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The Effects of Service Quality and Perceived Price on Satisfaction of Medical Care Service - Case Study at Tien Giang General Hospital- Vietnam

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Abstract

The study examines the effects of service quality and perceived price on patients' satisfaction at a general hospital in Tien Giang province. This convenient sample of 450 patients who use healthcare services has been collected to test the theoretical model. In the study, the author used SEM (Structural Equation Model) to estimate the above relationships. The results reveal that patients 'customer satisfaction depends on two factors as service quality and perceived price, of which service quality has impacted satisfaction 2.5 times stronger than perceived price.

Keywords: Health services quality, Satisfaction, Tien Giang, Vietnam.

1. **Introduction**

In life, risks are inevitable. Among those, the risks of sickness are frequent and inevitable that no one can avoid. To satisfy the minimum needs, people have to work for their living. However, workers are not always guaranteed to maintain regular jobs due to poor health reasons. These are times of risk, such as sickness, illness, or occupational accidents, leading to a loss of working capacity or a partial decrease in a working capacity.

At present, traditional methods have proved to be unsafe enough to help each person overcome difficulties in life. To supplement those difficulties and shortcomings, contemporary methods such as social insurance, health insurance, life insurance, accident insurance, unemployment insurance, and social assistance is being considered popularly.

As a transitioning economy, Vietnam is a developing country, so many social services have not met the demand, including health insurance services. In reality, the quality of medical examination and treatment with the health insurance card is much lower than the quality of health care on a freeway.

Therefore, a large number of people with health insurance cards do not use this service, instead of paying themselves to get better service because the amount of medical examination and treatment with the health insurance card is very poor, the procedures are complicated and costly.

Realizing the importance of service, researchers focused on this area in the early 1980s (Gronroos, 1984). Since then, the model has been adjusted and developed continuously and service quality is seen at different degrees such as (1) Service attributes; (2) Service quality; (3) Service value, and (4) Personal values (Thuy & Hau, 2010).

The 5-gaped service quality model and its SERQUAL scale have been tested in many different countries. The results show that the model and scale vary from country to country. However, little research has been done in the health field in Vietnam. Therefore, factors that can affect health service satisfaction have not been comprehensively assessed. Therefore, the reasons are assessed that insured people are satisfied with this service should be clarified. The health service in Tien Giang province is still in the general trend of the country. So, the author will explore the components of health service quality in Vietnam with the research scope in Tien Giang province.

2 Literature review and hypotheses

2.1. Characteristics of health services.

Health services are special, intangible goods that are distinct economic from other tangible products. In essence, health services include activities performed by health staff such as: Examining and treating patients and servicing their family members. Healthcare is a commodity associated with human life, so even though there is no money, they still have to seek medical treatment. This special feature is unlike any other commodity.

With other types of goods, buyers have many criteria to choose from, they will not get it if they do not have enough financial capacity or do not like that type of goods. For services with high labor content, quality service occurs during the interaction between service providers and their customers (Svensson, 2002). For some services such as hairdressing, aesthetic services, medical examination, and so on, the customer's requirements for the service they want are very important. For example, such as the hairstyle you want, what kind of cosmetics should be used? or what symptoms do they suffer? Therefore, customers' feedback is important to improve the quality of these services.

2.2 Components of service quality

The concept of quality comes from the viewpoint of quality in the manufacturing sector. Today service quality has been identified as a substantial strategical competitive element of service providers. For tangible products, one can easily assess quality through packaging, color, smell, look, taste, etc. While service is an invisible commodity, its quality shows during interactions between service providers and users (Svensson, 2002).

Service quality is a very broad and complex category, reflecting a combination of economic, technical, and social aspects. Therefore, there are many different concepts of quality, depending on the approach that the concept of service quality is understood.

Many academics try to define and measure service quality from their viewpoint. (Lehtien & Lehtien, 1982) argued that service quality must be assessed in two aspects: (1) the process of delivery and (2) the result of the service. (Gronroos, 1984) makes another point that the quality service must be assessed on two aspects: (1) technical quality, which is related to what is served, and (2) functional quality, refers to how the recipient is served. Meanwhile, (Parasuraman et al., 1985) introduced a 5-gaped model with 5 components called popularly SERQUAL.

From the customer-oriented point of view, service quality is synonymous with meeting customer expectations, satisfying customer needs. Therefore, quality is determined by the customer. The needs of customers are varied, so the quality will also have many levels depending on the expectations of the particular customer. The quality of service is decided by the customer. Thus, quality is a subjective category, depending on the needs and expectations of customers. The same level of service quality but customers will feel differently at stages of the service process. Service quality is the difference between what consumers expect about the service and their perception of the service results they receive (Parasuraman et al., 1988). The scope of this study is conducted in the medical field, so the application of the SERQUAL model is appropriate.

Parasuraman et al (1985) stated that service quality is a customer's perception of that service, including 10 aspects:

(1) Reliability; (2) Responsiveness; (3) Assurance; (4) Access; (5) Courtesy; (6) Communication; (7) Credibility; (8) Security; (9) Understanding customer; (10) Tangibles.

From these 10 aspects, five main components of service quality are shortened in the following studies (Parasuraman et al., 1988) including:

(1) Reliability (REL): demonstrating the ability to deliver the service properly and on time initially.

(2) Responsiveness (RES): showing the willingness of staff to provide timely services to customers.

(3) Assurance (ASS): showing the professional style of employees

(4) Empathy (EMP)): demonstrating employee's concern to customers

(5) Tangibles (TAN): Employee's attire, appearance, and service facilities.

Thus, it can be seen that service quality is a second-order construct that includes five aspects, it is a composite indicator of factors. It is measured by different factors in sectors to the sector.

2.3. The relationship between service quality and customer satisfaction

Customer satisfaction is the emotional responsiveness to the overall perception of the customer about the service provider by comparing the difference between what they received with the previous expectation.(Oliver, 1999)showed that, satisfaction is the perception of consumers when the need is met, pleasantly, and enjoyably to their expectations and goals.

Customer satisfaction is becoming one of the most essential goals that any company is looking for in long-term customer relationships. In the context of this study, When there is a health problem, the patient is not only worried about the illness, but the procedure in the hospital is always a problem that makes them worried. Therefore, contacting customers is one of the most core processes to help them alleviate anxiety, creating customer satisfaction is the key to success (Chavan & Ahmad, 2013).

One of the main factors determining customer satisfaction is the customer's perception of service quality. Customer satisfaction is described as the result of a comparison between customer expectations and their subsequent perceptions of service quality (Herington & Weaven, 2009). as indicated above, perceived service quality is described as an antecedent to customer satisfaction

Service quality and customer satisfaction are two differentiating concepts. Customer satisfaction is a general concept that expresses their satisfaction when using a service.

Meanwhile, service quality focuses only on the specific components of the service (Zeithaml & Bitner, 2000). There is still no consensus among academics on the concepts, but most of them believe that there is a relationship between service quality and customer satisfaction (Cronin and Taylor, 1992).

Many Previous studies showed evidence to support the relationship between customer satisfaction and service quality (Yee, Yeung, & Cheng, 2011). Even so, there are debates about a causal relationship between customer satisfaction and service quality.

In the tourism industry, (Chon, 1989) believes that traveler satisfaction is dependent on their expectations before arrival and the experience at the tourist site (what travelers were seeing, feeling, and getting) is no different. At the same time, it was found that there is a correlation between visitor's expectations and their satisfaction. The correlation is that, after tourists purchase travel services, if their post-travel reviews are better than their expectations, they will be satisfied with their travel.

Even though, there are also debates about the causal relationship between customer satisfaction and service quality. Specifically, There are three types of relationships between customer satisfaction and service quality in the literature (Brady et al., 2002). First, as indicated above, service quality is described as an antecedent to customer satisfaction. Second, some researchers propose that customer satisfaction is an antecedent to service quality (Bitner, 1990). The third position of satisfaction-service quality relationship argues that neither satisfaction nor service quality may be the cause of others (Dabbolkar, 1995).

From the above reasons, we have the following hypothesis:

H1: In the medical service industry context, overall service quality of medical examination and treatment has a positive effect on satisfaction.

2.4. The relationship between perceived price and customer satisfaction

In general, price plays an important role in commercial transactions. Customers often consider price as the primary indicator of the quality of goods or services (Yoo et al., 2000). Sometimes this indicator gives the opposite result, the price reducing the value of the good or service because its value delivered is not commensurate with the cost spent on that good or service. People complained Popularly, "the item I bought is too expensive".

In this study, perceived prices are seen as perceptions of people purchasing medical services compared with those at other medical centers with the same function. Therefore, when considering the quality of goods or services, consumers always tend to compare the price of such goods or services with similar goods or services to evaluate the quality of the item they have purchased(Chang & Wildt, 1994).In comparison with similar goods or services, if the price of the goods or services is lower than the same ones, they tend to judge the quality of goods or services they buy higher.

From the above reasons, we have the following hypothesis:

H2: Perceived prices of medical examination and treatment services have a positive effect on satisfaction.

2.5. The research models

Figure 1 depicts the conceptual model explaining the role of service quality and perceived price on satisfaction. Specifically, the model proposes that service quality and perceived price positively impact satisfaction:

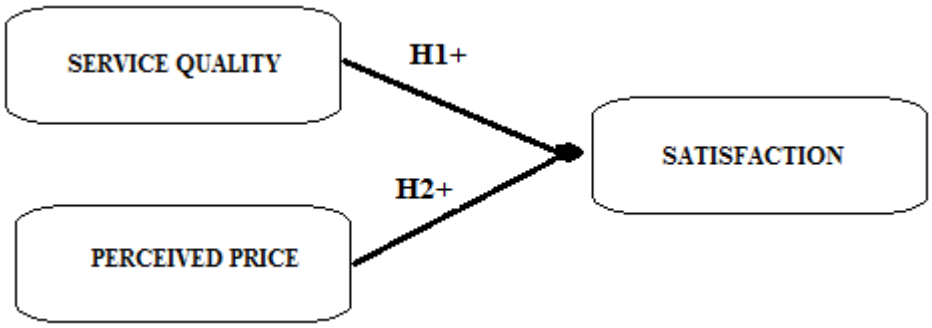

Figure 1: Conceptual Model

3 Research Methods

3.1 Research context

Vietnam provides a good case for the study of medical service quality. As a transitional economy, Vietnam is moving from a centrally planned economy to a market-oriented economy under socialist guidance. Nearly 40 big years after the Vietnam War, Vietnam's economy has grown continuously and has been at the top of the high growth countries in the past ten years. As a result of economic growth, the people's standard of living has also improved significantly, of which the need for healthcare is relatively remarkable. In the context that the demand for this service has changed and the trend of competition is increasing, this study has practical significance in Vietnam.

3.2 Research process

Two phases comprised the study: a pilot study and the main survey:

(1) The pilot study included a qualitative study and a quantitative survey. The pilot qualitative study was undertaken using a focus group with twelve experts who have participated in medical examination and treatment in the general hospital of Tien Giang. The purpose of this study was to modify the measures of the constructs in the model.

(2) The quantitative pilot study was conducted using face-to-face interviews with one hundred and twenty patients at Tien Giang General Hospital to refine the scales. Cronbach's alpha reliability and exploratory factor analysis (EFA) were used to preliminarily assess the scales. The Cronbach's alphas for these scales were accepted in the range of 0.7-0.9 because it provides a high level of reliability Nunnally, 1978 (cited in Hinkin, 1998)and Corrected Item- Total correlation of items >=0,3 are satisfied (Nunnally & Bernstein, 1994).

(3) The main survey was also undertaken by using face-to-face interviews. A convenience sample of four hundred and twenty patients who are participating in medical examination and treatment at the general hospital of Tien Giang was interviewed in this survey. The purpose of this main survey was to validate the measures and to test the structural model.

First, the analysis of the reliability Cronbach's Alpha, EFA analysis, and then the analysis of the structural model (SEM). EFA analysis in the main survey (n=450), in this period factor loadings, were accepted as greater than 0.4 (Hair et al, 2014, page 115)

The study uses SPSS 20 to analyze Cronbach's Alpha and EFA and Amos 20 to test theoretical models and hypotheses

To measure the appropriateness of the model with surveyed data, researchers often use the following indicators to evaluate: Chi-square (CMIN); Chi-square adjusted for degrees of freedom (CMIN /df); Comparative Fit Index (CFI); Tucker & Lewis Index (TLI); Goodness of Fit Index (GFI); Root Mean Square Error Approximation (RMSEA) as follows:

A model is considered to be fit with the data collected from the samples when Chi-square is significant at the 0.05 level (Anderson & Gerbing, 1988). However, Chi-square has the disadvantage that it depends on the sample size, meaning that the larger the sample size, the greater the statistical value of Chi-square, which reduces the model fit. In that case, indicators such as the relative Chi-square-CMIN / df <= 3, CFI TFI, GFI> = 0.9 and RMSEA <= 0.5 all satisfied are still considered suitable model (Nguyen & Nguyen, 2011).

2.3 Measures

For this study, the measurement scales and the items are borrowed from previous studies. All indicators to measure research concepts are adapted to reflect the research context. Modifications and translations are made to transform the measurement scale to be readable for patients and reflect the context. Scales were originally written in English and later translated into Vietnamese by a scholar fluent in both languages. This procedure is carried out because most of the respondents are not fluent in English. The service quality is a second-order construct comprised of five components and measured by 21 items adopted from Parasuraman et al., 1991; perceived price is a first-order one measured by 3 items borrowed from Chang & Wildt, 1994; 3 items of the satisfaction were also borrowed from Cronin et al., 2000.

In general, the respondents are asked to give their agreement or disagreement with the statement. Respondents give their opinion for each statement through a 5-point Likert scale with 1 to indicate "strongly disagree" and 5 to indicate "strongly agree".

4 Results

4.1 Qualitative analysis

First, the authors conducted focus group interviews with twelve experts to modify the measures. Although most of the measures of constructs were available in the literature, this step is important to make them appropriate for the context of this study. Two new items are developed as one item for Perceived price and one for Satisfaction. Thus, there are 29 items in total in this study.

4.2 Quantitative analysis

Analysis of Cronbach's alpha reliability in the pilot study

The measures were refined via Cronbach's alpha reliability. The Cronbach's alpha for all constructs exceeds 0.75, satisfying the general recommended level of 0.70 for the research indicators. However, one item of EMP is deleted (Corrected item-total Correlation = 0.28 <0.3)

Analysis of Cronbach's alpha reliability in the main survey

The results showed that all scales were used in the study satisfied the requirement for Cronbach's alpha reliability. Specifically, Cronbach's alphas of the scales measuring REL, RES, ASS, EMP, TAN, PP, SAT were 0.83, 0.80, 0.83, 0.79, 0.86, 0.83, and 0.87, respectively and all item-total correlations were favorable (>0.3).

EFA analysis

EFA extracted four factors from 21 items measuring SERVICE QUALITY with 63.929 percent of variance extracted at eigen value = 1.751. The EFA shows that the two components RES and EMP are theoretically distinct, but in practice, the respondents may see the response to their needs and empathize with Their needs are the same in this study (Table 1).

Table 1: Rotated Component Matrix

Rotated Component Matrix

	Component			
	1	2	3	4
TAN1			.830	
TAN2		.267	.712	
TAN3			.781	
TAN4			.785	
TAN5			.828	
RES1	.831			
RES2	.766			
RES3	.668			
EMP1	.807			
EMP2	.693			
EMP3	.705			
REL1		.883		
REL2		.688		
REL3		.685		
REL4		.715		

REL5		.889		
ASS1				.809
ASS2		.209		.790
ASS3		.226		.717
ASS4				.769

CFA analysis

Analysis of CFA in the first and the second time showed GFI = 0.888 <0.9 and GFI = 0.898 <0.9. After 2 times of connecting the errors together, the Chi-square is not significant at 0.05 level$\chi 2$ [341] = 658.240 (p = 0.000). However, Other indices show the good fit for the research model, such as the relative Chi-square $\chi 2/df$ = 1.930 (smaller than 2) ;goodness fit index (GFI) = 0.906;the comparative fit index (CFI) = 0.949;the Tucker-Lewis coefficient index (TLI) = 0.944(GFI, CFI, TLI all > 0.9), and root mean square error of approximation (RMSEA) = 0.046 (smaller than 0.05) show the acceptable(depicted in Fig.2).

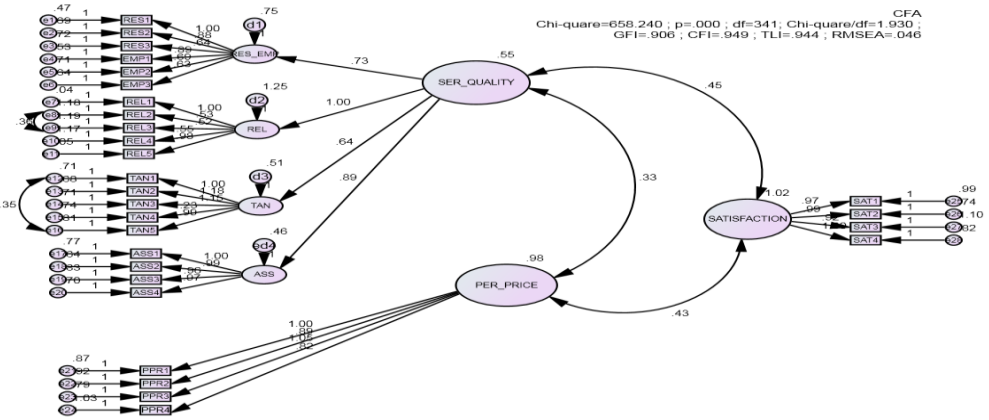

Figure 2: Saturated Model

Convergent validity can be assessed by examining the factor loading and the average variance extracted (AVE) of the constructs (Fornell & Larcker, 1981). The analytical results also show that All the indicators had significant loading onto the constructs, Overall service quality; Perceived price; Customer Satisfaction which they expected to measure ($p < 0.01$). Moreover, as presented in Table 2, the AVE for each construct is greater than 0.50, which indicates the convergence validity of the constructs. The correlations between constructs, (Table 3), indicate that they were significantly different from unity, thus supporting the construct discriminant validity.

Table 2:Standardized CFA Loading

ITEM	CFA loading	P
RES: ρ_c=0.85; AVE=0.50		
RES1 <--- RES_EMP	.831	***
RES2 <--- RES_EMP	.736	***
RES3 <--- RES_EMP	.613	***
EMP1 <--- RES_EMP	.780	***
EMP2 <--- RES_EMP	.641	***
EMP3 <--- RES_EMP	.628	***
REL: ρ_c=0.86; AVE=0.57		
REL1 <--- REL	.989	***
REL2 <--- REL	.547	***
REL3 <--- REL	.537	***
REL4 <--- REL	.567	***
REL5 <--- REL	.984	***
TAN: ρ_c=0.86; AVE=0.56		
TAN1 <--- TAN	.713	***
TAN2 <--- TAN	.773	***
TAN3 <--- TAN	.761	***
TAN4 <--- TAN	.775	***
TAN5 <--- TAN	.685	***
PPR: ρ_c=0.79; AVE=0.49		
PPR1 <--- PER_PRICE	.727	***
PPR2 <--- PER_PRICE	.677	***
PPR3 <--- PER_PRICE	.758	***
PPR4 <--- PER_PRICE	.627	***
ASS: ρ_c=0.82; AVE=0.54		
ASS1 <--- ASS	.732	***
ASS2 <--- ASS	.758	***
ASS3 <--- ASS	.705	***
ASS4 <--- ASS	.737	***
SAT: ρ_c=0.81 ; AVE=0.52		
SAT4 <--- SATISFACTION	.745	***

SAT3	<---	SATISFACTION	.663	***
SAT2	<---	SATISFACTION	.759	***
SAT1	<---	SATISFACTION	.704	***

Table 3: **Correlations**

			r	Se('r)	CR	P
PER_PRICE	<-->	SATISFACTION	0.433	0.04307	10.05333	1.55918E-21
PER_PRICE	<-->	SER_QUALITY	0.451	0.04264	10.57532	1.97016E-23
SATISFACTION	<-->	SER_QUALITY	0.604	0.03808	15.86076	4.29752E-45
e12	<-->	e16	0.468	0.04222	11.08317	2.48263E-25
e8	<-->	e9	0.300	0.04558	6.581692	1.33178E-10

Structure model analysis

Basing on the accepted saturated model, SEM was used to test the theoretical model and two hypotheses.

The results of Table 4 show that all the hypotheses are satisfied with a confidence level of 99%. Specifically, there is a positive impact between service quality on customer satisfaction who buys medical services, so hypothesis H1 is satisfied (standardized impact factor is 0.513), the Perceived price also has a positive influence on satisfaction (the standardized impact coefficient is 0.201), so hypothesis H2 is also satisfied.

Table 4: Structural Path

			Unstandardized Estimate	Standardized Estimate	S.E.	C.R.	P
SATISFACTION	<---	SER_QUALITY	.701	.513	.119	5.904	***
SATISFACTION	<---	PER_PRICE	.206	.201	.067	3.081	.002

5Conclusion and implications

The study examines the effect of service quality and perceived price on satisfaction at Tien Giang general hospital. In the study, the author performed qualitative research to adjust the scale. Quantitative studies have been done through Cronbach's Alpha and EFA to test the reliability of the scale. Finally, we use a structural model to test hypotheses in the theoretical model. The results show that customer satisfaction is influenced by 2 factors: service quality and perceived price.

Based on the research results, it shows that customer satisfaction is affected by two factors: service quality and perceived price. So, for the users to be satisfied with this service, it is necessary to promote both service quality and a reasonable price with the service. The results also demonstrate that overall service quality affects customer satisfaction 2.5 times stronger than the perceived price. Therefore, to enhance satisfaction, it is necessary to give priority to promoting functional quality of service through four components: reliability, assurance, Tangibles, and responsiveness-empathy.

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