



# The Effect of Perceived Service Quality and Expectation on Customer Satisfaction

Thi Le Ha Nguyen<sup>1\*</sup> and Paulo Moreira J<sup>2s</sup>

<sup>1</sup>VNU University of Medicine and Pharmacy, Vietnam National University, Hanoi”

<sup>2</sup>International Healthcare Management Research & Development Centre, Shandong Provincial Qianfoshan Hospital, China

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\*Corresponding author: Ha Nguyen, VNU University of Medicine and Pharmacy, Vietnam National University, Hanoi,

Email: Ng.leha72@yahoo.com

## Abstract

**Objective:** Customer satisfaction is a useful tool to measure the service quality of the service firm. Service quality was measured by perceived service quality and expectation through the insight of the client. The purpose of this paper examines the relationships between various factors in the integrated model which includes perceived service quality, patient expectation, patient satisfaction, and patient loyalty.

**Methods:** The study was carried out at a tertiary-level hospital in Vietnam. A self-administration questionnaire was delivered to inpatients who were treated in April 2018. The Statistical Package of Social Sciences version 25.0 and Amos 25.0 for structural equation modeling were used to perform the analysis statistic.

**Findings:** The results presented that patient expectation and perceived service quality have a positive influence on patient satisfaction; patient expectation on perceived service quality and patient satisfaction on patient loyalty.

**Originality:** Findings indicated that expectation and perceived quality are factors directly effect to satisfaction.

**Practice implications:** Our research has implications contributed to policymakers when considered expectation and perceived quality that improving customer satisfaction and maintain loyalty.

**Keywords:** Perceived Service Quality; Expectation; Satisfaction; Loyalty

**Abbreviations:** PSQ: Perceived Service Quality; PE: Patient Expectation; PS: Patient Satisfaction; PL: Patient Loyalty; SEM: Structural Equation Modeling; CFA: Confirmatory Factor Analysis

## Introduction

Nowadays, service quality has been a key factor in the competitive environment of the service industry Jiang et al [1], Chakravarty [2]. Thus, assessing consumer satisfaction was used to measure and evaluate the service quality of service firms Chen et al [3], Kim et al. [4]. Our study aims to investigate the influence of perceived service quality and expectations related to customer satisfaction and loyalty. Client satisfaction is a useful metric to measure service quality in a service company Quintana et al. [5]. Studies have demonstrated that customer satisfaction is determined by perceived quality and expectations of service quality Lin et al. [6]; Naqavi and Baneshi [7] Perceived quality plays a mediating role between emotional service expectation and user satisfaction Jeong et al. [8]. Furthermore, perceived quality is a mediating factor in expectation and loyalty.

Therefore, perceived quality and expectation of various parts of service quality are the necessary factors in determining customer satisfaction Shahsavari and Sudzina [9] willingness to re-utilize Jung et al. [10]. The measurement of satisfaction focuses on a gap of relationship between perceived quality and client expectations with aspects of service. Perceived service quality has a direct effect on consumer satisfaction and affects indirectly customer loyalty through satisfaction plays a mediator factor. Client satisfaction is a mediating factor in the relationship between service quality and loyalty. Thus, customer satisfaction was an indispensable factor when measuring service quality of providers.

In our research model include four factors of perceived service quality, patient expectation, patient satisfaction, and patient

loyalty. In which perceived service quality and patient expectation factors consider tangibility, reliability, and responsiveness. Patient satisfaction and patient loyalty measure service quality. These factors were increasing our knowledge when considering factors related to satisfaction and maintain customer loyalty.

## Literature Review

In the literature review part, the author reviews the related references to the scope of this paper. The purpose of the paper was to examine perceived service quality and expectations related to customer satisfaction and loyalty.

### Perceived service quality (PSQ)

Service quality of providers was measured by a gap relationship between perceived quality and customer expectation. Aspects of service quality were assessed including tangibility consider the physical facilities, equipment, personnel and communication materials perceived by the five human senses; Reliability mention to the firm's ability to deliver a safe and reliable service; Responsiveness consist staff' willingness to cooperate with and assist the customer; Empathy refers staff's ability to understand the customer's mood and feelings; and Assurance focuses on to the ability of a firm to instill a sense of competence and confidence in their customer. A close relationship between perceived quality and expectation was supported by. Perceived quality directly influences customer satisfaction. It is a core element in maintaining customer loyalty and related to indirect to customer loyalty through customer satisfaction is a mediator role. Satisfaction is a predictor of repurchase intention.

### Patient Expectation (PE)

Measurement and evaluation of service quality are based on assessing customer expectations and perceived quality of aspects of service. Expectations are related to satisfaction Mattos et al. [11]. The fulfillment of consumer expectations increased satisfaction Kumar et al. [12]. Moreover, perceived quality is closely related to client expectations. Therefore, improving perceived quality increased customer satisfaction and word-of-mouth Alrwashdeh et al. [13]. Customer expectation and perceived service quality are predictor factors of loyalty. Expectation has a positive influence on healthcare outcomes Haanstra et al. [14], and indirectly to loyalty through perceived quality is a mediator factor.

### Patient Satisfaction (PS)

Evaluating customer satisfaction is a tool to measure the service quality of the provider. Service quality has positively influenced user satisfaction Ho et al. [15]. Therefore, improving the service quality is to increase customer satisfaction and loyalty. Measures of service quality were based on the assessment of a gap relationship between expectation and perceived quality of parts of service quality. s-quality service is key to a competitive environment. Measurement of service quality focuses on customer satisfaction. Customer satisfaction is a mediator factor

of perceived quality and word-of-mouth. It is a predictor element of loyalty. Customer satisfaction improved by meeting fulfillment users' expectations of service quality. Thus, customer satisfaction is an indispensable element when evaluating service quality of service firm Rizvi et al. [16].

### Patient loyalty (PL)

Service quality directly influences satisfaction and customer loyalty Jameel et al. [17]. Increasing perceived quality related to willingness re-buy of the service organization. Customer satisfaction and happiness can lead to a sense of loyalty Zhong and Moon [18]. Expectation and perceived quality related to satisfaction and loyalty. Perceived quality is a mediator role of expectation and loyalty. The fulfillment of customer demands on service quality that contributes to customer satisfaction. Perceive service quality has a positive influence on satisfaction and word-of-mouth Lee et al. [19].

## Research Hypotheses

Emotional service expectations related to perceived quality and loyalty. Measurement service quality based on perceived quality and expectation of aspects of service Aghamolaei et al. [20]. A relationship between perceived quality and expectations was supported by Chakravarty (2011). Customer expectations were higher than PSQ. Meeting expectations increases satisfaction. The patient's expectation has a positive influence on care outcome. Perceived quality is a mediator role of expectation and loyalty. Based on these discussions, the study gives hypothesis: H1: Patient expectation (PE) has a positive effect on Perceived service quality (PSQ).

Customer expectations have a close relationship to satisfaction. Expectations impact on perceived service quality and perceived quality directly affect on loyalty Measurement and evaluation of service quality based on a gap in the relationship between customer expectations and PSQ. The key predictors of satisfaction and perceived quality of healthcare quality were overall satisfaction and meeting expectations Abidova et al. [21]. Satisfaction is a mediator factor of perceived quality and word of mouth. Moreover, the meeting of consumers' satisfaction and expectations has a significant influence on service outcomes. Thus, the hypothesis of the study is proposed: H2: Patient expectation (PE) has a significant influence on patient satisfaction (PS).

The perceived service quality remarkable affects customer satisfaction. There is a close relationship identified between perceived quality and expectation that expectation is higher than perceived quality. Therefore, improving perceived quality increased satisfaction. Consumer satisfaction is a mediating role of perceived quality and loyalty Zhou et al. [22]. Moreover, the relationship between perceived quality and expectations was considered to assess service quality and customer loyalty. Measurement and evaluation of service quality by insights into the gap between perceived quality and expectations. Thus,

expectations and perceived quality related to satisfaction. Satisfaction is a necessary tool when evaluating the service quality of service providers. Considering these findings, we propose the following hypothesis: H3: Perceived service quality (PSQ) has a significant effect on patient satisfaction (PS).

In the service industry, the service organization focuses on customer satisfaction and loyalty are regarded as the key factor of the competition environment. Customer satisfaction has met the needs and expectations and or even exceeded the expectations of users and such delight propels them to the product Mkpojogu and Hashim [27]. Thus, customer satisfaction serves as a tool that measures and evaluates the service quality of providers by measuring a gap relationship between perceived quality and expectation with parts of the service. Improved perceived quality and expectations related to satisfaction and loyalty. Therefore, service quality has a remarkable influence on consumer satisfaction and loyalty Jameel et al. [17]. Improving the quality of care to develop customer satisfaction Yakob and Ncama [28]. Based on these observations, the following hypothesis is proposed: H4: Patient satisfaction (PS) has a moderate influence on patient loyalty (PL).

### Research Method

The study recruited members who assist in collecting data. They were trained for one day on the purpose of the study before collecting data. The study participants have signed a research agreement under the supervision of research assistance members. The research assistants confirm that completed as required after participants have completed the questionnaire. A sample size of at least 500 respondents based on the work of Wolf et al. [24] for the suit of the structural equation modeling. The study was carried

out of the National Cancer hospital in Ha Noi, Viet Nam. A total of 550 questionnaires were distributed to participants who were randomly selected from inpatient lists of 39 clinical departments treating around 2,500 inpatients per day of the research hospital. After screening the responded questionnaires, those completed by 516 respondents were used for analysis in this study.

The instrument of study was a constructed questionnaire of 40 questions consisting of two main parts. Firstly, the socio-demographic characteristics mention six questions related to age, sex, marital status, educational level, occupation, and method of paying hospital fees. Secondly, 34 questions concentrate on factors of Perceive service quality (PSQ), Patient expectation (PE), Patient satisfaction (PS), and Patient loyalty (PL). Fourteen questions concerned PSQ factors, including five questions concerning tangibility (PSQ1-PSQ5), five questions related to reliability (PSQ6-PSQ10), and four questions about relationship responsiveness (PSQ11-PSQ14). These questions were based on previous research that modified for compatibility with the research hospital context. Similarly, the relationship of the PE factor was referred to like fourteen questions comprising five refers tangibility (PE15-PE19), five concerning reliabilities (PE20-PE24), and four related to responsiveness (PE25-PE28).

Followed by the PS factor was mentioned by three questions (PS29-PS31). Finally, the PL factor included three questions (PL32-PL34). Questions were measured by using a Likert scale ranging from one to five. The data set was analyzed using the SPSS (version 25.0) statistical software. Next, the confirmatory factor analysis was used to identify the interactions and correlation among the latent variables of the model. Finally, the structural equation modeling (SEM) tests the validity of the proposed model by using the Amos 25.0 SEM program.

## Results and Discussion

### The reliability statistics

Table 1: Reliability Statistics.

Constructs	Items	Cronbach's Alpha
Perceived Service Quality		
Tangibility	5	0.873
Reliability	5	0.854
Responsiveness	4	0.845
Patient expectation		
Tangibility	5	0.942
Reliability	3	0.955
Responsiveness	4	0.939
Patient Satisfaction	3	0.792
Patient Loyalty	2	0.8
This table shows the alpha coefficients, which exceeded the reliability threshold of 0.70, confirming the reliability and adequate internal consistency of the scales		

A Likert scale was used to assess questions in this study, ranging from 'very strongly agree' (5) to 'very strongly disagree' (1). The SPSS 25.0 program was analyzed for this scale. Cronbach's alpha coefficient was used to evaluate the construct reliability and validity of the scale which considering the extent to which a set of indicators consistently and stably reflects a given construct. Findings supported in (Table 1). As (Table 1), the Cronbach's alpha value of the Perceived service quality was between 0.845 and 0.873, the Patient expectation factor was around 0.939 and 0.955, Patient satisfaction was 0.792, and that of patient loyalty was 0.800. It showed that Cronbach's alpha values were over 0.70 for all latent variables. This proved that the scales were adequately internally consistent. Moreover, there are 2 items in the reliability of patient expectation factor rejected to ensure

sufficient reliability of the scales.

**The confirmatory factor analysis (CFA)**

Our study used the CFA to examine structural equation modeling (SEM) which assesses the construct and the correct assignment of variables. The research model has assessed by standardized regression weights, the composite reliability (CR), and the average variance extracted (AVE), presenting in (Table 2). In Table 2, the standardized coefficient of items was between 0.62 and 0.93 [cut-off=0.5]. The AVE values were from 0.51 and 0.67 [cut-off= 0.5], indicating high discriminant validity. The CR values were around 0.80 to 0.97 for all latent variables [cut-off= 0.7], showing adequate internal consistency. The findings indicated that our model was supported.

**Table 2:** Confirmatory factor analysis results and Model goodness-of-fit.

Construct measures	Standardized coefficients	Average variance extracted (AVE)	Composite reliability (CR)
Perceived service quality (PSQ)		0.508	0.935
PSQ1 <---PSQ	0.619		
PSQ2 <---PSQ	0.657		
PSQ3 <---PSQ	0.694		
PSQ4 <---PSQ	0.745		
PSQ5 <---PSQ	0.679		
PSQ6 <---PSQ	0.69		
PSQ7 <---PSQ	0.737		
PSQ8 <---PSQ	0.745		
PSQ9 <---PSQ	0.756		
PSQ10 <---PSQ	0.702		
PSQ11 <---PSQ	0.783		
PSQ12 <---PSQ	0.737		
PSQ13 <---PSQ	0.754		
PSQ14 <---PSQ	0.657		
Patient expectation (PE)		0.57	0.966
PE15 <---PE	0.706		
PE16 <---PE	0.764		
PE17 <---PE	0.78		
PE18<---PE	0.78		
PE19<---PE	0.803		
PE22<---PE	0.891		
PE23<---PE	0.919		
PE24<---PE	0.929		
PE25<---PE	0.857		
PE26<---PE	0.881		
PE27<---PE	0.865		
PE28<---PE	0.877		
Patient Satisfaction (PS)		0.57	0.798
PS29 <---PS	0.779		

PS30 <---PS	0.782		
PS31 <---PS	0.7		
Patient Loyalty (PL)		0.67	0.802
PL32 <---PL	0.859		
PL33 <---PL	0.776		
Chi-square (CMIN/DF)=2.783; CMIN= 1143.852; DF= 411; P=0.000			
GFI=0.875; AGFI=0.849; CFI=0.946; TLI= 0.938; NFI= 0.918; RMSEA= 0.059			
The standardized coefficients were required to exceed a threshold of 0.5. The CR values thus met the cut-off value of 0.70 for adequate internal consistency. The AVE values evaluated in terms of the cut-off of 0.50.			

**Model Goodness-of-fit**

Model Goodness-of-fit was supported by the ratio of  $\chi^2$  to the degrees of freedom of 2.783 (P = 0.000) and the fit indices include good fit to the data such as [GFI]= 0.875 [cut-off= 0.80]; normalized fit index [NFI] = 0.918 [requirement = value of 0-1]; root mean squared error of approximation [RMSEA] = 0.059 [requirement = value from 0.05-0.08]; comparative fit index [CFI] = 0.946; Adjusted goodness of fit index [AGFI] = 0.849 [cut-off=0.80]; and Tucker-Lewis index [TLI] = 0.938 [cut-off = 0.9] (Table 2). The results indicated that our research model was supported met the reliability and validity requirements of the scales.

**Hypotheses Testing**

All hypotheses of our study presented in (Table 3) show the path of impact on factors, standardized coefficients, and significant

(sig.) at value less 0.05. Hypothesis H1: PE has a positive effect on PSQ by the path coefficient (PE---> PSQ) was statistically significant at 0.441 (p = 0.001), showing that this hypothesis was supported. This proves PE is related to PSQ. Similarly, prior studies have supported a noticeable relationship between perceived quality and expectations on aspects of service quality (Chakravarty, 2011; Naqavi and Baneshi, 2014). Perceived quality is a mediating factor of expectation and consumer satisfaction Jeong et al. [6] and loyalty Lin et al. [5]. Thus, service providers should consider expectation and perceived quality are the key factors of increased satisfaction and maintain customer loyalty. Hypothesis H2: Patient expectation (PE) on patient satisfaction (PS) supported by the path coefficient (PE--->PS) for H2 was statistically significant at 0.132 (p = 0.002), indicating that this hypothesis was accepted, which PE has a remarkable effect to PS. This hypothesis was supported.

**Table 3:** Hypothesis Test Results.

Hypothesis	Path	Standardized coefficients	Sig.	Results
H1	PE--->PSQ	0.441	***	Accepted
H2	PE--->PS	0.132	0.002	Accepted
H3	PSQ--->PS	0.759	***	Accepted
H4	PS--->PL	0.7	***	Accepted

Hypotheses were evaluated by standardized coefficients and path coefficients with significance (sig.) less than 0.05. Symbol \*\*\* represents (sig. = 0.001). Acronyms are perceived service quality (PSQ), patient satisfaction (PE) patient satisfaction (PS), and patient loyalty (PL).

Also, the work of Haanstra et al. [12] supported that customer expectation have a close relationship to satisfaction. Customer expectation related to satisfaction through perceived quality plays as a mediator role (Jeong et al., 2019). Moreover, measurement and evaluation of client satisfaction based on parts of service quality assess by a gap of perceived quality and expectation.

Hypothesis H3: Perceived service quality (PSQ) on patient satisfaction (PS) was shown by the coefficient of the path (PSQ---> PS) at 0.759 statistical significance (p = 0.001), indicating PSQ has a positive effect on PS. Finding consistent with previous research of supported that satisfaction is a mediating factor of perceived quality and word of mouth. Perceived quality has directly related to customer satisfaction, and loyalty or indirectly related to

loyalty through client satisfaction plays a mediator role. Our study contributed to policymakers when strategy plan considering improving perceived quality to increase customer satisfaction and maintain loyalty.

Hypothesis H4: Patient satisfaction (PS) on patient loyalty (PL) was supported by the coefficient of the path (PS--->PL) with a statistical significance of 0.700 (p = 0.001), suggested that the hypothesis was supported that PS related to PL. Similarly with prior research, satisfaction related to word-of-mouth and the repurchase intention or customer satisfaction is a mediator role between the relationship between service quality and loyalty. Implications for practice Our study has implications for the service providers, managers, and policymakers when considering factors



that direct influence on customer satisfaction including perceived quality and expectation. These factors contribute to developing the strategic plan in improving service quality, increasing satisfaction, and maintaining client loyalty, creating profitability, and the sustainability value of the firm.

### Conclusion and Recommendation

This paper investigates the influence of perceived service quality (PSQ), the patient expectation (PE) on patient satisfaction (PS), and patient loyalty (PL). A self-administration questionnaire was distributed inpatient who treated at a tertiary-level hospital in Vietnam in April 2018. A total of 516 documents were used to analyze this study. The data analysis was used by SPSS version 25.0 software and Amos 25.0 program. The confirmatory factor analysis (CFA) was used to confirm the dimensionality and convergent and discriminant validity of the model and used structural equation modeling (SEM) to test the validity of the proposed hypotheses model. Findings presented that PE and PSQ have a positive influence on PS; PE on PSQ; and PS on PL. Moreover, the results showed that PE and PSQ are factors that directly influence satisfaction.

Therefore, service organizations should concentrate on PE and PSQ to increase satisfaction and maintain loyalty. PSQ and PE factor and in relation to various aspects of service quality, including tangibility, reliability, and responsiveness to ensure user satisfaction. Policymakers maybe consider these factors in their strategic planning with the aim of improving consumer satisfaction and loyalty. Furthermore, the study also enhances our understanding of how the various aspects of service quality relate to consumer satisfaction.

This study has limited only focused on inpatients. Thus, the views of outpatients were not measured. For further research to holistically measure of service quality by both outpatients and inpatients. Moreover, our study was carried out at the public hospital. Further research should consider both private hospitals and public hospitals for an overall view.

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