"Sustainable business development of private hospitals in Vietnam: Determinants of patient satisfaction, patient loyalty and revisit intention"

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SUSTAINABLE BUSINESS DEVELOPMENT OF PRIVATE HOSPITALS IN VIETNAM: DETERMINANTS OF PATIENT SATISFACTION, PATIENT LOYALTY AND REVISIT INTENTION

Abstract

The role of private hospitals is increasingly important in Vietnam. The study aims to determine associations between service quality and hospital brand image with satisfaction and patient loyalty, revisit intention at private hospitals in Vietnam. Quantitative cross-sectional data were collected from 268 patients in DaNang city, Vietnam. Scales to measure hospital service quality, hospital brand image, patient satisfaction, loyalty, and patient revisit intention were developed. The methods used to test the hypotheses of the study include exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modeling (SEM). One notable finding in this study provides practical evidence on the relationship of hospital service quality and hospital brand image with patient satisfaction and loyalty. In addition, service quality has a direct influence on patient satisfaction and revisit intention as the indicator of patient loyalty. Meanwhile, hospital brand image has a direct influence on patient loyalty, although it did not influence patient satisfaction. Results of this study help providing the basis for the marketing and customer care programs of private hospitals in DaNang city, Vietnam.

Keywords	hospital service quality, hospital brand image, patient loyalty, patient satisfaction, revisit intention, private hospital
JEL Classification	M10, M31, Q01, I11

INTRODUCTION

The healthcare sector in the market economy is witnessing competition among hospitals in attracting patients to use medical services at these hospitals. The patient-centered philosophy requires hospital managers and leaders to have appropriate strategies in attracting new customers, as well as ensuring patient satisfaction and loyalty, thereby ensuring business success. Previous studies have shown that loyal customers tended to pay more when using medical services, as well as having less resistance with the service delivery process (Evanschitzky et al., 2012). The cost to retain the patient was also significantly less than the cost to attract new patients. However, characteristic of the healthcare field is that most patients only visit the hospital when they have a desire to have their illness diagnosed and treated, and they mostly have no desire to return hospital if not for their illness (Liu et al., 2021). This has created great challenges in maintaining the loyalty of patients. Studies investigating factors related to patient satisfaction and loyalty have been performed around the world (Al-Damen, 2017; Aliman & Mohamad, 2016; Bentum-Micah et al., 2020; Nguyen & Nguyen, 2014; Juhana et al., 2015; Liu et al., 2021; Wu, 2011; Yesilada

& Direktör, 2010; Zarei et al., 2012; Zarei et al., 2015). These studies play an important role in deciding the right marketing strategy for each hospital. Several previous studies have shown the important role of factors such as hospital brand image and service quality in patient satisfaction and loyalty (Aliman & Mohamad, 2016; Ware et al., 1978). However, in each country and each sector, the degree of influence of these factors is different. Therefore, understanding the relationships between these factors is necessary to support the efforts of hospitals in improving the performance of their service delivery.

Vietnam is one of the countries with fast economic growth, leading to a rapid increase in people's demand for high-quality healthcare. It is estimated that the healthcare market in Vietnam reached 19.9 billion USD in 2020 and is expected to reach 22.7 billion USD in 2021 with an annual growth rate of 12.5% (Spire Research & Consulting Pte Ltd, 2020). However, the healthcare market in Vietnam is mainly dominated by public hospitals, while the private sector accounts for only a small proportion with an estimated total market of USD 8.7 billion by 2020 (Spire Research & Consulting Pte Ltd, 2020). According to the report of the Ministry of Health, in 2019, the total number of private hospitals increased from 102 hospitals (2010) to 231 hospitals with approximately 16,000 beds, accounting for 19.4% of the total number of hospitals in Vietnam (Vietnam Ministry of Health, 2019). Currently, private hospitals have advantages over public hospitals in making quick decisions and optimizing resources, as well as the ability to deploy extensive marketing activities and medical services which public hospitals do not have the financial and administrative capacities to perform (Nguyen & Wilson, 2017). However, some studies have revealed significant disparities in the service quality provided by public hospitals and private hospitals (Nguyen & Nguyen, 2014; Tran et al., 2005). In addition, the Vietnamese government is promoting the autonomy of public hospitals in terms of administrative and financial aspects (London, 2013). This could diminish the existing advantages of private hospitals and increase competitiveness among hospitals. Therefore, determining the factors affecting patient loyalty is a key for the survival and sustainable development of private hospitals. Currently, no studies have been conducted to evaluate the factors related to patient loyalty and revisit intention in Vietnam. Therefore, this study aims to identify some associated factors, namely hospital service quality and hospital brand image, with patient satisfaction, patient loyalty, and revisit intention at private hospitals in DaNang city, Vietnam.

1. LITERATURE REVIEW

1.1. Definitions

Hospital brand image is defined as an intangible asset of the hospital, formed from the quality that patients perceive and the value of the hospital, in other words, the impression of patients and customers about the hospital (Yagci et al., 2009). Hospital brand is a factor that helps to ensure the sustainable development of the hospital, as well as the uniqueness of the hospital in the perception of patients (Roberts & Dowling, 2002). A positive hospital image helps to position the hospital brand in the market, demonstrating patient trust in the hospital (Kim et al., 2008a). However, the hospital brand image always changes depending on the patient's perception and experience. Therefore, a good hospital brand image promotes the patient choice of hospital services.

Service quality is widely recognized as one of the key factors affecting the business performance and outcomes of service organizations (Liu & Tsai, 2010; Mei-Liang & Kuang-Jung, 2013). Service quality refers to the customer or patient assessment of the actual service compared to their expectations (Bitner et al., 1991; Parasuraman et al., 1988; Zeithaml, 1988). In fact, before using a service, patients will have expectations about what they will get when they use that service, then they compare this expectation with the actual service they receive (Wu, 2011). Service has quality when it ensures to meet the patient's expectations (Lytle & Mokwa, 1992).

Patient satisfaction refers to the patient attitude during the whole process of using healthcare services, including before, during, and after utilization (Kim et al., 2008b). Patient satisfaction is also related to whether the service meets the patient's expectations. It is an important metric in monitoring and evaluating hospital performance,

which is used by healthcare facility leaders in their decision-making processes. Patient satisfaction is related to the doctor-patient relationship and affects the treatment process and the re-visit of the patients (Hekkert et al., 2009).

Loyalty is defined as a deeply held commitment to rebuy or patronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior (Oliver, 1999). Due to the distinguishing characteristics of the healthcare industry from other service industries as mentioned above, theories regarding customer loyalty to other services may not be applicable in the healthcare field (Liu et al., 2021; Sheth & Park, 1974). In this study, the information that will be collected from patients will help determine their perception of patient loyalty, thereby building tools and scales to measure patient loyalty. In addition, the study results also help to provide evidence on the mechanisms of patient loyalty formation, which will assist hospitals in developing effective marketing strategies and business models.

Revisit intention is considered as an aspect of loyalty and several previous studies in the healthcare sector have shown a strong association between behavioral intentions and the actual behavior of this concept. Evaluation of revisit intention is also a metric used to determine patient loyalty (Boshoff & Gray, 2004; Kim et al., 2008b).

1.2. Effect of hospital service quality on satisfaction and revisit intention of patients

In several previous studies, hospital service quality has a positive relationship with patient satisfaction and it depended on hospital characteristics such as facilities, equipment, professional qualifications of medical staff, and administrative procedures (Aliman & Mohamad, 2016; Ware et al., 1978). Kim et al. (2008b) conducted a study showing the relationship between these factors and patient satisfaction and this relationship applied in both public and private hospitals (Yesilada & Direktör, 2010). In addition, there have been many studies conducted showing that hospital service quality had a positive impact on patient loyalty. High

hospital service quality increases the likelihood of revisit as an indicator of patient loyalty (Boulding et al., 1993; Cronin et al., 2000). Hospital service quality can affect patient intention to revisit directly, or impact indirectly through patient satisfaction (Wu, 2011; Wu et al., 2008).

1.3. Effect of hospital brand image on satisfaction and loyalty of patients

In other industries, some studies showed that brand image was not associated with customer satisfaction and loyalty (Davies & Chun, 2002; Hoq et al., 2012). However, in the healthcare sector, the majority of studies showed that the hospital brand image of the preferred service provider had a positive effect on patient satisfaction (Aliman & Mohamad, 2016; Wu, 2011). Therefore, a good hospital brand image can increase patient satisfaction. In addition, previous studies showed that hospital brand image had a positive effect on patient loyalty directly or indirectly through patient satisfaction (Aliman & Mohamad, 2016; Da Silva & Syed Alwi, 2008; Davies & Chun, 2002; Wu, 2011).

1.4. Effect of satisfaction on loyalty and patient revisit intention

In previous studies, customer satisfaction was considered an important predictor of loyalty with organizations. Many studies in the healthcare sector also show the same thing. Kim et al. (2008b) showed that patient satisfaction also had a positive impact on their intention to revisit. At the same time, patients often express their satisfaction through the evaluation of the hospital service (Bendall-Lyon & Powers, 2004); hence, patients having satisfaction with the service were more likely to reuse that service.

1.5. The relationship between hospital service quality and facilities, staff, price, and medical examination and treatment process

Previous studies have mentioned that the factors related to service quality are composed of two visible components (such as facilities, human resourc-

es, equipment, administrative processes, etc.) and invisible (such as responsiveness, transparency, empathy, etc.) (Parasuraman et al., 1988; Zaim et al., 2013). In particular, visible components play an important role when these are the factors that the patient feels and observes immediately upon arrival at the hospital.

2. AIM

This study was conducted to measure patient evaluation of the relationship between hospital service quality, hospital brand image, patient satisfaction, patient loyalty, and revisit intention at private hospitals in DaNang city, Vietnam.

3. HYPOTHESES AND RESEARCH MODEL

Based on the content of the literature review, the study proposes ten research hypotheses as follows:

H1: *Service quality at private hospitals has a positive impact on patient satisfaction.*

H2: *Service quality at private hospitals has a positive impact on patient revisit intention.*

H3: *Hospital brand image has a positive impact on patient loyalty.*

H4: *Hospital brand image has a positive impact on patient satisfaction.*

H5: *Patient satisfaction has a positive impact on patient loyalty.*

H6: *Patient loyalty has a positive impact on patient revisit intention.*

H7a: *Service quality at private hospitals has a positive relationship with facilities.*

H7b: *Service quality at private hospitals has a positive relationship with human resources.*

H7c: *Service quality at private hospitals has a positive relationship with the reasonableness and transparency of service prices.*

H7d: *Service quality at private hospitals has a positive relationship with the medical examination and treatment process.*

Synthesized from many previously published studies, the model used for this study is proposed in Figure 1.

4. DATA AND RESEARCH METHODOLOGY

4.1. Sampling and scale of research

A typical survey was conducted in DaNang, a tourist city in Vietnam. The city's health system includes 86 medical facilities, with 7 private hospitals and 1,223 beds. The data collection period was
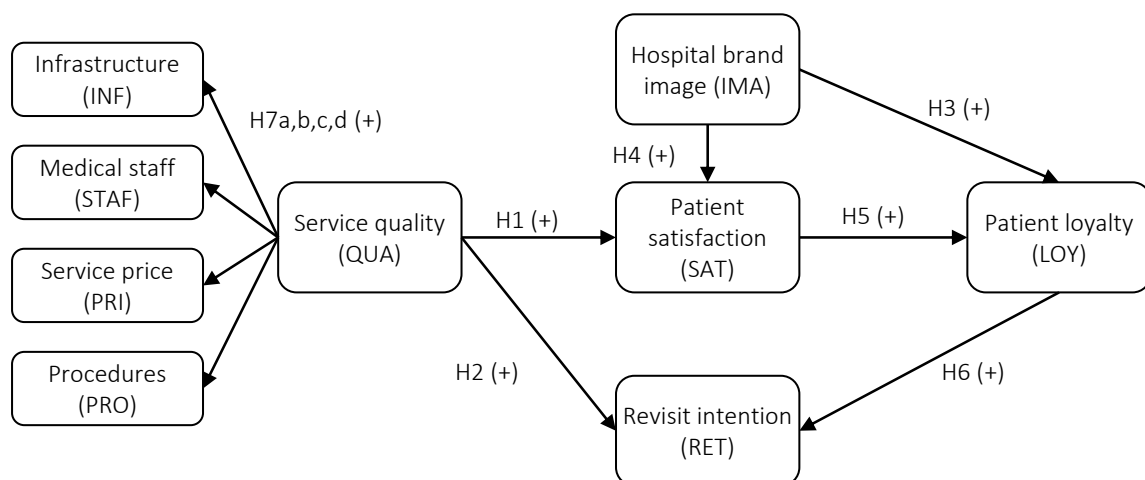

Figure 1. Conceptual model

from January to March 2020. Criteria for selecting survey participants included individuals who were undergoing inpatient or outpatient treatment at private hospitals and all of them agreed to participate at the time of the survey. Regarding the study sample size, the minimum sample size for exploratory factor analysis (EFA) should be 5 times higher than the total number of observed variables in the questionnaire (Hair et al., 2006). Therefore, the questionnaire in this study has 35 observations so the sample size must be larger than 175 (35 variables x 5 = 175). 300 survey questionnaires were sent to the Customer Care Department at the hospitals and through the role of the staff to conduct the survey. A total of 268 complete questionnaires were selected for analysis. This sample size is within the appropriate sample size range compared to other studies in the world (Alhashem et al., 2011; Aliman & Mohamad, 2016; Ariffin & Aziz, 2008; Badri et al., 2009).

The structured questionnaire was built including two main parts. The first part of the questionnaire presented questions regarding patient demographics and the second part included questions measuring the variables in the proposed theoretical research model. The questions in the scale were formed based on previous studies (Al-Damen, 2017; Bentum-Micah et al., 2020; Boshoff & Gray,

2004; Coutinho et al., 2019; Juhana et al., 2015; Oliver, 1999; Zarei et al., 2012; Zarei et al., 2015) as well as supplementing questions to suit the actual context of the study site. All questions in the study used a Likert scale with five points ranging from low (1 = strongly disagree) to high (5 = strongly agree). The scale development was done through in-depth interviews with experts in the healthcare sector. Accordingly, the scale of this study included questions to measure the quality of medical examination and treatment services (QUA): facilities of private hospitals (INF) with 5 items; medical staff (STAF) with 4 items; price of medical examination and treatment services (PRI) with 4 items; medical examination and treatment procedures (PRO) with 5 items; patient satisfaction (SAT) with 4 items, patient loyalty (LOY) with 4 items, hospital brand image (IMA) with 5 items, and revisit intention (RET) with 4 entries (Table 1).

4.2. Statistical analysis

Cronbach's alpha test is used to measure the reliability of observations in each research scale. The scale is acceptable when the Cronbach's alpha coefficient of the scale is greater than 0.6 and the corrected item-total correlation is greater than 0.3 (Peterson, 1994). EFA was then performed on all items on the scale. In the EFA analysis, KMO

Table 1. Questionnaire items

Source: Developed by the authors.

Constructs	Items of the questionnaire	Indicators	References
Infrastructure (INF)	The hospital campus and environment are guaranteed to be green, clean, and beautiful	CSVC1	Zarei et al. (2012), Al-Damen (2017)
	Waiting rooms for family members and patients are in good condition	CSVC2	Al-Damen (2017)
	The equipment in the ward is complete and convenient, modern	CSVC3	Al-Damen (2017)
	Equipment used for medical examination and treatment is complete and modern	CSVC4	Al-Damen (2017)
	The system of toilets and bathrooms in the hospital is clean	CSVC5	Al-Damen (2017)
Staff (STAF)	The team of doctors, nurses, nurses, and medical staff is polite and friendly to patients and family members	DNGU1	Al-Damen (2017)
	The team of doctors, nurses, nurses, and medical staff strictly complies with regulations and protective clothing, neat, clean, and beautiful	DNGU2	Bentum-Micah et al. (2020)
	A team of doctors, nurses, nurses, and medical staff is with professional competence in the examination, treatment, and patient service	DNGU3	Zarei et al. (2012)
	Team of doctors, nurses, nurses, and medical staff who listen and care about each patient	DNGU4	Al-Damen (2017)
Fees of medical services (PRI)	Reasonable medical examination and treatment costs and drug costs	PHI1	Boshoff and Gray (2004)
	Invoices, receipts, prescriptions, and medical examination results are provided fully, clearly, transparently and explained if there are any questions	PHI2	Developed by the authors
	Patients are entitled to priority regimes, medical insurance payment following the regime	PHI3	Developed by the authors
	The price list of medical examination and treatment services is clearly posted, publicly available, and provided to patients and family members	PHI4	Developed by the authors

Table 1 (cont.). Questionnaire items

Constructs	Items of the questionnaire	Indicators	References
Procedures (PRO)	The medical examination and treatment process is clearly posted, public, easy to understand, and is guided enthusiastically by medical staff	PRO1	Developed by the authors
	The hospital has a good process for responding to patient and family comments	PRO2	Al-Damen (2017)
	Medical staff guide how to take the drug, what issues to monitor, and pay attention to while taking the drug	PRO3	Developed by the authors
	The hospital adheres to the appointment schedule and time of examination, medication distribution, and counseling to meet the expectations of patients and their families	PRO4	Bentum-Micah et al. (2020)
	The hospital performs services and processes such as registration, payment, medical examination, testing, screening, admission, and discharge during examination and treatment correctly from the beginning	PRO5	Al-Damen (2017)
Patient satisfaction (SAT)	I made the right decision for choosing this hospital for medical examination and treatment	SHL1	Zarei et al. (2015)
	I am satisfied and happy about the hospital medical examination and treatment	SHL2	Zarei et al. (2015), Juhana et al. (2015)
	I am satisfied with the medical examination and treatment process and staff at the hospital	SHL3	Coutinho et al. (2019)
	I am satisfied with all the services the hospital provides	SHL4	Coutinho et al. (2019)
Hospitals image (IMA)	Hospital facilities are visually appealing and impressive	HANH1	Bentum-Micah et al. (2020)
	I am treated fairly and devotedly regardless of family background, medical history, insurance policy	HANH2	Developed by the authors
	The hospital is a reliable address for treatment and medical examination	HANH3	Coutinho et al. (2019)
	The hospital reputation is recognized and everyone's opinion of the hospital is positive	HANH4	Juhana et al. (2015)
	There are no complaints, lawsuits, and seriously negative images and events from medical examination and treatment	HANH5	Kim et al. (2008a)
Buying intentions (RET)	I will perform periodic follow-up examinations as prescribed by the doctor	TKHAM1	Developed by the authors
	I will remain in touch and create close relationships with the hospital's doctors, nurses, and medical staff	TKHAM2	Developed by the authors
	When I have health problems, I will immediately contact the hospital	TKHAM3	Developed by the authors
	I will continue to use medical examination and treatment services at the hospital shortly	TKHAM4	Mortazavi et al. (2009)
Patients loyalty (LOY)	I will recommend the hospital medical examination and treatment services to relatives and friends	TTHANH1	Badri et al. (2009)
	I believe in the quality of medical examination and medical services at the hospital	TTHANH2	Oliver (1999), Juhana et al. (2015)
	I consider the team of doctors, nurses, and medical staff at the hospital as my family	TTHANH3	Developed by the authors
	I will refuse when offered medical examination and treatment at another hospital	TTHANH4	Juhana et al. (2015), Oliver (1999)

and Bartlett's test were performed, average variance extracted (AVE) with significance values are less than or equal to 0.05. If AVE values are > 50%, eigenvalues are > 1, and the factor loading is > 0.55 (Hair et al., 2006). Confirmatory factor analysis (CFA) and structural equation modeling (SEM) techniques were used in this study to determine the indicators. Based on these indicators the degree of fit between the hypothetical model and the actual collected data was assessed. The model is suitable if and only if the indicators satisfy the following: Chi-square/df < 2, Comparative fit index (CFI) > 0.9, Tucker–Lewis index (TLI) > 0.9, Root mean square error of approximation (RMSEA) < 0.08 (Hair et al., 2006; Schumacker & Lomax, 2004). The significance level is p-value < 0.05 (Zarei et al., 2012).

5. RESULTS

Information on patients participating in the survey is presented in Table 2. The majority of patients surveyed were between the ages of 18 and 30

Table 2. Demography of respondents

Source: Developed by the authors.

Particulars	Items	Frequency (n = 268)	Percentage
Age	Under 18 years old	46	17.2%
	From 18 to 30 years old	80	29.9%
	From 31 to 50 years old	70	26.1%
	Over 50 years old	72	26.9%
Sex	Male	113	42.2%
	Female	155	57.8%
Income	Under 5 million VND/month	53	19.8%
	From 5 to under 10 million VND/month	70	26.1%
	From 10 to under 15 million VND/month	112	41.8%
	Over 15 million VND/month	33	12.3%
Education	Under high school	64	23.9%
	High school	70	26.1%
	Colleges and universities	105	39.2%
	Postgraduate studies	29	10.8%
Treatment time	Under 1 month	86	32.1%
	From 1 to under 3 months	81	30.2%
	From 3 to under 6 months	78	29.1%
	Over 6 months	23	8.6%
Type of patients	Inpatient	204	76.1%
	Outpatient	64	23.9%

(29.9%) and over 50 years of age (26.9%). Females accounted for the majority with 57.8%. The percentage of individuals with income from 10 to less than 15 million was the highest with 41.8%. Most of the patients had college and university education (39.2%). The majority of participants were inpatients (76.1%) and had a treatment duration of less than 1 month (32.1%).

5.1. Results of Cronbach's alpha and EFA testing

In Table 3, the Cronbach's alpha coefficient of all independent and dependent variables is > 0.6, suggesting that all variables in the scale have high reliability and could be included in the CFA and SEM analysis.

Table 3. Rotated component matrix and Cronbach's alpha testing

Source: Developed by the authors with SPSS.

Indicators	Component								Cronbach's alpha
	1	2	3	4	5	6	7	8	
CSVC5	.847								
CSVC2	.825								
CSVC4	.825								.907
CSVC3	.822								
CSVC1	.805								
HANH2		.876							
HANH5		.846							
HANH1		.832							.898
HANH3		.831							
HANH4		.760							
QTRINH4			.899						
QTRINH2			.871						
QTRINH1			.830						.896
QTRINH3			.815						
QTRINH5			.684						

Table 3 (cont.). Rotated component matrix and Cronbach's alpha testing

Indicators	Component								Cronbach's alpha
	1	2	3	4	5	6	7	8	
SHL1				.919					
SHL4				.852					
SHL2				.828					.902
SHL3				.816					
DNGU1					.932				
DNGU4					.915				
DNGU3					.759				.896
DNGU2					.738				
TTHANH1						.841			
TTHANH4						.820			
TTHANH3						.793			.928
TTHANH2						.777			
PHI1							.823		
PHI3							.783		
PHI4							.770		.856
PHI2							.695		
TKHAM4								.788	
TKHAM3								.688	
TKHAM2								.685	.834
TKHAM1								.670	

5.2. CFA result

In Table 4, the reliability of factors in the model is suitable via C.R values is > 0.7, the AVE values are > 0.5, meaning that the components in the scale are reliable and have convergent validity. Correlation coefficients among factors are < 0.85, suggesting that components in the scale have discriminative validity.

Table 4. Result of composite reliability and average variance extracted testing

Source: Developed by the authors with AMOS.

Construct	Items	C.R	AVE
Facilities	INF	.977	.896
Medical examination and treatment procedures	PRO	.939	.759
Medical staff	STAF	.878	.754
Service price	PRI	.859	.786
Patient satisfaction	SAT	.938	.792
Hospital image	IMA	.950	.792
Patient loyalty	LOY	.983	.935
Revisit intention	REP	.965	.873

The model had 542 degrees of freedom, and the CFA model had the Chi-squared = 772.715 with p = 0.000; Chi-Square/df = 1.426 (< 2); TLI = 0.962 > 0.9; CFI = 0.966 > 0.9; RMSEA = 0.04 < 0.08; Thus, with the indicators obtained from the results of CFA, the proposed model is consistent with the actual data collected (Figure 2).

5.3. SEM model

The results of the SEM model show that there were 5 concepts in the model: (1) Quality of medical examination and treatment services is measured through four factors: facilities, staff, cost, and procedures; (2) Patient satisfaction; (3) Patient loyalty; (4) Hospital brand image; (5) Patient intention to revisit. The test model had 546 degrees of freedom (p=0.00), chi-square/df = 1.507 < 2; CFI = 0.959 > 0.9; TLI). = 0.955 > 0.9; RMSEA = 0.044 < 0.08. This result showed that the model was suitable for the data collected (Figure 3).

The SEM model was implemented to evaluate the direct influence of independent variables such as hospital service quality and hospital brand image with dependent variables such as patient satisfaction and patient loyalty, patient revisit intention. Next, this model evaluated the direct influence of service quality on factors such as facilities, medical personnel, service prices, and medical examination and treatment processes. The results in Table 5 show that except for the relationship between satisfaction patient and hospital brand image is not statistically significant ($p > 0.05$), meaning that $H4$ is not supported, other hypotheses are supported. Specifically, hospital brand image has a direct positive effect on patient loyalty ($H3$: $p < 0.001$). Hospital
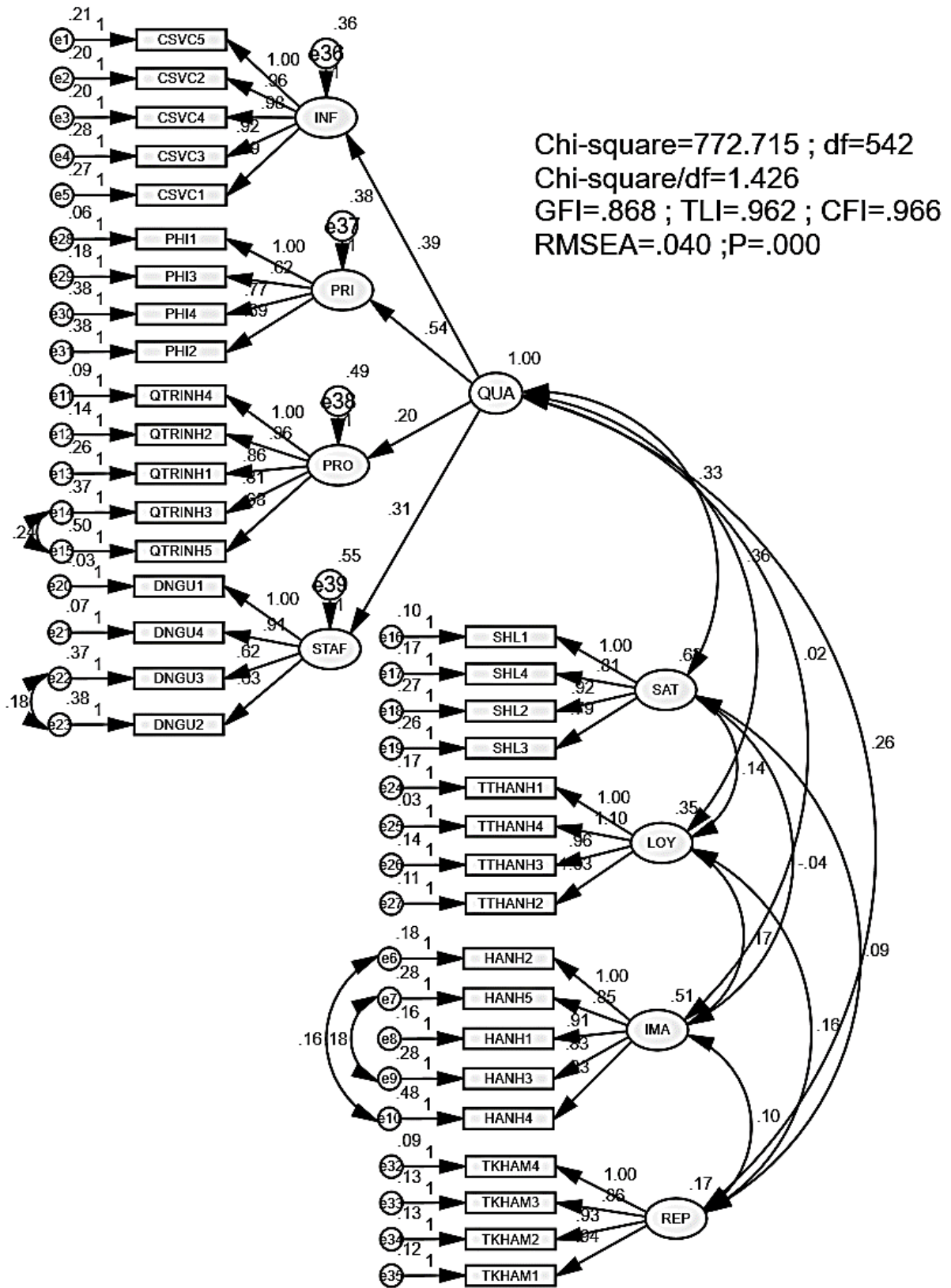
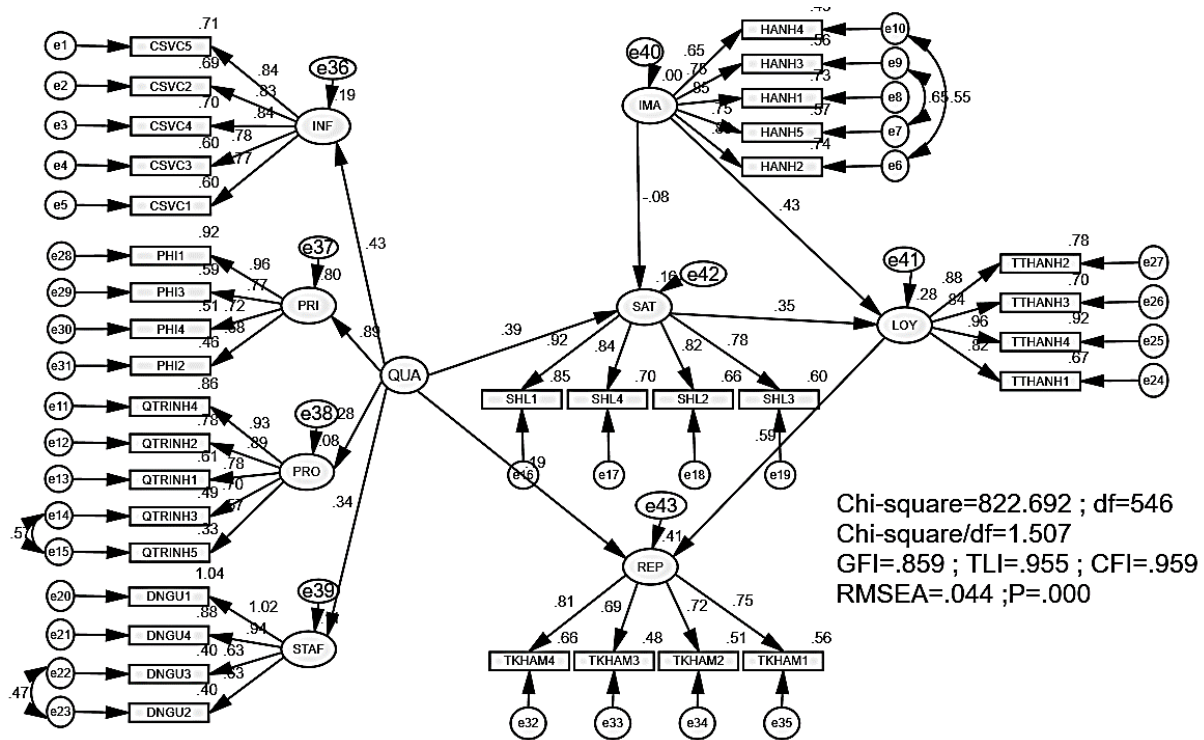**Figure 2.** Standardized CFA results

Figure 3. Standardized SEM model outcomes

service quality has a direct positive association with patient satisfaction (*H1*: $p < 0.001$) and intention to re-visit (*H2*: $p = 0.004$). Patient satisfaction had a direct positive relationship with patient loyalty (*H5*: $p < 0.001$). Patient loyalty had a direct positive relationship with the intention to revisit (*H6*: $p < 0.001$). The evaluation results also show that hospital service quality has a direct positive correlation with facilities (*H7a*: $p < 0.001$), health workers (*H7b*: $p < 0.001$), transparent and reasonable service prices (*H7c*: $p < 0.001$), and medical examination and treatment process (*H7d*: $p < 0.001$).

6. DISCUSSION

With the increasing health care needs of people in Vietnam, the involvement of the private hospitals in this industry plays an important role, supporting public health facilities in ensuring protect the health of the people. The development of medical examination and treatment services at private hospitals will help people have more choices about the best healthcare services that are suitable depending on the conditions of individuals and families. This study was conducted to examine the relation-

Table 5. Hypotheses testing

Source: Developed by the authors with AMOS.

Path	B	S.E.	C.R.	*p*-value	Hypotheses
SAT ← QUA	.307	.059	5.238	$p < 0.001$	Accepted *H1*
SAT ← IMA	−.092	.070	−1.314	0.189	Rejected *H4*
LOY ← SAT	.262	.045	5.786	$p < 0.001$	Accepted *H5*
LOY ← IMA	.360	.053	6.812	$p < 0.001$	Accepted *H3*
INF ← QUA	.308	.055	5.586	$p < 0.001$	Accepted *H7a*
PRO ← QUA	.203	.053	3.818	$p < 0.001$	Accepted *H7d*
STAF ← QUA	.270	.055	4.905	$p < 0.001$	Accepted *H7b*
PRI ← QUA	.733	.079	9.311	$p < 0.001$	Accepted *H7c*
REP ← LOY	.404	.046	8.824	$p < 0.001$	Accepted *H6*
REP ← QUA	.077	.026	2.911	0.004	Accepted *H2*

Note: SAT: Patient satisfaction; QUA: Hospitals' service quality; IMA: Hospitals' brand image; LOY: Patient loyalty; INF: Infrastructure; PRO: Procedure; STAF: Medical staff; PRI: Price; REP: Revisit intention.

ship between hospital service quality and hospital brand image with patient satisfaction, loyalty, and intention to revisit (Liu et al., 2021; Bentum-Micah et al., 2020; Al-Damen, 2017; Aliman & Mohamad, 2016; Juhana et al., 2015; Nguyen & Nguyen, 2014; Zarei et al., 2015; Zarei et al., 2012; Wu, 2011; Yesilada & Direktör, 2010). Research results showed a direct impact of hospital service quality and hospital brand image on patient satisfaction, loyalty, and revisit intention. These results are suitable with results of some previous studies that supported these relationships, suggesting a key role of hospital service quality in enhancing patient satisfaction (*H1*) and revisit intention (*H2*), and the role of hospital brand image in improving patient loyalty (*H3*). Research results provide practical evidence for the process of building appropriate marketing and public relations strategies to increase competitiveness for private hospitals.

Research results showed that hospital brand image has a direct positive impact on patient loyalty. This finding echoed the previous results about the association between brand image and patient loyalty (Aliman & Mohamad, 2016; Wu, 2011). A positive brand image will make patients have a positive perception and attitude towards the hospital, thereby increasing their loyalty to the hospital. Previous studies have shown that brand image could affect patient loyalty indirectly through patient satisfaction and service quality (Wu, 2011). However, in this study, hospital brand image is not significantly associated with patient satisfaction (*H4*). This result differed from some previous studies that showed that hospital brand image might be directly or indirectly related to patient satisfaction (Aliman & Mohamad, 2016; Wu, 2011). This can be explained that the hospital brand image only acted as a value of the hospital in the patient's perception, or, in other words, just an invisible factor that contributes to service quality. For patients, the hospital brand image may be important in deciding to use a service, but it is not an important factor determining their satisfaction. Satisfaction is determined by service quality including equipment, facilities, human resources, transparent and clear service prices, and medical examination and treatment process, which does not come from the brand image.

Several suggestions can be drawn from the study results. Firstly, the hospital brand image acts as a factor that directly affects patient loyalty, leading to the promotion of the patient intention to re-examine. Therefore, in the operational strategy of private hospitals, brand image management should be concentrated and prioritized, especially in building a positive and valuable brand image for patients. Possible measures include online advertising, building good customer relations, or training in branding for key medical staff. In addition, the hospital can deploy special and modern medical services, thereby helping to position the value of the hospital. Second, hospital service quality has an important impact on patient satisfaction and revisit intention, indicating that service quality is a factor that needs attention and improvement in private hospitals. Hospital leaders need to develop customer-oriented health service delivery strategies to help customers have high-quality medical service experiences. These strategies need to be implemented synchronously, systematically, and comprehensively from equipment, facilities, human resources, transparent and clear service prices, and medical examination and treatment processes. These improvements will ensure the sustainability of patient satisfaction and patient loyalty, thereby helping to increase revenue and profit for the hospital.

CONCLUSION AND LIMITATIONS

This study was conducted with the aim to measure the relationship between hospital service quality, hospital brand image, patient satisfaction, patient loyalty and revisit intention of private hospitals in Vietnam. On that basis, the aim is to provide policy implications to create the foundation for marketing and customer care programs of private hospitals in Vietnam towards sustainable business development. The results of the study show that there are 9/10 accepted hypotheses. This study provides practical evidence on the role of hospital service quality and hospital brand image in important outcomes such as patient satisfaction and patient loyalty. Service quality has a direct effect on patient satisfaction and re-

visit intention as the indicator of patient loyalty. Meanwhile, hospital brand image has a direct positive impact on patient loyalty although there is no direct relationship with patient satisfaction.

Any studies have certain limitations and this study is no exception. Firstly, the study was only conducted in private hospitals in urban areas; thus, study results may not be applied to private hospitals in rural areas. Future studies could be conducted in different geographical areas (e.g. rural or mountainous), and different types of health facilities to increase the generalizability. Second, some factors that can affect patient loyalty and patient satisfaction such as trust in the doctor-patient relationship have not been included in this study. Besides, factors such as socio-demographic characteristics and health conditions of patients were not included in the analysis model. Therefore, further studies can use these variables as moderating factors. Third, this study used a cross-sectional survey method at one point in time, while patient satisfaction and patient loyalty are factors that can change over time. Therefore, further longitudinal research should be performed to capture the dynamic characteristics of these two outcomes. Building monitoring systems in private hospitals could be a potential solution in assessing this change.

AUTHOR CONTRIBUTIONS

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