. The study also reported a significant relationship between service quality and overall satisfaction with the service. Abu-Kharmeh (2012) found that among the service quality dimensions, responsiveness, assurance, tangibles, empathy, and reliability were ranked in order of importance respectively. In another study, tangibles were found to be perceived better in the hospitals in Jordan. Zarei et al. (2012) studied service quality in private hospitals of Iran, evaluating the service quality from the patients. They found that the highest expectations and perceptions were related to the tangibles dimension and the lowest expectation and perception related to the empathy dimension. Butt and Run (2010) found that the highest and lowest expectations and perceptions gap of service quality was reported in the tangibles dimension as it relates to the physical delivery of care at private hospitals in Malaysia.

Suki, et al. (2011) indicated that patients' expectations exceed perceptions of private health care setting in Malaysia, as they felt that a waiting time of more than an hour to receive the service was excessive and that the health care provider did not respond fast enough when there were problems. Norazah, et al. (2011) studied patients' perceptions and expectations in a private health care setting in the Klang Valley Region of Malaysia. The results revealed that the customers' perceptions did not exceed their expectations, as they were dissatisfied with the waiting time of more than an hour to receive the service and the healthcare provider did not respond fast enough when there was a problem. Irfan and Ijaz (2011) found that private hospitals in Pakistan were delivering better service quality as compared to public hospitals; and that doctors, nurses, and support staff provided care to the patients, which involved providing a clean and healthy environment, available medical tests and pharmacy facilities within the hospital, sterilized equipment, and efficiently attending to patient calls. Ahmed and Samreen (2011) studied the private hospital of Karachi in Pakistan and found that the factors reliability & responsiveness, feedback and guidance, and affordability greatly influence patients' satisfaction. They recommend to focus on the waiting time of the patients and make sure of the availability of the doctors at the appointed time.

Brahmbaht, Baser, & Joshi (2011) found that customers' perceptions did not exceed their expectations, as the patients were dissatisfied with the level of health care services rendered by 5 private hospitals from Ahmadabad and Gandhi agar cities of Gujarat state. Haque et al (2012) found in their study that customer satisfaction had direct and indirect relationships to personnel support, and to attention given to patients and hospital facilities at a private hospital in Malaysia. Zaim et al. (2010) studied the important criteria for measuring service quality for hospitals in Turkey. They confirmed that tangibility, reliability, courtesy and empathy are significant for customer satisfaction, while responsiveness and assurance were not.

3. Methodology

Method

A cross-sectional study was conducted between August and September 2011 in Bangkok, the capital of Thailand.

Survey instrument

The study questionnaire was composed of 2 parts; the first part assessed demographic characteristics of the out-patient, such as gender, age, and education. In the second part, the SERVQUAL questionnaire was used for assessing the patients' expectations and perception of service quality which included 21 items representing 5 dimensions: tangibles (5 items), reliability (5 items), responsiveness (3 items), assurance (4 items) and empathy (4 items). The SERVQUAL scale was translated into the Thai and back-translated into English from Parasuraman et al. (1991). A 7-point Likert-type scale was used, ranging from strongly disagree (1) to strongly agree (7) to access the level of expectations and perceptions with regard to out-patients service quality. The final questionnaire after scale psychometrics were performed resulted in a 11-item service quality assessment scale (also, for further details, see the discussion below under "Measurement Model").

Sample design and data collection

A self-administrated questionnaire survey was administered to collect empirical data from out-patients with private hospital out-patient departments located in Thailand. According to the statistics issued by the Ministry of Public Health of Thailand (2010); total number of out-patients was 37,463,060. Sample size was determined using following formula of Yamane.

$$n = N / Ne^2 + 1 ,$$

Here; N= 37,463,060, $e^2 = 0.05$

$$n = 339.97 \approx 400$$

The sample size of 400 was chosen because other scale developers in marketing have also drawn similar sized samples: Arasli et al. (2008); Rohini and Mahadevappa (2006). In order to collect quantitative data for the study, a total of 400 questionnaires were printed and distributed for the purpose of data analysis. A total of 5 private hospitals were selected as part of the sampling frame as they were deemed to be part of the medical hub of Asia. A convenience sampling method was followed and the patients were assured that their responses would be kept confidential. Further, ethical approval by the hospital administrative officer was obtained prior to collecting data.

4. Results

Out-Patient characteristics from the analyzed sample (N= 400), were as follows: 58.5% of the outpatients were female, and 57% had bachelor degree level of education. In terms of age groups, 34% were 51 years and above, followed by 41 to 50 years (21%), 31 to 40 years (24.5%), and finally below 31 years (20.5%). In terms of income, 51.8% of the outpatients reported average income of 30,000 baht per month or higher. This compares with Thai per capita GDP (monthly) income of 24,500 baht (Central Intelligence Agency, n.d.)

The analysis was composed of two steps. The first step was to confirm the factor structure of measurement items tapping service quality. The second step investigated the relationship between the endogenous latent variables (i.e., reliability, responsiveness, assurance, empathy, and tangibles) and the exogenous overall variable (i.e., service quality). The measurement and structural models were tested using the LISREL VIII structural equation analysis package (Jöreskog and Sörbom, 1993). The maximum likelihood method of estimation was used to analyze the data.

Measurement model

A confirmatory factor analysis (CFA) was conducted in order to establish confidence in the measurement of the indicators. Each dimension (i.e., reliability, responsiveness, assurance, empathy, and tangibles) was analyzed separately (please refer to Table 1)

Table 1: Results of confirmatory factor analysis (CFA)

Constructs and indicators	Factor loading	Standard errors	t-value	R-Square	Construct reliability	Average variance extracted (AVE)
[Reliability]						
<i>Gap_rel3</i> : performs the service right the first time	1.00		a	0.49	0.65	0.48
<i>Gap_rel5</i> : Hospital's service within agreed time	0.96	0.11	8.74	0.45		
[Responsiveness]						
<i>Gap_res1</i> : sincere and detailed information	1.00		a	0.40	0.75	0.51
<i>Gap_res2</i> : Willing to help	1.22	0.11	11.34	0.60		
<i>Gap_res3</i> : Fast and efficient service	1.08	0.10	10.60	0.47		
[Assurance]						
<i>Gap_as2</i> : Staffs have knowledge	1.00		a	0.42	0.53	0.36
<i>Gap_as4</i> : Polite and friendly staffs	0.93	0.09	10.48	0.36		
[Empathy]						
<i>Gap_em1</i> : Understand to specific needs	1.00		a	0.71	0.78	0.64
<i>Gap_em3</i> : Look for the best for patients' interests	0.91	0.08	11.90	0.59		
[Tangibles]						
<i>Gap_tan3</i> : Flexible working hours	1.00		a	0.45	0.57	0.40
<i>Gap_tan4</i> : visually appealing office décor	0.89	0.11	8.37	0.36		

Note: All t-statistics are significant at 0.01 level; ^a indicates the initial parameter was set to 1.0 for model estimation purposes (Normally, over-identifying first-order CFA modeling is conducted by fixing the loading of one indicator for each latent factor to equal 1)

Based on the results of the CFA analysis, the items having a coefficient alpha below 0.40 were deemed unacceptable and removed from further analysis (Nunnally, 1978, Wolfenbarger and Gilly, 2003). Initial confirmatory analysis indicated the possibility of improving goodness fit statistics for the measurement model. After consideration on the modification indices, three items were eliminated from the reliability construct, such as "The hospital complies with agreed promises" ($r=0.26$), "The hospital is interested in solving problems" ($r=0.33$) and "The hospital provides fast and flexible service" ($r=0.39$), two items were eliminated from assurance construct, such as "The behavior of staff instill confidence in patients" ($r=0.35$) and "I feel safe in my transaction with this hospital" ($r=0.37$), two items were eliminated from empathy construct, such as "Staff follow up patients individually" ($r=0.38$) and "The hospital offers personalized attention and information" ($r=0.39$). Lastly, three items were eliminated from tangibles construct, such as "The hospital has modern-looking equipment" ($r=0.09$), "Staff look professional" ($r=0.09$), and "The hospital has visually appealing facilities" ($r=0.06$). This process resulted in 11 items with a five factor structure as was hypothesized. The final CFA analysis for measurement model contained two indicators for reliability, three for responsiveness, two for assurance, two indicators for empathy and two for tangibles. The goodness-of-fit indices of measurement model showed that the overall fit displayed an acceptable level of fit, in accordance to recommended level of Hair, Anderson, Tatham, and Black, 2010 (please refer to Table 2).

The overall measurement model was examined, including one exogenous construct (overall perceived service quality) and five endogenous constructs (reliability, responsiveness, assurance, empathy, and tangibles). Since the chi-square value of overall measurement model was not significant ($\chi^2/df=3.72$, $p=0.00$), the model was further improved. Final results of the overall model indicates that the hypothesized model fits the empirical data quite well within an acceptable level of fit ($\chi^2/df=2.00$, $p=0.006$) and other goodness-of-fit indices also showed an excellent level of fit. The GFI (goodness of fit index) 0.97 also demonstrates an excellent fit.

The comparative fit index (CFI) is 0.99, the normed fit index (NFI) is 0.98 further indicate a very good fit (Hair et al., 2010). For RMSEA, a value of about 0.05 is very close to the good fit. Comparative corresponding critical values are shown in Table 2 below.

Table 2: Goodness of fit indices

Indicator	χ^2 (df)	χ^2/df	p-value	RMSEA	RMR	GFI	NFI	CFI	RFI	AGFI
Criteria	-	<3	>.01, .05	<0.05	<0.05	Closer to 1.0	Closer to 1.0	Closer to 1.0	Closer to 1.00	Closer to 1.0
Measurement model	44.39 (27)	1.64	.019	0.04	0.028	0.98	0.99	0.99	0.97	0.95
Overall model	64.15 (32)	2.00	.006	0.05	0.033	0.97	0.98	0.99	0.97	0.94

Note: Criteria Source; Hair et al., (2010); χ^2 = Chi-square; GFI=goodness-of-fit index; RMSEA=root mean square error of approximation; NFI= normed fit index; CFI=comparative fit index; RFI=relative fit index; AGFI=adjusted goodness-of-fit index; PNFI=parsimonious normed fit index.

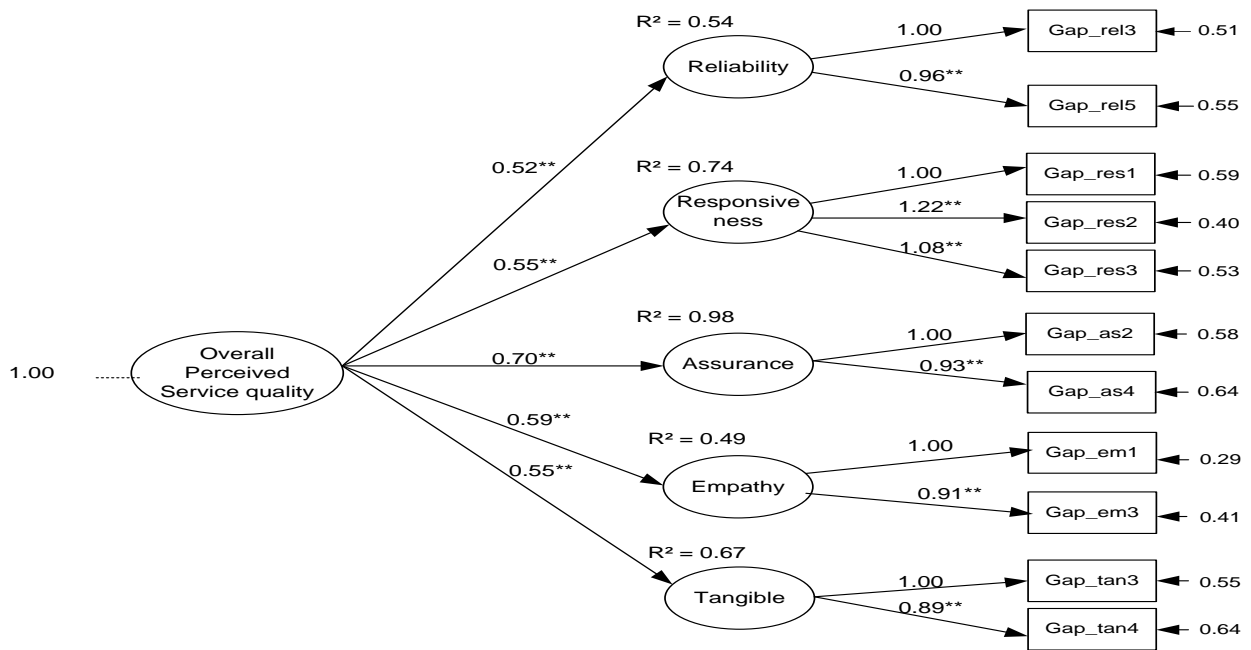
Convergent validity was assessed based on factor loadings, construct reliability, and average variance extracted (Hair et al, 2010). The standardized factor loadings for all items should exceed 0.60 (Hatcher, 1994); construct reliability should exceed 0.60 (Bagozzi & Yi, 1988) and an average variance extracted should exceed 0.50 for a construct (Fornell & Larcker, 1981). In this study (please see Table 1), all variables had factor loadings higher than 0.70 and the 0.01 significance level as well. Thus all variables are significantly related to their specified constructs, confirming the posited relationships among indicators and constructs. The reliability for each constructs (Reliability, Responsiveness and Empathy) ranged from 0.65 to 0.78, which exceeded the recommended level of 0.60, indicating a satisfactory estimation, except the “assurance” and “tangibles” constructs, which had values of 0.53 to 0.57, falling somewhat short of the recommended level (Hair et al, 2010; Nunnally and Berstein, 1994)

For the average variance extracted measures, constructs (i.e., reliability, assurance and tangibles) had values of 0.37 to 0.48, falling somewhat short of the recommended 50 percent, except the “responsiveness” and “empathy” construct, which had values of 0.51 to 0.64, exceeding the recommended level substantially.

Structural model

Within the overall model, the estimates of the structural coefficients provide the basis for testing with one exogenous variable (i.e., overall perceived service quality) and five variables (i.e., reliability, responsiveness, assurance, empathy, and tangibles). Therefore, assessment of the structural model involves estimating the path loadings and the R^2 values. Path loadings indicate the strengths of the relationships between latent variables, while R^2 indicates the amount of variance explained by the exogenous variable. Fig.1 provides details about the parameter estimates for the model,

Fig.1. Structural model testing of service quality



*p<.05, **p<.01

$\chi^2 = 64.15$, $df = 32$, $\chi^2/df = 2.00$, $P\text{-value} = 0.006$, $RMSEA = 0.05$, $GFI = 0.97$, $AGFI = 0.94$, $NFI = 0.98$, $RMR = 0.03$

Also, Table 3 reports the measured effects of all relationships. As indicated by path coefficients and the associated significance levels, the influence of overall perceived service quality on reliability ($\gamma = .52$, $t\text{-value} = 9.96$), responsiveness ($\gamma = .55$, $t\text{-value} = 11.11$), assurance ($\gamma = .70$, $t\text{-value} = 14.19$), empathy ($\gamma = .59$, $t\text{-value} = 11.76$), and tangibles ($\gamma = .55$, $t\text{-value} = 10.76$) were found to be significant at the .01 level.

Table 3: Estimate of the direct effect (DE)

Path	Effect	Path coefficients	Standard error	t-value	Structural equation fit (R²)
Overall PSQ -> Reliability	DE	0.52	0.05	9.96	0.54
Overall PSQ -> Responsiveness	DE	0.55	0.05	11.11	0.74
Overall PSQ -> Assurance	DE	0.70	0.05	14.19	0.98
Overall PSQ -> Empathy	DE	0.59	0.06	11.76	0.49
Overall PSQ -> Tangibles	DE	0.55	0.05	10.76	0.67

Note: All t-statistics are significant at 0.01 levels; Overall PSQ = Overall Perceived Service Quality.

The review of squared multiple correlations of the structure model for the overall perceived service quality variables, the model explained 54% of variance in reliability, 74% of variance in responsiveness, 98% of variance in assurance, 49% of variance in empathy, and 67% of variance in the tangibles dimension. Since the explained variance for the endogenous constructs was above 40%, the structure model was believed to have acceptable reliability (Fornell and Larcker, 1981) and relatively good predictive power.

5. Discussion and Conclusions

The service quality model was developed and tested using data and information gathered via a questionnaire survey covering the 400 Thai private hospital out-patients in the health services sector.

This study used Structural Equation Modeling (SEM) to empirically validate the proposed causal relationships between the variables. The findings help advance the service quality disconfirmation paradigm as it relates to assessing perceived health care service quality. As for the hospital management is concerned, the results offer insight as to the areas of service quality in which to concentrate in order to accomplish their business goals and objectives. As the findings indicated, SERVQUAL's five dimensions (i.e. reliability, responsiveness, assurance, empathy and tangibles) had a direct explanatory effect on overall perceived service quality (overall PSQ). The assurance was the dimension most strongly associated with overall PSQ; empathy was second, followed by responsiveness, tangibles and reliability.

The results of study show that SERVQUAL's five dimensions had significant influence on overall PSQ. These findings are consistent with the prior research; for example, Zaim, et al (2010) studied the important criteria for measuring service quality in the hospitals in Turkey and confirmed that tangibility, reliability, courtesy and empathy were significant predictors of overall service quality. Previous studies have also shown that the highest expectations and perceptions were related to the tangibles dimension as it relates to the physical delivery of care at private hospitals in Jordan and Saudi Arabia, Iran, Malaysia (Al-Hawary, 2012; Zarei et al., 2012; Butt & Run, 2010) and the lowest expectations and perceptions related to the empathy dimension (Zarei et al., 2012). Ahmed and Samreen (2011) studied the private hospital of Karachi in Pakistan found that the factors reliability and responsiveness influenced patients' satisfaction. Finally, results from several studies have shown that patients' expectations exceed perceptions of the private healthcare as the patients felt that a waiting time of more than an hour to receive the service was excessive and that the healthcare provider did not respond fast enough when problems arose in private healthcare practice (Suki, et al., 2011; Norazah, et al., 2011).

The findings of the present study have several managerial implications for service quality enhancement in the private hospitals in Thailand. First, *Assurance* was the strongest predictor of service quality. Thus, private hospital out-patient staff can exercise strong influence over perceived quality by having the knowledge to answer patients' questions, and by being courteous and friendly at all times to out-patients. Out-patient private hospital services are being judged like many other consumer services, so knowledge and courteousness, along with acting on patient explicit or implicit needs and/or complaints is critical. Furthermore, the behavior of staff should instill confidence among the out-patients. Secondly, the *empathy* dimension of service quality can be strengthened especially by understanding specific out-patient needs and looking out for the out-patients' best interests. Thus, The staff should make the patients aware of their medical conditions, answer their questions, recognize and pay attention to their emotional and social needs and be available when needed (Zarei et al., 2012).

Concerning the *responsiveness* dimension, improvements can improve by being willing to help, offering fast and efficient service to out-patients, and further by giving sincere and detailed information. Therefore, the private hospitals should design a scheduling system of service provision (such as out-patients who have individual appointment times and out-patients being informed of delays) and be bound by it. Irfan and Ijaz (2011) suggest the importance of efficiently attending patient calls of private hospitals in Pakistan. Fourth, a private hospital can and should be aware how *tangibles* come into play, i.e. by featuring flexible working hours and offering visually appealing office décor. In the recent years, the private hospitals in Thailand have invested more in physical and environmental areas. Similarly, a study of private hospitals in Tehran confirmed the importance of providing a clean and healthy environment, sterilized equipment, availability of medical tests and pharmacy facilities within the hospitals facilities (Zarei et al, 2012) . Finally, *reliability* is what the out-patients expect from the private hospitals. The service quality provided by the private hospitals is determined mainly by the delivery of proper and well-timed care. Moreover, Ahmed and Samreen (2011) suggest making sure the availability of doctors at the appointed time.

6. Limitations and Future research

This study has limitations of the results. First; the results are based on the private hospitals of Bangkok, so future studies should be conducted in other parts of the country to increase of external validity of this study. Second; the research was conducted using a cross-sectional method to empirically investigate the relationships of interests, such methods assume that the model parameters are constant over time and over subjects—which couldn't be confirmed in this study. Besides, using of cross-sectional data, the findings suffer from their inability to determine true causal relationships, so this study's conclusions would have been stronger and more robust using say a longitudinal design.

Additionally, the service quality model developed in this study could be extended to investigate the relationship between service quality and customer satisfaction and customer behavior intentions in health care sector or other service industries. Furthermore, the finding that the variance extracted for construct dimensions (i.e., reliability, assurance and tangibles) indicates that more than half of the variance for the specified indicators is not accounted for by the construct. This finding may lead future researchers to explore a re-specified model, perhaps considering additional latent variables and their attendant indicators if theoretically justified.

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