The Relationship between Hospital Service Quality and Customer Satisfaction: An Empirical Study from Vietnam

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Abstract

Health services in developing countries are increasingly focused on satisfying the needs of customers. During the COVID-19 pandemic, many patients have anxiety when going to hospitals for medical treatment. The pressures brought by the pandemic have overwhelmed the hospital system in Vietnam. This has caused the quality of service at these hospitals to decrease because they have focused on the goal of preventing the spread of the virus. Therefore, hospitals, especially private hospitals, need many solutions to improve the quality of their services. This study evaluated the impact of these factors on hospital service quality, as well as the influence of customer service quality on patient satisfaction. The survey was conducted from January 2021 to September 2021 and data was collected directly from 539 patients at Van Phuc Hospital 1. The results show that 4 factors affect the service quality of the hospital, as well as the service quality affecting patient satisfaction, in which, the strongest impact on the service quality of the hospital is the service attitude and professional capacity of the medical team. In the context of the COVID-19 epidemic, this study implies that if the hospital service is good, the customers' peace of mind and satisfaction will be enhanced.

Keywords: Hospital, Service Quality, Patients Satisfaction, Service Attitude

JEL Classification Code: M30, M31, M37

1. Introduction

Due to the primary mechanical elements, Binh Duong is one of the active economic regions with high population expansion. People face numerous complicated socioeconomic issues as a result of unrestricted movement, including housing, employment, clean water, sanitation, and health care. Infectious diseases that produce epidemics, such as dengue fever, hand, foot, and mouth disease (HFMD), and measles, grow unpredictably, with the presence of COVID-19 signaling the possibility of a substantial increase in the number of patients in the near future.

The tasks of increasing the quality of medical examination and treatment are prioritized by the Binh Duong Department of Health, with a focus on organizing communication skills training for medical personnel. performing social work responsibilities in the hospital: customer service; medical clothing requirements; keeping the suggestion box up to date; receiving feedback via the hotline; style of construction, customer satisfaction attitude of service.

The Ministry of Health, as well as all public and non-public health facilities, are focused on enhancing the use of information technology and reforming administrative procedures in medical examination and treatment, as well as improving the quality of medical examination and treatment. The Ministry of Health has adopted a number of initiatives in recent years to improve the quality of medical examinations and treatment.

The hospital's management board and each member of the medical staff are committed to enhancing the quality of medical examination and treatment services to keep customers happy and safe while achieving the best possible treatment outcomes, especially during the COVID-19 pandemic. Because excellent, fair, and equitable health services remain a long way from everyone's aspirations

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(Andriani, 2017; Shieh et al., 2010), considerable efforts to accomplish aspirational medical goals are required.

2. Literature Review and Research Model

2.1. Literature Review

2.1.1. Perceived Service Quality

Service quality, according to Lehtinen and Lehtinen (1982), must be reviewed and judged on two aspects: the service delivery process and the service delivery results. Service quality, according to Parasuraman et al. (1985), is defined as providing outstanding service and exceeding client expectations. According to Tabash et al. (2019), good service has a positive impact on customer satisfaction.

The SERVQUAL model is built on Gap 5 (perception gap) which is the difference between internal perceptions and customers' expectations about services (Zeithaml et al., 1990). Thus, service quality is all that is shown in the process of customers using and feeling the service that the business provides; brings benefits and satisfies customers' expectations. Each customer, perceives and has different needs, so their perception of service quality is also different.

2.1.2. Perceived Service Quality in Hospital

Understanding consumers in a competitive healthcare market is essential. The improvements in the health care system can reduce patient mortality. It is necessary to meet the needs of patients in a good health care environment to improve the quality of hospital services. Service quality at the hospital is an intangible product (Nguyen & Nguyen, 2020). At the same time, the service quality of the hospital will also affect the image of the hospital (Kalaja et al., 2016). SERVQUAL is still a popular scale used to assess service quality (Ramsaran-Fowdar, 2005), especially in the medical field. When service quality is improved, customer satisfaction is also enhanced.

2.1.3. The Patient Guide

The activities to improve the quality of hospital services include continuously improving the medical examination and treatment process, as well as enhancing the activities of providing information, guiding, and instructing patients, such as: Arrange instructions, customer care staff to welcome, guide, explain, and advise customers on the medical examination process, hospital admission and discharge paper, and so on (Akob et al., 2021; Pham et al., 2020).

H1: The patient guide positively affects hospital service quality.

2.1.4. Infrastructure

Infrastructure has a role in the accessibility of service procedures, which affects patients' demands and expectations (Pham et al., 2020). Medical facilities and equipment must be frequently maintained and cleaned to provide patients with a positive experience and extend the life of the equipment and facilities.

H2: Infrastructure positively affects hospital service quality.

2.1.5. Professional Capacity

Patients expect to be cured when they visit the hospital. They will be satisfied if they are surrounded by a team of doctors that are well-versed in their field. The doctor's reputation is very important, according to the SERVQUAL model (Ramsaran-Fowdar, 2005). Patient satisfaction is determined by the doctors' ability to treat them. The professional capability of the medical personnel, nurses, and service workers is related to the hospital's service quality. Customers are satisfied when they receive clear advice/ guidance and consistent follow-up, as well as when their situation is well stated.

H3: Professional capacity positively affects hospital service quality.

2.1.6. Service Attitude

According to Tran (2020), service attitude is also a crucial determining element. Managers should operate an efficient customer service staff that responds to inquiries quickly and thoroughly. A happy, warm, friendly voice should be used at the contact center to handle customer support. Customer satisfaction and service quality will both improve as a result of this.

Pham et al. (2020) suggested that it is necessary to raise the awareness of each hospital staff about their duties and responsibilities at work, associated with the mission of the hospital. It is very necessary to attach their rights and responsibilities to hospital quality management. Ramsaran-Fowdar (2005) has pointed that the doctor's attitude such as welcoming, kind, reassuring, polite, not yelling at the patient is expected by the patient. showed that the good service attitude of the medical staff is the main reason for the patient's choice of medical services. Good service attitude leads to better-perceived service quality and is also the main cause of high satisfaction and higher willingness to pay of patients (Yousapronpaiboon, 2014).

H4: Service attitude positively affects hospital service quality.

2.1.7. Patient Satisfaction

While many approaches to assessing patient satisfaction focus on hospital service quality, some do not. In emerging countries like Vietnam, buyers of health services are becoming more demanding. Patient satisfaction can also be used to help hospitals compete and grow their market share. Satisfaction can improve a patient's quality of life, resulting in increased mental well-being and faster healing. Customer satisfaction is one of the expected outcomes of healthcare, and it is linked to the quality of medical services.

Service quality is a factor that greatly affects customer satisfaction. Service quality and customer satisfaction are closely related, in which service quality is the first thing that determines customer satisfaction. In other words, service quality is an antecedent of satisfaction, so service quality should not be measured without assessing customer satisfaction (Shafii et al., 2016).

According to Lafferty and Colgate (2001), satisfaction is the process of customer comments and evaluations about a product or service that this product or service meets their needs and expectations or not. This view is consistent with Kotler et al. (1996), who stated that satisfaction is a person's positive feeling derived from comparing the results obtained from the product with the person's expectations. Customer satisfaction is the result of this comparison and there will be 3 cases: the customer's expectation is confirmed if the performance of that service completely matches the customer's expectation; frustrated if service performance does not match customer expectations; satisfied if what they have felt and experienced after using the service exceeds what they expected and expected before buying.

H5: Hospital service quality positively affects patient satisfaction.

2.2. Research Model

Based on the SERVQUAL scale and inherited and adjusted from previous studies combined with qualitative research, the author proposes a research model as follows (Figure 1):

3. Research Methods

The method used to select survey subjects is determined by the type of patient. Customers undergoing hospital treatment (in-patients): Obtain a list of statistics regarding in-patients at the hospital. Out-patients (customers who visit the hospital for medical examination and treatment): If the patient does not buy medicine, the survey will be conducted after the patient completes the pre-discharge examination process.

For measuring variables exploited in the research, Likert 5 has been applied in which 1 refers to Very disagree up to 5 refers to Very agree. Research scales are adopted and modified from previous studies, then translated to Vietnamese to be understandable for survey participants. In which, the patient guide (GUIDE) inherited from the study Psham et al. (2020) and the request of the Ministry of Health (2016) with 6 items. The infrastructure (INFRAC) was applied from Shafii et al (2016) with 4 items. Professional Capacity (CAPAC) has 4 items modified from Vo and Tran (2019) and Shafii et al (2016). Service attitude (ATTI) is inherited from Ahenkan and Aduo-Adjei (2017) and Shafii et al. (2016). Hospital service quality (PSQ) with 3 items and Patient Satisfaction (SAT) with 3 items.

Quantitative research was used in this study to assess the hypotheses. First, the reliability of the scale is evaluated through Cronbach's α, along with the convergent validity and discriminant validity assessment. Next, the SEM linear structural model will be evaluated to test the research hypotheses and the influence of the factors.

In the reliability analysis, Cronbach's α and composite reliability (CR) must be between 0.7 and 0.95 to assess the quality of the scale. After that, the study will be proved by a number of suitable indicators: $\chi^2 / Df \leqq 5.0$ (Bagozzi & Yi, 1988), RSMEA less than 0.08 (Hu & Bentler, 1999); CFI $\geqq 0.90$ and TLI $\geqq 0.90$ (Bagozzi & Yi, 1988); GFI must be greater than 0.90 (Bagozzi & Yi, 2012); NFI $\geqq 0.90$ (Hu & Bentler, 1999).
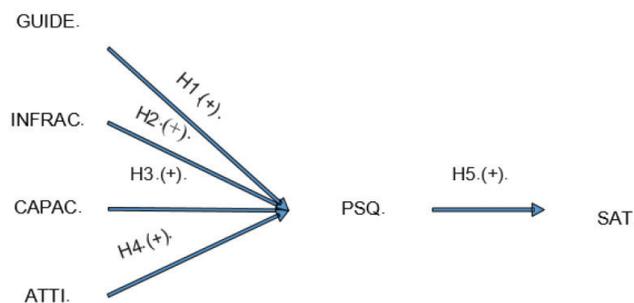

Figure 1: Conceptual Model

Table 1: Exploratory Factor Analysis of Variables

Code	Factor						α	Corrected Item-Total Correlation	α if Item Deleted
	1	**2**	**3**	**4**	**5**	**6**			
GUIDE3	0.824						0.915	0.769	0.899
GUIDE1	0.815							0.768	0.899
GUIDE2	0.809							0.768	0.899
GUIDE4	0.799							0.767	0.899
GUIDE6	0.777							0.738	0.903
GUIDE5	0.773							0.759	0.900
CAPAC2		0.868					0.896	0.774	0.865
CAPAC1		0.860						0.803	0.854
CAPAC3		0.855						0.792	0.858
CAPAC4		0.710						0.711	0.887
ATTI3			0.875					0.784	0.881
ATTI2			0.825				0.906	0.788	0.879
ATTI1			0.821					0.804	0.874
ATTI4			0.765					0.783	0.882
INFRAC3				0.882				0.690	0.816
INFRAC4				0.775			0.845	0.634	0.827
INFRAC2				0.740				0.715	0.795
INFRAC1				0.670				0.748	0.774
SAT1					0.877			0.734	0.668
SAT2					0.830		0.813	0.675	0.731
SAT3					0.558			0.586	0.818
PSQ2						0.910		0.577	0.849
PSQ3						0.739	0.822	0.751	0.677
PSQ1						0.604		0.710	0.720
KMO	0.911				Bartlett's Test			Appro.Chi-Square	8229.358
								Df	276
								Sig	0.000

Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization. ªRotation converged in 6 iterations.

4. Results and Discussion

4.1. Demographic Characteristics of the Respondents

According to the demographic structure and characteristics, females made up 52.3 percent of the respondents, according to the demographic structure and features of the 539 observations. The age group between 18 and under 40 had the highest rate of 50.1 percent, followed by the age group between 40 and under 60, which had 30.6 percent. The number of people who have health insurance is at an all-time high of 84 percent. Old clients who have visited the hospital account for 81.1 percent of the respondents, and 82 percent of the respondents live in Binh Duong.

4.2. Exploratory Factor Analysis

A total of 539 valid questionnaires with 24 observed variables representing 6 scales were analyzed by EFA.
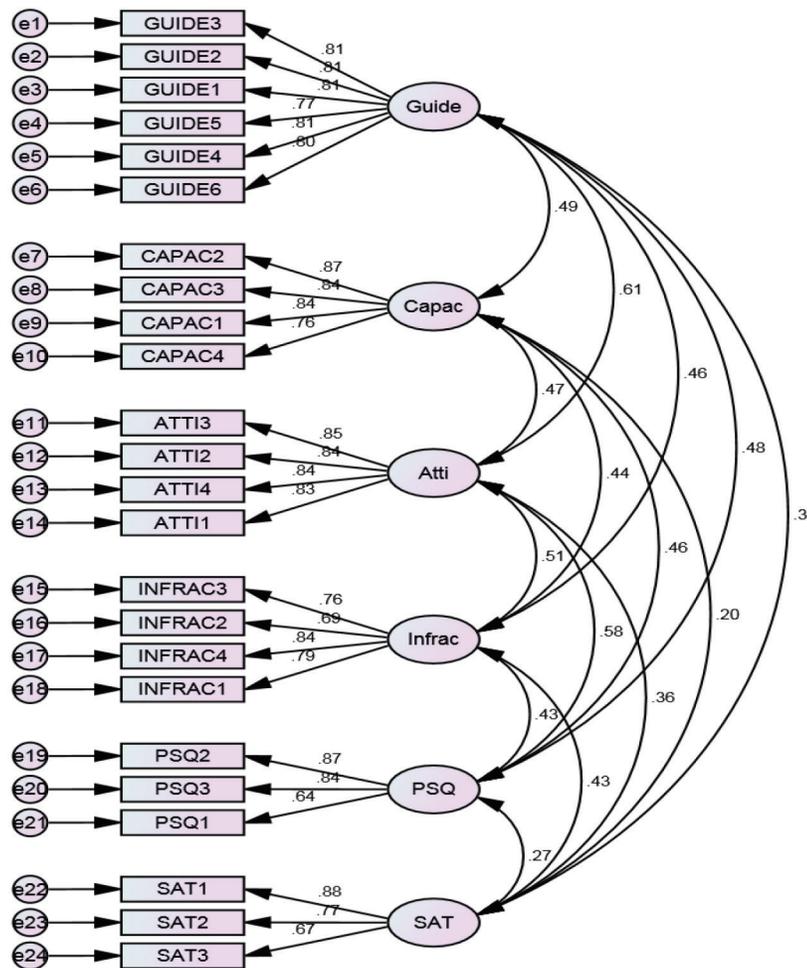
Figure 2: CFA Result for the Full Measurement Model

EFA is assessed as suitable when satisfying conditions such as $0.5 \leq$ Kaiser–Meyer–Olkin (KMO) value ≤ 1 and sig < 0.05. The KMO must be at least 0.5 or higher to be eligible for the analysis, and the closer the KMO value is to 1, the more suitable the factor analysis. The results from the EFA analysis are shown in Table 1, where the Eigenvalue is greater than 1 and the total variance extracted is 74.338%. With KMO = 0.911 and Sig = 0.000 and based on Bartlett test criteria, it can be said that the use of EFA in this study is appropriate.

4.3. Confirmatory Factor Analysis

The analysis has the following values: Chi-square = 698,463; df = 237; P = 0.000; Chi-square/df = 2.947; TLI = 0.934 > 0.9; CFI = 0.943 > 0.9; NFI = 0.917 > 0.9. The results shown in Figure 2 confirm the converging value

of the components in customer satisfaction and service quality. Figure 2 shows that the component concepts achieve discriminant validity at the 95% confidence level. The results show that the concepts and scales of these concepts achieve unidirectionality, convergent validity, discriminant validity and achieve the reliability of the scale. All concepts of the research model fit the actual data and achieve the above-mentioned values.

4.4. Structural Equation Modeling

The SEM results show that the estimated matrix achieves the compatibility with the actual data, through the Chi-square index = 767,975 (p = 000 <.05), GFI = 0.966, TLI = 0.925, CFI = 0.935. greater than 0.9, RMSEA = 0.064 < 0.08. The scales have been evaluated and the results are consistent

with the theoretical model of this study. This section will perform a formal theoretical model test along with the hypotheses testing for the concepts in SEM (Figure 3).

All the correlations and relationships stated in the hypothesis of the research model are proved by testing the SEM model. The estimated results (standardized) of the main parameters are presented in the table. These results show that these causal relationships are all statistically significant because they all have p-values < 0.05, so the hypotheses H1, H2, H3, H4, H5 are all accepted. In addition, through this

result, it is concluded that the measurement scales of the concepts in the model are valid.

Table 2 shows that the correlation coefficients of each pair of different concepts are at a 95% confidence level because all P-values are <0.05. According to Tran (2020) and Pham et al., among these, service attitude has the strongest impact on hospital service quality (2020). The professional capacity of medical staff, nurses, and service employees is the second most influential element. This is especially true in the case of the COVID-19 epidemic, where the medical team's
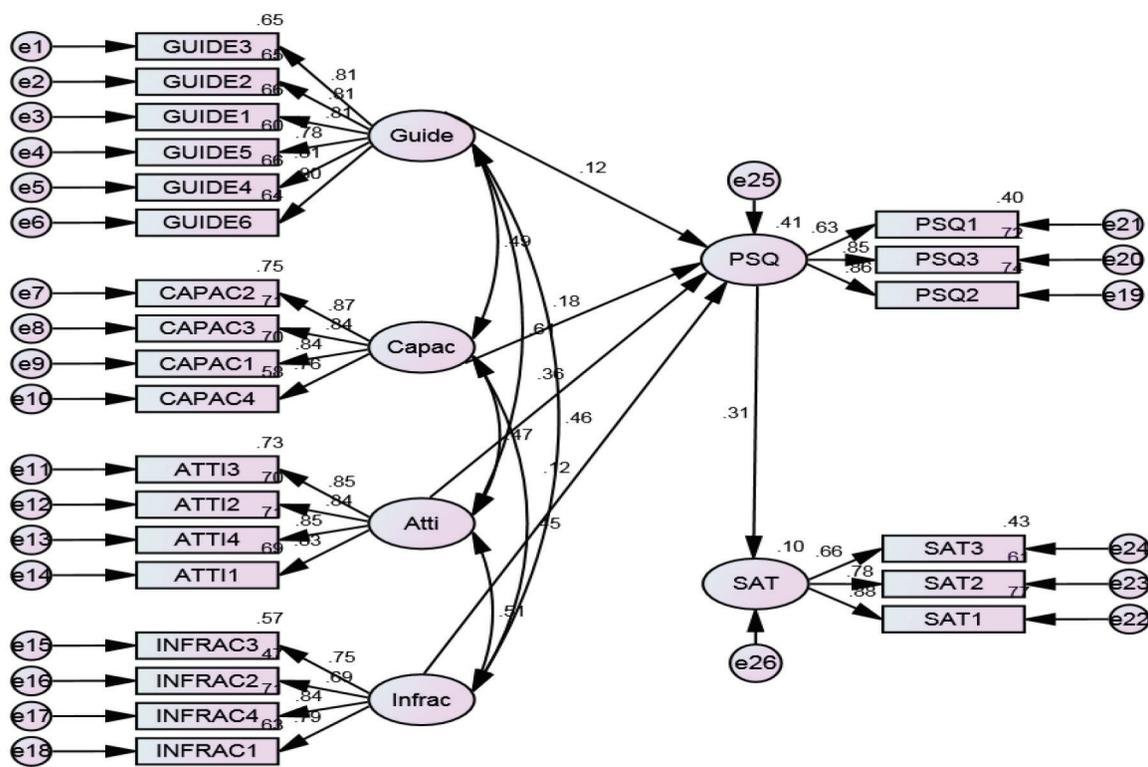

Figure 3: SEM Results for the Theoretical Model (Standardized Estimates)

Table 2: Summary of Direct Hypothesis Testing Results

Structural Relationships	Estimate	S.E.	C.R.	P	Hypothesis test
PSQ ← Guide	0.124	0.056	2.222	0.026	H1: supported
PSQ ← Infrac	0.155	0.065	2.376	0.018	H2: supported
PSQ ← Capac	0.182	0.050	3.629	***	H3: supported
PSQ ← Atti	0.358	0.058	6.203	***	H4: supported
SAT ← PSQ	0.313	0.050	6.296	***	H5: supported

professional capacity and service attitude have a significant impact on service quality and patient happiness.

5. Conclusion

According to the research results above, it is necessary to promote the activities of the Customer Care department. Not only the customer care staffs but also the entire hospital staff know how to guide customers to come to the hospital for medical examination and treatment. Applying information technology to guide patients in detail on treatment adherence, drug use instructions (dose, usage, other information...) while continuing to develop and perfect the message system which automatically reminds customers to come for regular and on-time check-ups. Especially during the COVID-19 pandemic, the application of digital technology is essential.

Although the study was carried out with the best efforts of the authors, limitations are unavoidable. The internal factors were considered in this study, but social factors affecting patient satisfaction were ignored due to time constraints and because there is a time of separation due to the pandemic. Further studies need to be expanded with advanced survey methods and a longer period to be able to analyze the factors affecting hospital service quality and patient satisfaction.

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Appendix: Constructs Measurement

Code	Guide the Patient	Source
GUIDE1	Patients are given clear instructions, welcome and specific instructions that are easy to see and easy to find	Pham et al. (2020)
GUIDE2	Patients are waited in a fully furnished room and transported by their medical condition	
GUIDE3	The hospital has scientific and convenient medical examination and examination procedures and procedures to meet patient satisfaction	
GUIDE4	The hospital ensures timely emergency treatment for patients	
GUIDE5	Patients can do procedures, medical examination, payment... in the correct order to ensure fairness and priority	
GUIDE6	Patients are guided and arranged for testing, imaging, and functional exploration in a convenient sequence	
	Infrastructure	**Source**
INFRAC1	Waiting chairs/patient beds are provided in the inpatient examination/ treatment area	Shafii et al. (2016)
INFRAC 2	The toilet is convenient, good to use, and clean	
INFRAC 3	Patients are provided with adequate, clean, and good quality personal items	
INFRAC 4	People with disabilities can easily access the departments/rooms, facilities, and services of medical examination and treatment in the hospital	
	Professional Capacity	**Source**
CAPAC1	The doctor asks the patient and examines the patient with the right focus	Vo and Tran (2019) Shafii et al. (2016)
CAPAC 2	Doctors and nurses guide the implementation of professional procedures for diagnosis and treatment at the clinic/clinic clearly and specifically	
CAPAC 3	Be explained about the disease condition, treatment method, updated information on drug use, and expected time of treatment clearly and fully.	
CAPAC4	After being treated, you have felt that the disease has decreased, the treatment plan is effective	
	Service Attitude	**Source**
ATT1	Doctors and nurses have proper words, attitudes, and communication	Ahenkan and Aduo-Adjei (2017); Shafii et al. (2016)
ATT 2	Cashier staff, drug delivery staff, guide staff, customer care staff have words, attitudes, and proper communication	
ATT3	Orderly, security guards, car keepers, cleaning staff have proper words, attitudes, and communication	
ATT4	Be treated fairly, care and help	
	Service Quality	**Source**
PSQ1	Results of medical examination/treatment have met expectations	Shafii et al. (2016)
PSQ2	Satisfied and confident with the service quality at the hospital	
PSQ3	If there is a need for medical examination, the willingness to return or refer the hospital to others	

	Patient Satisfaction	**Source**
SAT1	I am satisfied with the hospital's service	Ahenkan and Aduo-Adjei (2017)
SAT2	I will continue to receive treatment at this hospital	
SAT3	This hospital has a service that meets my requirements	