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<https://doi.org/10.1057/s41599-023-01797-6>

OPEN

Understanding the mediating effect of switching costs on service value, quality, satisfaction, and loyalty

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This work examines the connections between service quality (SQ), service value (SV), customer satisfaction (CS), and customer loyalty (CL) within the healthcare industry. In addition, we seek to provide empirical evidence regarding the impact of different types of switching barriers, including procedural, financial, and relational costs, on these relationships. This is because switching costs are the key factors for maintaining and developing the relationship with the customer. The paper uses the Partial Least Squares Structural Equation Modeling (PLS-SEM) method for assessing the structure of - and examining - the valid data sample of 300 people, who have all experienced service from private healthcare in Ho Chi Minh City (HCMC), Vietnam. This paper is the first to study the three-dimensional switching costs (SC) (procedural, financial, and relational) as mediators of the CS-CL, and SV-CL relationships together in the private healthcare sector. The significant contributions of this paper include: (1) procedural, financial, and relational switching costs which have a determinant impact on customer loyalty (CL). Moreover, loyalty is also achieved through value given, and the pleasure of clients in the healthcare sector, (2) while customer satisfaction (CS) is a mediator of service value (SV) and CL, SV intervenes between the SQ and CS, (3) procedural/financial switching costs partially mediate the effects of the SV, CS, and CL relationships. Both academic contributions and managerial recommendations are provided by the results of this research in order to enrich the literature, and also to suggest that companies build stronger relationships with their customers and thus retain them.

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Introduction

Vietnam's fastest-growing and most promising sector is the healthcare industry. According to Business Monitor International reports, the turnover for Vietnamese healthcare reached \$16.1 billion, accounting for 7.5% of the GDP (Koushan, 2018). By 2021, this amount is projected to increase to \$22.7 billion, which would indicate a compound annual growth rate of around 12.5% from 2017 to 2021 (Vietnam Times, 2020). The reason for this rising growth is the increasing health awareness among the Vietnamese, especially the middle classes and above, who always seek quality healthcare and education services (Vietnam Times, 2020). In the coming years, Vietnam's determination to reform its healthcare system should provide many business prospects. However, Vietnamese hospital systems and chains are the most important aspects to be investigated and improved. According to a Grant Thornton analysis on the private equity in Vietnam, healthcare and pharmaceuticals finished third in terms of investor appeal, and 38% of those who were asked described them as being "very attractive" (Vietnam Times, 2020). Although the mixed public-private healthcare system has over 1000 public and 130 private hospitals, it still can't meet the increasing demand (Open to Export, 2022). In other words, Vietnam's healthcare system is beset by problems. For example, there is insufficient space and an overload in hospitals as well as inadequate quality healthcare. "It is currently estimated that, every year, \$1 billion is spent by over 40,000 Vietnamese patients traveling abroad for healthcare services" (Gaskill & Nguyen, 2015, p. 5). Companies must adapt to the changing of the business environment as well as being proactive in meeting consumer requirements when there are a continuously increasing number of industry players. These need both to help companies gain competitive advantages, and also to improve their performance to build relationships and retain customers (Hinson et al., 2006). Therefore, this empirical study is necessary for providing an insight for organizations and firms to create and maintain a positive relationship with clients. This will enhance their service quality, thus increasing their patient experiences and retaining their loyalty.

Due to increased competition among healthcare providers, evolving customer expectations, and a plethora of options, it is increasingly challenging today to please clients and win their allegiance (Zhou et al., 2017). Therefore, behavioral loyalty among clients is considered to be a key element in competition (Kumar & Shah, 2004).

The relationship between CS and CL has been the subject of numerous earlier research, and it has been found that there is a considerable correlation between the two. However, this relationship could be affected by SC, such as procedural switching cost (PSC), financial switching cost (FSC), and relational switching cost (RSC), and/or different contexts from industry to industry. There has not been any prior research that specifically examined how conversion fees affect that relationship in the healthcare sector.

Various academic studies have looked at the impact of SC on the link between CL and CS as a moderator (see, for example, Augusto de Matos et al., 2009; Chen & Wang, 2009; Dagger & David, 2012; Ngo et al., 2019; Yang & Chao, 2017; Zargar & Farmanesh, 2021). In addition, SC could link with CS and CL as mediators (see, for example, Burnham et al., 2003; Koo et al., 2020; Matzler et al., 2015; Tan et al., 2022), although there is little research about this. The respective power of switching barriers with a good rapport will decide the level of customers' reliability to their current service suppliers. Besides the research that evaluated switching costs as a multidimensional construct, the study by Chen and Wang (2009) considers switching costs as being general constructs in evaluating the position of these switching fees in the association with both client satisfaction and their

retention. These studies create a good access to a review of the role of SC overall which prevent customers from switching to other services. This study will become a good access to a review of the overall role of switching barriers. Nevertheless, it is still unable to provide sufficient data to comprehend the effects of SC completely. It is also lacking the connection to enhance the liaison between service quality with client delight, and reliability. Thus, this article is put forward to review the impacts of various types of barriers. Therefore, it is expected that there is a gap in the link for intensifying the connection of service quality (SQ), CS, and CL. The following research questions are intended to be examined by this study in light of the aforementioned arguments:

- (1) What are the roles of SQ, SV, CS, and PSC, FSC, and RSC in producing CL?
- (2) Are PSC, FSC, and RSC mediating the SV-CL relationship?
- (3) Are PSC, FSC, and RSC mediating the CS-CL relationship?

The overall healthcare services and private healthcare services in Vietnam.

Even though it has had significant success in its health outcomes, Vietnam still has challenges with the health system in relation to its demographic, epidemiological, and social aspects. Vietnam is one of the nations with one of the fastest aging populations globally, with the number of people 65 and older expected to increase by a further 2.5 times by the year 2050 (Le et al., 2020). As a result, noncommunicable diseases now account for a higher percentage of Vietnam's disease burden than communicable diseases, which rose from 46% in 1990 to 74.0% in 2017 (Le et al., 2020). As a result, the healthcare network will need to expand and strengthen. However, many communes lack the basic infrastructure, equipment, and skills. The national commune health goals that were established in 2014 were only met by 69.76% of all rural communes in 2016 (Vietnam Central Steering Committee for the Census of Rural Areas, 2016). With greater rates of hospital admissions and longer average stays than regional averages, the total healthcare system is hospital-centric, which results in overcrowding and declining patient impressions (OECD, & WHO (2016)).

Although patient satisfaction and healthcare quality have improved recently, concerns about physical facilities and healthcare costs still exist. Numerous hospitals have reported gains across all quality measures since the Ministry of Health (MOH) published the first hospital quality scorecard in 2013. In 2018, Vietnam's average patient satisfaction index increased slightly to 4.04 out of 5, in comparison to the previous annual average of 3.98 out of 5 in 2017. With this development, public hospitals ought to be able to meet the needs of 80.8 percent of all inpatients. Public concerns concerning hospital infrastructure and facility conditions are, however, frequently covered in the media, especially at the provincial and district levels and from persons with better socioeconomic standing (Le et al., 2020).

A mixed public-private healthcare system has evolved in Vietnam as a result of the remarkable growth of private service providers. The number of private providers has increased significantly each year since 1993, when private medical practices were first allowed. Nationally, there were 35,000 private clinics in 2018—nearly three times as many as regional polyclinics as well as commune health stations, which are part of the public sector. Each year, there were ~9.6 new private hospitals and 1300 new private clinics. There is now at least one private hospital in 50 of the 63 provinces, while 45% of the private hospitals are located in the five centrally administered cities (i.e., Ha Noi, Can Tho, Hai Phong, Da Nang, and Ho Chi Minh cities). Private healthcare providers provided 32.2% of "outpatient services" and 6.3% of

“inpatient services” to the Vietnamese population (Le et al., 2020). During exit interviews conducted at facilities in Ho Chi Minh City, patients who visited private hospitals expressed favorable experiences such as shorter wait times, more comfortable amenities, friendlier physician behavior, and higher-quality consultations when compared to their experiences at state hospitals. This is some proof that the demands of the growing middle class are being met by private health care (Ho Chi Minh City DOH, 2019).

Literature review and hypotheses development

Customer loyalty. Mascarenhas et al. (2006) states that CL is a result of all experiences, including “physical interactions, emotional involvements, and value chain moments” after clients use the services or products of the supplier. In the marketing field, loyalty among customers is important for developing effective working relationships. According to Oliver (1999), either organizations or firms can eliminate the costs for marketing and then retain their customers by changing the satisfaction strategy to a loyalty strategy. The research of Camarero Izquierdo et al. (2005) about customer loyalty also finds that there were positive effects of loyalty on the performances of both the market and the economy. Overall, the studies of Jones and Sasser (1995); Heskett et al. (1994) pointed out a connection between attitude and repurchasing by customers, and financial performance, which leads to loyalty among customers.

Patient loyalty has been characterized as CL to a healthcare provider (Sumaedi et al., 2015). “The best type of patient is a loyal patient,” says the author, because if a patient is satisfied with the service, they would recommend it to their friends (Lombardi, 2012). For hospitals to avoid losing their current clients in a cutthroat market, patient loyalty is crucial (Astuti & Nagase, 2014). Customers’ subsequent purchases of the company’s goods or services are crucial for the sustainability of any business.

Businesses must be able to retain existing consumers because doing so is less expensive than acquiring new ones (Lin & Wang, 2006). In this context, CL is a key determinant of whether a firm retains its existence (Pişgin & Ateşoğlu, 2015). According to Zhou et al. (2017), adhering to medical advice and committing to long-term care are crucial components in improving patient outcomes and healthcare services. Therefore, healthcare professionals must manage patient loyalty for the sake of both parties. Understanding the elements that influence patient loyalty is necessary for effective management of this. Many empirical studies have been done to identify these predictors in the literature, despite the fact that some results are conflicting. The words “satisfaction,” “service quality,” “perceived value,” “brand image,” “trust,” and “commitment” are among those being looked into (Zhou et al., 2017). In our work, loyalty is the dependent variable that will be examined along with some of these predictors (satisfaction, perceived value, and service quality).

Customer satisfaction (CS) and customer loyalty (CL). CS is defined by some academics as being a “cognitive-based approach to customers’ evaluations of products and services” (Mano & Oliver, 1993). CL is a performance assessment based on all the previous interactions with a firm (Anderson et al., 1994), and is also the outcome of the comparison between the perceived value (PV) of the performance of the products or service and the results of that service or those products (Bitner & Hubbert, 1994). CS may be viewed as the total assessment of the contrast between consumers’ post-purchase experiences and their expectations for future purchases. Many previous papers (Fornell (1992); Oliver and Swan (1989); Taylor and Baker (1994)) also discover the “linkage between satisfaction and retention.”

Service value (SV) and customer loyalty (CL). SV is defined in several different ways. To define service value, also known as PV, weighted “get attributes” are compared to “give attributes” (Heskett et al., 1994). PV is based on equity theory, which is a consumer’s evaluation of what is acceptable or appropriate in relation to the perceived cost of a product (Bolton & Lemon, 1999). PV may also be described as a customer’s estimation of the benefits after taking into account what they believe they have received and been given. According to Chang et al. (2009) PV may be characterized as the value that a consumer associates with a product based on their expertise and understanding of its purchase and usage. An organization cannot determine this value objectively because it is a subjective one. PV represents a trade-off between the benefits and sacrifices that customers perceive in a supplier’s offering.

Many studies have been done to investigate how service value affects customer loyalty, and most of these studies have found a strong correlation between PV and consumers’ willingness to buy or repurchase a product (Bolton & Drew, 1991; Chang & Huang, 2022; Chiu et al., 2005; Dodds et al., 1991; Huang et al., 2019; Parasuraman & Grewal, 2000; Reza Islamy et al., 2022; Shie et al., 2022). This relationship has also been tested in different situations such as telephone services (Bolton & Drew, 1991), B2B technology service industry (Huang et al., 2019), healthcare (Chang & Huang, 2022; Shie et al., 2022), tourism (Reza Islamy et al., 2022), airline travel industry, and retailing services (Sirdeshmukh et al., 2002).

Service quality (SQ), value, satisfaction, and loyalty. Quality refers to “the customer’s perception of the overall quality or superiority of the product or service concerning its intended purpose, relative to alternatives” (Aaker & Jacobson, 1994). According to Buzzell et al. (1987), it is defined as a “customer’s perceptions of all non-price attributes of an organization’s goods and services”. According to Cowherd and Levine (1992), a product’s quality comprises both its own characteristics and all of the services that go along with it.

The prerequisite to getting loyalty from the customer is “satisfaction”. However, satisfaction by itself is not enough to gain either repurchases or brand intention to loyalty (Bloemer & Kasper, 1995). The connections between SV, CS, and intention based on CL have been tested in some studies (Agus, 2004; Chang & Huang, 2022; Huang et al., 2019; Reza Islamy et al., 2022; Shie et al., 2022; Taylor & Baker, 1994), and it is supposed that these relationships are positive yet changeable between different products, sectors, and contexts (Mittal & Kamakura, 2001).

According to Zeithaml et al. (1996), the degree of a customer’s satisfaction is determined by comparing their expectations with the value of the services they have received or experienced. Accordingly, the customer’s perception of service value (SV) and service quality (SQ) are the two key factors that affect how satisfied the client is. Besides, empirical proofs of earlier research confirm the links of satisfaction with quality and value, and there are also many serious arguments about the connection between the causes and consequences of satisfaction among clients and service quality or value (Chang & Huang, 2022; Cronin et al., 2000; Huang et al., 2019; Reza Islamy et al., 2022). Brady et al. (2002) identify three key perspectives on this causal relationship in the research. The first point of the SQ-SV-CS linkage is described by Anderson and Sullivan (1993), which is that the quality and value of products or a service are components of CS. This position is in line with Anderson et al. (1994). Second, many scholars believe that SQ is a consequence of CS (Bitner et al., 1990). Third, Dabholkar (1995) claims that customer satisfaction does not link with service quality and value, and McAlexander et al. (1994) also support this statement. Despite many debates

being against the concept of the connection between SQ and CS linkage, SQ is considered as the key factor of CS. In addition, the SQ and SV have a favorable impact on CS (Brady et al., 2002). Moreover, the study by Chodzaza and Gombachika (2013) highlights that customer satisfaction is usually considered as the factor which intensifies the link between SV and CL as the role of the mediating effect (Chu et al., 2012). Pan et al. (2012) conducts studies to evaluate the factor's effect on a customer's intention, and the consequences show that quality will increase faith in the customer and will finally lead to loyalty.

The study by Keshavarz and Jamshidi (2018) determines the relationship of SV, CS, and CL in the hotel industry. Data for this study was gathered from 417 foreigners who traveled to Kuala Lumpur and visited hotels with more than 4 stars. The findings indicated that there was no statistically significant relationship between CL and SQ in terms of both process and result. However, that relationship is linked via PV and CS. The research's findings also support the relationship between SQ, including process and outcome, PV, and CS. The study also supports the link between CS, PV, and CL.

Switching costs. Porter (1980) characterizes shift costs in the marketing concept as a one-time transaction cost experienced by consumers when they convert from a supplier to other suppliers. Switching costs consist of seeming to be all elements that create difficulties and costliness for the customer when switching to other providers. Although other definitions have been addressed in earlier studies, Burnham et al. (2003) have offered a different definition in this study. According to their interpretation, switching costs are related to time and effort costs, financial losses, and pain in the emotions or psychological state caused by loss of identity and connection dissolution. Therefore, companies can consider the implementation of some measures to decrease or compensate switching costs to win the competition for customers. Given an example for this situation, the switching costs are used by several mobile operators to attract and lock-in customers. Some businesses lower the barrier costs for newcomers to encourage them to switch and raise them for the existing clients to boost the ease of moving. There are three different forms of switching costs: "relational switching costs" (RSC), "financial switching costs" (FSC), and "procedural switching costs" (PSC). By cutting costs and focusing on CS, businesses may retain more consumers (Lee et al., 2001).

Earlier research has discovered that SC have a strong effect on repurchase intention and doing this is a predictor of "switching intentions" and "switching behavior" (Bansal & Taylor, 1999; Jones et al., 2000). Moreover, conversion costs are also considered to be a direct antecedent of CL in the banking sector (Beerli et al., 2004).

Procedural switching costs (PSC). Burnham et al. (2003) characterizes PSC as financial risk, customer evaluation, and learning procedures. In addition, switching from a current service provider comes with setup fees (Burnham et al., 2003). Switching to the service provider or brand may be associated with losing time, making extra efforts, and paying termination costs. Time costs are described as the benefit involved in the length of time clients continue using the service of a current company or decide to switch to another one.

Financial switching costs (FSC). Following Heide and Weiss (1995), FSC incurred when customers switch providers, including both monetary and non-monetary costs, such as time and mental effort. Switching costs might also take into account the diminished loyalty benefits brought on by quitting the present partnership (Heide & Weiss, 1995). An example for this case is that

the customer familiarity with the procedures of a service provider creates a type of conversion fee because this understanding would be helpful if the relationship is terminated by the clients. An activity has an increased switching cost because of the reduction of the engaging probability of customers. Urbany (1986) also proves that the information costs increase leads to the diminished extent of the search. As a consequence, the intention to loyalty will be affected by FSC being involved in a positive way (Burnham et al., 2003).

Relational switching costs (RSC). RSC refers to a customer's declaration of estimating the present service supplier in comparison to an alternative provider in relation to interaction quality. This involves the perception of a client being that all companies offer a similar quality of service/products, or that alternative companies might offer even better service/products. Relational costs of switching also refer to the dissatisfaction of the customers caused by the relational ties that they have with the present provider as contrast to the unproven new provider. These relational switching barriers are therefore essential for retaining clients for various service providers in various service industries (Chen & Wang, 2009; Colgate et al., 2007). Beatty et al. (1996) illustrate that those interpersonal relationships are connected and are supported to build the relationship among the clients and their retailers. These findings imply that interactions between service users and service personnel may result in close bonds between the service providers and their customers (Price & Arnould, 1999).

Mediating role of SC. In earlier literature, the connection between SC and CL is studied (Hellier et al., 2003). Picón et al. (2014) highlight that switching barriers to the loyalty intention of clients in both emotion and behavior are connected with the switching behavior to the other supplier. This indicates that switching costs can help to maintain customers and can cause a hindrance to shifting to other suppliers or service providers. In other words, customers still use the service of the supplier because of the barrier of shift costs, despite the low level of satisfaction. Oliver (1999) specifies that CS is the starting point for customers to establish CL, and it needs to nitrify with various components to sustain and foster this relationship for a shift from satisfaction to loyalty. Kotler (1997) suggests that barrier costs and specific shift costs belong to the factors of CL. The stronger level of switching barrier involves PSC, FSC, and RSC and is the higher link of loyalty with pleasure and trust among clients (Aydin et al., 2005). While the study by Asimakopoulos and Asimakopoulos (2014) emphasizes that usability can influence loyalty intention through switching costs, Park et al. (2014) suggest that SC would affect continuance intention to use, which in turn, leads to customer loyalty. Vasudevan et al. (2006) emphasize the significance of developing relationships with customers. In summary, PSC, FSC, and RSC mediate the effect of SV and CS on CL.

Previous research has looked into the mediating role of SC globally (Burnham et al., 2003; Koo et al., 2020; Matzler et al., 2015; Ngo et al., 2019; Tan et al., 2022). Blut et al. (2015) evaluates the role of PSC, FSC, and RSC on the relationships between CS, repurchase intentions, and repurchase behavior. Their findings reveal that PSC, and RSC have an unfavorable impact on the link between CS and repurchase intentions or behavior while FSC can strengthen this relationship. Picón-Berjoyo et al. (2016) explore the direct and indirect links of CL and its basic elements, including PV, CS, and perceived SC. The study also examines how CS and PSC play mediating roles in the link between PV and CL. They found the positive effect of PV on loyalty through CS and perceived SC, and PV and behavioral loyalty. Moreover, the strong relationship between CS and

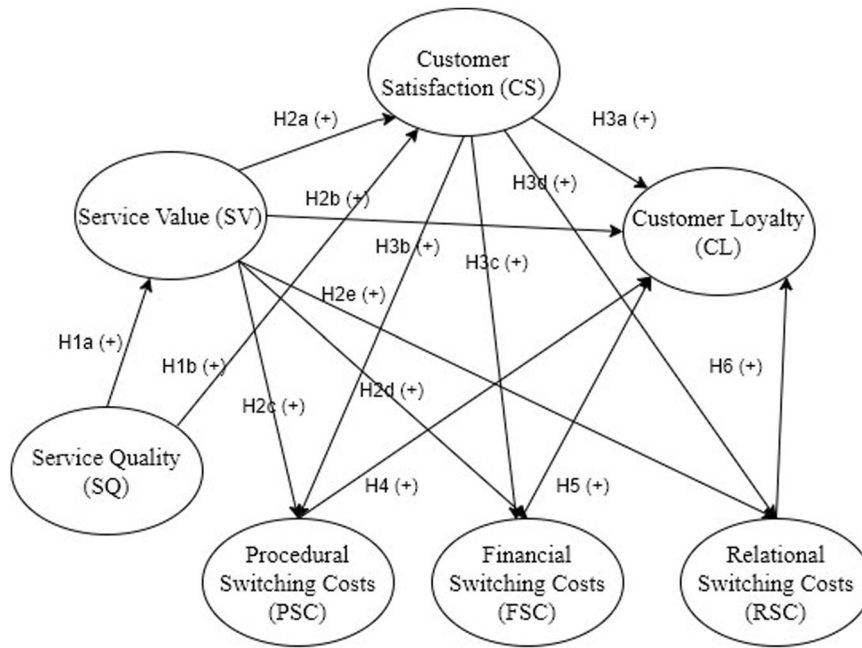


Fig. 1 Theoretical model.

affective loyalty was caused by customers who are highly involved and have a low propensity to switch providers; as a result, this also increases customer intention. Matzler et al. (2015) find that there is a favorable impact of FSC and RSC on CL, while PSC have no effect on CL. Other findings were that FSC and RSC are mediators in the connection between CS and CL. Ngo and Pavelková (2017) conducts two models. They examined the mediating roles of favorable and unfavorable SC within the link with SV, client retention, and CS. They found that the service value had an impact on CL through unfavorable SC as a mediator, and SV or CS would be affected on loyalty intention by positive switching costs. The following hypotheses are put out in light of the literature review and prior research, and a theoretical model is displayed in Fig. 1:

- H1a, b: SQ is favorably related to SV and CS.*
- H2a, b, c, d, e: SV is favorably related to CS, CL, RSC, FSC, and PSC.*
- H3a, b, c, d: CS is favorably related to CL, RSC, FSC, and PSC.*
- H4: PSC are favorably related to CL.*
- H5: FSC are favorably related to CL.*
- H6: RSC are favorably related to CL.*
- H7: There is a SV intervention between SQ and CS.*
- H8: There is a CS intervention between SV and CL.*
- H9a, b, c: There is an intervention for RSC, FSC, and PSC between SV and CL.*
- H10a, b, c: There is an intervention RSC, FSC, and PSC between CS and CL.*

Methods

Data collection and sampling. Our work adopts a questionnaire-based survey. The research builds its primary data through delivering paper-based and online questionnaires (Ha, 2022) between January and May, 2021. The adapted instruments were delivered to participants in their native language of Vietnamese after pre-testing (Ha, 2022). A total of 380 questionnaires, including 230 paper-based and 150 online questionnaires were distributed to respondents after pretesting (Ha, 2022). A response rate of 78.95% was received out of a total of 300 questionnaires. This response rate is high and aids in minimizing nonresponse bias (Malhotra, 2020). The scope of this study includes individuals who utilize private healthcare services in Ho Chi Minh City, Vietnam, and they form the target population. The study adopts the convenience sampling technique, which involves selecting participants based on their accessibility and proximity to the researcher.

Measurement scales. The rating scale chosen for this study was a 5-point Likert scale, with responses ranging from “strongly disagree” (1 point) to “strongly agree” (5 points). The scale for SQ, SV, CS, and CL are measured with six, four, six and six items, respectively. The scales for RSC, FSC, and PSC are measured using two items (Matzler et al., 2015), each adapted from Burnham et al. (2003). In Burnham et al. (2003) questionnaire, designed to measure switching costs, a total of 30 items were initially included. However, the length of the questionnaire was deemed excessive by experts. Consequently, we had to substantially reduce the number of items to prevent placing excessive burden on the respondents (Kim et al., 2018; Lee & Kim, 2022; Srivastava et al., 2022; Wu et al., 2021). Table 1 lists every measuring scale used in this research questionnaire.

Empirical results

Demographics of respondents. Table 2 presents a summary of 300 respondents’ profiles, including gender, age, occupation, position, and monthly income.

Table 1 Measurement scales.

Code	Constructs and indicators	Source
	<i>Service Quality (SQ)</i>	
SQ1	In general, the staff members deliver services consistently and dependably.	Brady et al. (2002)
SQ2	In general, the staff members are ready and able to offer a prompt service.	
SQ3	In general, the staff members are competent (i.e., knowledgeable and skillful).	
SQ4	In general, the staff members are amiable and easy to reach.	
SQ5	Typically, the staff member serving me makes an effort to comprehend my needs.	
SQ6	Generally speaking, this facility offers a risk-free environment.	
	<i>Service Value (SV)</i>	
SV1	Overall, I find that the services provided by this facility to be of great value.	Picón-Berjoyo et al. (2016)
SV2	Considering what I had to give up, this facility can generally satisfy all of my goals and needs.	
SV3	In light of the service's characteristics, I think I am getting a decent value for my money.	
SV4	My evaluation of the value received is very high, especially in light of the time, money, and effort invested.	
	<i>Customer Satisfaction (CS)</i>	
CS1	This facility covers my needs.	Picón-Berjoyo et al. (2016)
CS2	This facility is on a par with or better than those of other businesses.	
CS3	My claims or issues are always handled fairly well.	
CS4	The services I require are all provided by this facility.	
CS5	This facility offers top-notch support.	
CS6	My interactions with the business have generally been favorable.	
	<i>Procedural Switching Costs (PSC)</i>	
PSC1	There are many formalities connected to the process of switching the healthcare facility.	Matzler et al. (2015)
PSC2	Opening a new healthcare center involves a complicated process.	
	<i>Financial Switching Costs (FSC)</i>	
FSC1	Switching the healthcare facility could cause hidden and unpredictable costs.	Matzler et al. (2015)
FSC2	Switching the healthcare facility is likely to cause some unforeseen difficulties.	
	<i>Relational Switching Costs (RSC)</i>	
RSC1	I appreciate the facility's current brand and image.	Matzler et al. (2015)
RSC2	I don't care about the facility's current reputation or brand.	
	<i>Customer Loyalty (CL)</i>	
CL1	I rarely consider switching to another facility.	Zeithaml et al. (1996)
CL2	If these facilities increase the costs, I will continue to use their services.	
CL3	I feel relieved after being provided a service by my current facility.	
CL4	I consistently compliment my existing facility to those in my immediate vicinity.	
CL5	I usually put out good messages about my current facility.	
CL6	I usually recommend my current facility to all those who need my advice.	

Table 2 Respondent's profile.

Demographic factor		Frequency	Percentage (%)
Gender	Female	153	51%
	Male	147	49%
Age (years)	18-22	51	17%
	23-40	108	36%
	>40	141	47%
Occupation	Student	51	17%
	Officer	105	35%
	Other	144	48%
Position	Manager	42	14%
	Staff	114	38%
	Other	144	48%
Monthly income	Below \$435	51	17%
	\$435-\$870	57	19%
	\$871-\$1300	78	26%
	Above \$1300	114	38%

Source: Authors' calculation.

Table 3 Descriptive statistics of questionnaire items.

	N	Minimum	Maximum	Mean	Std. Deviation
SQ	300	2.0	5.0	3.750	0.907
SV	300	1.0	5.0	3.704	0.933
CS	300	2.0	5.0	3.742	0.902
PSC	300	1.0	5.0	3.795	0.889
FSC	300	1.0	5.0	3.857	0.910
RSC	300	1.0	5.0	3.759	0.880
CL	300	1.0	5.0	3.814	0.858

Source: Authors' calculation.

Table 3 presents descriptive statistics of the questionnaire items. Overall, all of the constructs' mean scores are above 3 and below 4. The highest mean score belongs to the FSC construct with a score of 3.857 and the lowest mean score is 3.704, which belongs to the Product Quality construct.

Measurement model assessment. Since all variables are evaluated using the same instrument, we examine the "common method bias" (CMB) to determine if it presents a problem before evaluating the measurement model. A marker variable technique is used (Simmering et al., 2015). This appropriate technique is widely used in PLS-SEM (Chakraborty et al., 2022; Chin et al., 2013; Sharma et al., 2009), and is among the most recommended methods for testing CMB (Lindell & Whitney, 2001). The results indicate that the greatest "variance inflation factor" (VIF) is 2.493 (CL) is still under the threshold value of 3.3 (Kock, 2015, 2017). Therefore, CMB is not problematic in our analysis (Podsakoff et al., 2003; Podsakoff et al., 2012). For our data analysis, we then utilized SmartPLS version 3.3.3 (Ringle et al., 2015).

Table 4 Constructs and their responding measures.

Constructs	Items	Loading	Cronbach's alpha	Rho_A	Composite reliability (CR)	Average variance extracted (AVE)
Service Quality (SQ)	SQ1	0.781	0.866	0.875	0.896	0.596
	SQ2	0.775				
	SQ3	0.769				
	SQ4	0.812				
	SQ5	0.757				
	SQ6	0.735				
Service Value (SV)	SV1	0.809	0.820	0.821	0.881	0.650
	SV2	0.785				
	SV3	0.810				
	SV4	0.820				
Customer Satisfaction (CS)	CS2	0.823	0.856	0.864	0.896	0.633
	CS3	0.814				
	CS4	0.747				
	CS5	0.817				
	CS6	0.774				
	PSC1	0.905				
PSC2	0.869					
Financial Switching Costs (FSC)	FSC1	0.905	0.751	0.755	0.889	0.800
	FSC2	0.884				
Relational Switching Costs (RSC)	RSC1	0.854	0.778	0.897	0.896	0.811
	RSC2	0.945				
Customer Loyalty (CL)	CL1	0.714	0.833	0.846	0.883	0.605
	CL2	0.853				
	CL4	0.748				
	CL5	0.884				
	CL6	0.668				

Source: Authors' calculation.

Table 5 Results of discriminant validity using HTMT criterion.

	CL	CS	FSC	PSC	RSC	SQ	SV
CL							
CS	0.832						
FSC	0.734	0.603					
PSC	0.951	0.621	0.612				
RSC	0.277	0.193	0.085	0.186			
SQ	0.276	0.188	0.22	0.271	0.048		
SV	0.692	0.645	0.5	0.545	0.088	0.216	

Source: Authors' calculation.

Table 4 lists the measurement model's results, along with the loadings (outer), rho A, CR, and AVE. The indicators CS1 and CL3 were deleted from a reliability test because they failed to meet the threshold of 0.40 (Hair et al., 2012). According to Table 4, the CR values range from 0.881 (PSC) to 0.896 (SQ, CS, and RSC), exceeding the necessary value of 0.70 (Hair et al., 2019). Cronbach Alpha and rho_A score higher than the cut-off of 0.60 (Hair et al., 2019). This indicates that internal consistency reliability is satisfied by all constructs.

The convergent validity is attained since all of the AVEs in Table 4 range from 0.596 (SQ) to 0.811 (RSC) (Hair et al., 2019). In addition, the "heterotrait-monotrait ratio of correlations" (HTMT) is below 1.0 as displayed in Table 5, indicating that the discriminant validity is achieved (Garson, 2016). Hence, we can deduce that the constructs of the hypothesized model are not only reliable and valid, but also distinctly different from each other.

Structural model assessment. To confirm the hypothesized connections, the structural model must be assessed after the

measurement model has been assessed. Figure 2 displays R-squares and the path coefficients for each variable.

As shown in Fig. 2, R-squares range from 0.032 (RSC) to 0.761 (CL); consequently, these values suggest that the explanatory power of the research model spans from being somewhat weak to reasonably significant (Hair et al., 2019).

Direct effects. In addition, we employ a 5000-sample bootstrap to validate the statistical significance of the proposed relationships (Henseler et al., 2016). Except for H1b and H2c, all relationships are significant statistically, as seen in Table 6, as all p values are <0.01 . More specifically, service quality ($\beta = 0.189, \rho < 0.01$) was favorable associated with SV and SV ($\beta = 0.533, \rho < 0.01$) was favorable associated with CS. Similarly, SV ($\beta = 0.134, \rho < 0.01$) was also favorable associated with CL. A closer look at the detailed result indicates that service values ($\beta = 0.183, \rho < 0.01$) and ($\beta = 0.209, \rho < 0.01$) were favorably associated with FSC and PSC, respectively. In a similar vein, CS ($\beta = 0.331, \rho < 0.01$), ($\beta = 0.194, \rho < 0.01$), ($\beta = 0.390, \rho < 0.01$), and ($\beta = 0.391, \rho < 0.01$) were favorably associated with CL, PSC, FSC, and RSC, respectively. Along the line, FSC ($\beta = 0.158, \rho < 0.01$), PSC ($\beta = 0.445, \rho < 0.01$), and RSC ($\beta = 0.090, \rho < 0.01$) were also favorable associated with CL.

Mediating effects

The mediating effects of PSC, FSC, and RSC on the SV-CL relationship. In addition, we examined the indirect effect to ascertain the role of PSC, FSC, and RSC as mediators in the connection between SV and CL. This led to the calculation of indirect effects, which are displayed in Table 7. More specifically, the service value is partially mediated by FSC ($\beta = 0.029, p < 0.05$) and PSC ($\beta = 0.093, p < 0.05$). However, the RSC does not mediate the connection between SV and CL ($\beta = -0.003, p > 0.05$).

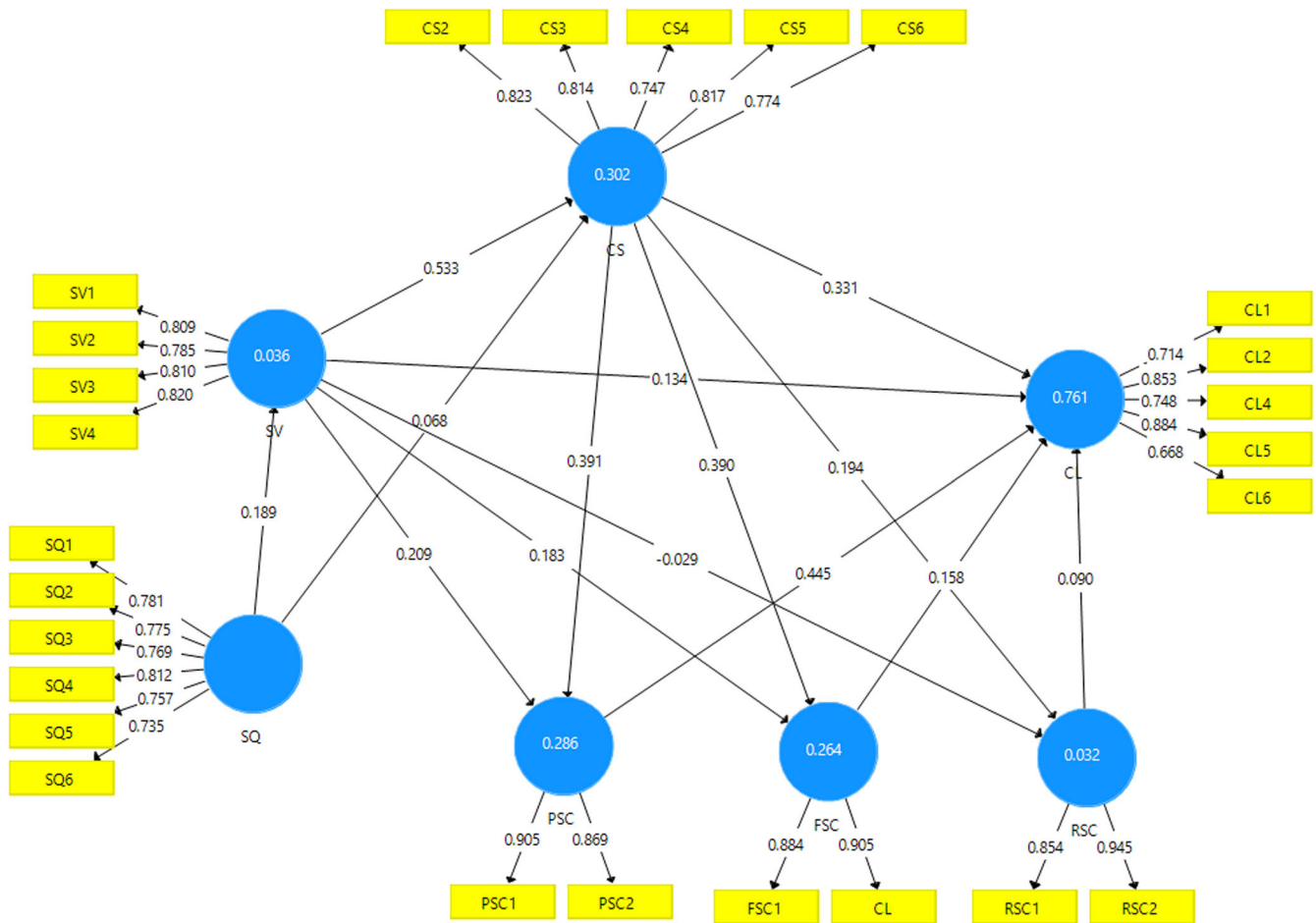


Fig. 2 SmartPLS results.

Table 6 Hypothesis testing results.

	Estimate	Standard deviation	Observed T-Statistics	Bias	Confidence intervals (2.5%)	Confidence intervals (97.5%)	P Values	Results
H1a: SQ -> SV	0.189	0.057	3.327	0.011	0.071	0.289	0.001	Supported
H1b: SQ -> CS	0.068	0.054	1.266	0.004	-0.049	0.165	0.206	Not Supported
H2a: SV -> CS	0.533	0.051	10.381	0.002	0.419	0.623	0.000	Supported
H2b: SV -> CL	0.134	0.041	3.297	-0.002	0.058	0.218	0.001	Supported
H2c: SV -> RSC	-0.029	0.067	0.434	0.001	-0.156	0.106	0.664	Not Supported
H2d: SV -> FSC	0.183	0.058	3.154	0.002	0.067	0.296	0.002	Supported
H2e: SV -> PSC	0.209	0.060	3.460	0.000	0.084	0.321	0.001	Supported
H3a: CS -> CL	0.331	0.048	6.887	-0.003	0.240	0.428	0.000	Supported
H3b: CS -> RSC	0.194	0.071	2.720	0.004	0.038	0.321	0.007	Supported
H3c: CS -> FSC	0.390	0.061	6.362	-0.001	0.267	0.506	0.000	Supported
H3d: CS -> PSC	0.391	0.058	6.700	0.000	0.271	0.497	0.000	Supported
H5: FSC -> CL	0.158	0.045	3.531	0.000	0.072	0.244	0.000	Supported
H4: PSC -> CL	0.445	0.055	8.137	0.003	0.329	0.545	0.000	Supported
H6: RSC -> CL	0.090	0.029	3.088	0.000	0.031	0.144	0.002	Supported

Source: Authors' calculation.

Table 7 Mediating effects of PSC, FSC, and RSC on SV-CL relationship.

	Specific effects	Standard deviation	Observed T-Statistics	Bias	Confidence intervals (2.5%)	Confidence intervals (97.5%)	P Values	Results
SV -> FSC -> CL	0.029	0.012	2.373	0.000	0.010	0.059	0.018	Supported
SV -> PSC -> CL	0.093	0.032	2.902	0.002	0.032	0.156	0.004	Supported
SV -> RSC -> CL	-0.003	0.006	0.411	0.000	-0.017	0.009	0.681	Not Supported

Source: Authors' calculation.

Table 8 Mediating effects of procedural, financial, and relational switching costs on customer satisfaction-customer loyalty relationship.

	Specific effects	Standard deviation	Observed T-Statistics	Bias	Confidence intervals (2.5%)	Confidence intervals (97.5%)	P Values	Results
CS -> FSC -> CL	0.061	0.023	2.719	0.001	0.024	0.115	0.007	Supported
CS -> PSC -> CL	0.174	0.036	4.861	0.001	0.108	0.250	0.000	Supported
CS -> RSC -> CL	0.017	0.009	1.939	0.001	0.004	0.038	0.050	Supported

Source: Authors' calculation.

The mediating effects of PSC, FSC, and RSC on the CS-CL link. Subsequently, we tested for the indirect effect to determine the role of procedural, financial, and relational switching costs as mediators in the relationship of CS and CL. As a result, indirect effects were calculated and shown in Table 8. More specifically, the SV is partially mediated by FSC ($\beta = 0.061, p < 0.05$), PSC ($\beta = 0.174, p < 0.05$), and RSC ($\beta = 0.017, p = 0.05$).

Alternatively, Table 9 provides a graphical presentation of the products of mediation analysis. This presentation can enhance understanding and clarity of specific mediating effects of PSC, FSC, and RSC on SV-CL relationship, and CS-CL relationship.

Predictive relevance. The sample reuse technique (Q^2), in addition to the size of R^2 , can be successfully used as a criterion for predictive relevance (Geisser, 1975; Henseler et al., 2015; Stone, 1974). Based on the blindfolding procedure used to estimate the model's parameters, Q^2 uses PLS to assess the predictive validity of a complicated model. If Q^2 is >0 , the model is predictively relevant; if Q^2 is <0 , the model is not predictively relevant (Fornell & Cha, 1994; Hair et al., 2019). The study finds a cross-validated redundancy Q^2 of 0.448 and a cross-validated communality Q^2 of 0.413 for customer loyalty (CL), a cross-validated redundancy Q^2 of 0.185 and a cross-validated communality Q^2 of 0.444 for customer satisfaction (CS), a cross-validated redundancy Q^2 of 0.202 and a cross-validated communality Q^2 of 0.357 for financial switching cost (FSC), a cross-validated redundancy Q^2 of 0.218 and a cross-validated communality Q^2 of 0.329 for procedural switching cost (PSC), a cross-validated redundancy Q^2 of 0.017 and a cross-validated communality Q^2 of 0.380 for relational switching cost (RSC), a cross-validated redundancy Q^2 of 0.021 and a cross-validated communality Q^2 of 0.410 for service value (SV) using an omission distance of 7. As shown in Table 10, this model is regarded as having predictive relevance when the Q^2 value is greater than zero (Fornell & Cha, 1994; Hair et al., 2019), except service quality (SQ).

Discussion

This study investigates the roles of SQ, SV, CS, and SC (procedural, financial, and relational) in producing CL. In addition, it also examines the mediating roles of SC on the SQ-CS and CS-CL relationships.

Our findings substantially support all proposed relationships, except for H1b, H2c and H9c. Our findings contribute to the discussion about the mediating role of different types of SC on the relationships between SV and CL, CS and CL by investigating their roles in the complex linkages among SQ, SV, CS, and CL. In the context of private healthcare in Ho Chi Minh City, this study offers empirical evidence for both the direct and mediating impacts suggested in the hypothesized model.

In addition, this work assumes the viewpoint that the connections between SQ, SV, CS, SC, and CL are intricate and adds several additional elements to the body of prior research in the area. First, SC in this study is broken down into three distinct dimensions: PSC, FSC, and RSC. This contrasts with earlier research, which considered SC as an aggregate construct of some different dimensions for confirming the connection with other constructs. The findings show that the connection between CS and CL is mediated by all three categories of SC, including PSC, FSC, and RSC (Leong et al., 2022; Mathew, 2021). These results provide more evidence for the contradictory findings in earlier studies regarding the mediating effect of SC, either totally or in part (Burnham et al., 2003; Koo et al., 2020; Leong et al., 2022; Mathew, 2021; Matzler et al., 2015; Ngo & Pavelková, 2017; Picón et al., 2014). In a similar vein, both PSC and FSC mediate the SV-CL relationship, while there is no evidence about the mediating effect of RSC on the SV-CL connection (Leong et al., 2022; Mathew, 2021). Again, these findings support either fully or partly the findings in earlier studies about the mediating role of SC (Leong et al., 2022; Lu et al., 2011; Mathew, 2021; Park et al., 2014; Picón-Berjoyo et al., 2016).

When customers interact with the service provider, these mediating mechanisms must be grounded in the SV and CS

Table 9 Products of mediation analysis.

Relationship	Path of mediation	Estimate	P value	Conclusion
Service value → Financial switching costs → Customer Loyalty		0.029	0.018	Partial mediation
Service value → Procedural switching costs → Customer Loyalty		0.093	0.004	Partial mediation
Service value → Relational switching costs → Customer Loyalty		-0.003	0.681	Not supported
Customer satisfaction → Financial switching costs → Customer Loyalty		0.061	0.007	Partial mediation
Customer satisfaction → Procedural switching costs → Customer Loyalty		0.174	0.000	Partial mediation
Customer satisfaction → Relational switching costs → Customer Loyalty		0.017	0.050	Partial mediation

(ns) non-significant at $p < 0.10$; *** $p < 0.001$; ** $p < 0.010$; * $p < 0.050$.

(Ghosh, 2021; Kim, 2019; Sachan et al., 2018). Therefore, if a consumer has had a sufficient number of pleasant encounters with existing service providers, he or she will either naturally or consciously engage more in the connection to develop a personal bond with the provider (Lyu et al., 2022; Rizomyliotis et al., 2020; Solimun & Fernandes, 2018). In order to keep a customer, a service provider may also offer them additional benefits ahead of

other consumers. This exchange may eventually progress to a loyalty bond with time (Lyu et al., 2022; Rizomyliotis et al., 2020; Solimun & Fernandes, 2018). This strategy, which the marketing literature refers to as a co-creation value process, involves both service providers and customers in an active manner. This result affirms the new strategy for fostering enduring relationships between service providers and customers, which sees clients as

Table 10 Blindfolding result: Cv-Communality and Cv-Redundancy.

Block	Cv-Communality H ²	Cv-Redundancy F ²
CL	0.413	0.448
CS	0.444	0.185
FSC	0.357	0.202
PSC	0.329	0.218
RSC	0.380	0.017
SV	0.410	0.021

Source: Authors' calculation.

co-creators (Lyu et al., 2022; Payne & Frow, 2005; Rizomyliotis et al., 2020; Solimun & Fernandes, 2018). In particular, the favorable influence of SV on CL is partly mediated by CS and both types of procedural and financial SC (Lyu et al., 2022; Rizomyliotis et al., 2020; Solimun & Fernandes, 2018). Consequently, switching costs may be an essential step together with customer satisfaction in order to convert a service-satisfied customer fully into a loyalty customer with a stronger emotional connection to their healthcare services (Dayan et al., 2022; Li et al., 2022).

Theoretical implications. The following are some important ways in which this paper considerably expands the theoretical understanding of consumer loyalty. First, despite the fact that prior studies in a variety of areas, including hospitality, service providers, and the banking industry, have confirmed the favorable links between SQ, SV, CS, and CL (Chu et al., 2012; Cronin et al., 2000; Keshavarz & Jamshidi, 2018), there exist very few such studies conducted in the healthcare context, especially private healthcare. Our understanding of CL and its specific determinant in private healthcare is thus expanded and advanced by the findings of this paper. The results of this paper with regard to private healthcare have similar findings to previous studies, albeit in a different context (Brady et al., 2002; Chodzaza & Gombachika, 2013; Keshavarz & Jamshidi, 2018), which enrich the marketing literature in the following ways: (1) SQ and SV are favorably related to CS; (2) SV and CS are favorably associated with each other; (3) SV intervenes between SQ and CS; (4) CS intervenes between SV and CL.

Second, switching costs are investigated in their relationship with CL (Hellier et al., 2003; Picón-Berjoyo et al., 2016). However, there is little research that pays attention to the various forms of switching barrier in that relationship. In this paper, switching costs are conceptualized in three forms including PSC, FSC, and RSC in private healthcare. The three conceptualized forms of SC are very important, and they have contributed to filling such theoretical gaps by linking CL and specific aspects of SC, namely, PSC, FSC, and RSC. As a three-dimensional concept as opposed to a broad concept, the conceptualized SC could provide a more nuanced understanding of SC and CL relationships. Consequently, this work makes a substantial contribution to the systematic assessment of the current literature by highlighting the various SC as an appropriate and effective solution for firms to create a barrier and prevent customers from switching to another firm. The results demonstrate that, in contrast to the other two switching costs, procedural switching costs had the largest impact on switching behavior and loyalty in the setting of private healthcare.

Third, in previous studies that treated switching costs as a moderator in the relationship between CS and CL (Lam et al., 2004; Lee et al., 2001), only a few of these studies have investigated the mediating role of SC on the CS – CL relationship

and SV -CL relationship (Blut et al., 2015; Matzler et al., 2015; Picón-Berjoyo et al., 2016; Vasudevan et al., 2006), yet no study evaluates that role in the three dimensions of SC including PSC, FSC, and RSC in the context of private healthcare. Therefore, our work is the first to examine the three-dimensional SC (procedural, financial, and relational) as mediators of the CS – CL and SV – CL relationships together in the private healthcare sector. Thus, our research has considerably advanced our understanding of how the three forms of SC in the healthcare industry mediate between CS-CL and SV-CL relationships. The empirical findings in this study significantly validate the mediating role of PSC, FSC, and RSC in the effect of CS, and PSC, and FSC in the effect of SV on CL in the private healthcare sector.

Finally, SQ, SV, CS, and CL are four of the most well-known constructs in the relationship marketing literature, and this study is one of the few empirical studies to combine them for the purpose of confirming their interrelationships in the setting of private healthcare in a developing nation like Vietnam. The outcomes of this study, however, also lend support to certain well accepted conclusions from earlier studies in the relationship marketing area (Camarero Izquierdo et al., 2005; Chodzaza & Gombachika, 2013), as indicated below:

- SQ and SV are the antecedents of CS.
- SV and CS are antecedents of CL.
- PSC, FSC, and RSC partially mediate the connection between CS and CL.
- PSC, and FSC partially mediate the connection between SV and CL.

Managerial implications. In addition to its scholarly contributions, the present study has a number of significant managerial implications. First, the findings help supervisors who have overlooked loyalty among clients in the healthcare sector, so that they can conduct the appropriate strategy to retain the connection with their clients. As was already established, CL is very important for organizations, and every company is seeking the 'wow factor' to compete and survive in the market. The manager can develop the marketing strategy based on the research's findings about the attitudes and views of patients toward a hospital. Although quality service has little influence on customer loyalty, administrators and supervisors could use this element to stimulate customer satisfaction and increase value. Service providers need to concentrate on the added value that has satisfied the demand of customers and has improved the quality in the minds of consumers throughout time. Consumers will be more impressed with the healthcare provider's service because of this, and clients will eventually become more faithful, which is crucial for sustaining a long-term connection.

Second, managers should be aware of the following three forms of switching fees that affect customer satisfaction and loyalty: procedural, financial, and relational switching fees. Each switching cost has different mechanisms of impacting customer loyalty and the value-satisfaction-loyalty linkage, and thus helping businesses to overcome inevitable fluctuations in SQ. FSC intervenes with the connection between SV and purchase intent, as well as client satisfaction and retention. As a result, the manager can create a suitable plan to meet the client's satisfaction and then forge a lasting relationship with the customer. Customers typically demand high-value services and financial rewards. Furthermore, switching costs, both procedural and relational, have a beneficial influence on consumer retention, so managers should consider creating the brand among customers, or they could conduct an appropriate procedure to keep customers from turning to other services.

Conclusion

In the private healthcare industry in HCMC, Vietnam, the study's findings support the link between SV, CS, PSC, FSC, and RSC, as well as CL. In other words, in the context of the private healthcare sector, SV, CS, and SC are antecedents of CL. At the same time, the results also highlight that PSC, FSC, and RSC are all mediators in the CS-CL link. PSC, and FSC are both mediators in the SV-CL link. Furthermore, CS is the mediator between SV and CL, and SV is the mediator of the SQ and CL link.

Limitations and future research direction. There are several shortcomings in our research that must be acknowledged. First, this study just investigates SC in the private healthcare sector in HCMC, the biggest and busiest city in Vietnam. Future studies may want to expand the coverage to other areas/regions or other sectors (for example the government sector) in order to have a fuller picture of the influence of SC and CL. Second, only cross-sectional data are collected as part of our study's questionnaire-based survey design. In order to gain a deeper knowledge of the dynamics of SC between SV and CL and CS and CL, future studies may gather longitudinal data to analyze the differences of SC, SV, SQ, CS, and CL. Finally, our work adopts the convenience sampling approach which restricts the findings' external validity. Future research may want to apply a probability sampling method, such as a stratified or cluster random sampling method in order to improve the findings' external validity.

Data availability

All data generated or analyzed during this study are included in this published paper and its supplementary file.

Received: 29 August 2022; Accepted: 26 May 2023;

Published online: 06 June 2023

References

- Aaker DA, Jacobson R (1994) The Financial Information Content of Perceived Quality. *J Marketing Res* 31(2):191–201. <https://doi.org/10.1177/002224379403100204>
- Agus A (2004) TQM as a Focus for Improving Overall Service Performance and Customer Satisfaction: an Empirical Study on a Public Service Sector in Malaysia. *Total Quality Manag Business Excell* 15(5–6):615–628. <https://doi.org/10.1080/14783360410001680107>
- Anderson EW, Fornell C, Lehmann DR (1994) Customer Satisfaction, Market Share, and Profitability: Findings from Sweden. *J Marketing* 58(3):53–66. <https://doi.org/10.1177/002224299405800304>
- Anderson EW, Sullivan MW (1993) The Antecedents and Consequences of Customer Satisfaction for Firms. *Marketing Sci* 12(2):125–143. <https://doi.org/10.1287/mksc.12.2.125>
- Asimakopoulos G, Asimakopoulos S (2014) Understanding switching intention of information systems users. *Industrial Manag Data Syst* 114(4):583–596. <https://doi.org/10.1108/IMDS-10-2013-0412>
- Astuti HJ, Nagase K (2014) Patient loyalty to health care organizations: Strengthening and weakening (satisfaction and provider switching). *J Med Marketing* 14(4):191–200. <https://doi.org/10.1177/1745790415578311>
- Augusto de Matos C, Luiz Henrique J, de Rosa F (2009) The different roles of switching costs on the satisfaction-loyalty relationship. *Int J Bank Marketing* 27(7):506–523. <https://doi.org/10.1108/02652320911002331>
- Aydin S, Özer G, Arasil Ö (2005) Customer loyalty and the effect of switching costs as a moderator variable. *Marketing Intellig Planning* 23(1):89–103. <https://doi.org/10.1108/02634500510577492>
- Bansal HS, Taylor SF (1999) The Service Provider Switching Model (SPSM): A Model of Consumer Switching Behavior in the Services Industry. *J Serv Res* 2(2):200–218. <https://doi.org/10.1177/109467059922007>
- Beatty SE, Mayer M, Coleman JE, Reynolds KE, Lee J (1996) Customer-sales associate retail relationships. *J Retailing* 72(3):223–247. [https://doi.org/10.1016/S0022-4359\(96\)90028-7](https://doi.org/10.1016/S0022-4359(96)90028-7)
- Berli A, Martín JD, Quintana A (2004) A model of customer loyalty in the retail banking market. *Eur J Marketing* 38(1/2):253–275. <https://doi.org/10.1108/03090560410511221>
- Bitner MJ, Booms BH, Tetreault MS (1990) The Service Encounter: Diagnosing Favorable and Unfavorable Incidents. *J Marketing* 54(1):71–84. <https://doi.org/10.1177/002224299005400105>
- Bitner MJ, Hubbert AR (1994) Encounter satisfaction versus overall satisfaction versus quality. *Service Qual: New Direct Theory Pract* 34(2):72–94
- Bloemer JM, Kasper HDP (1995) The complex relationship between consumer satisfaction and brand loyalty. *J Econ Psychol* 16(2):311–329. [https://doi.org/10.1016/0167-4870\(95\)00007-B](https://doi.org/10.1016/0167-4870(95)00007-B)
- Blut M, Frennea CM, Mittal V, Mothersbaugh DL (2015) How procedural, financial and relational switching costs affect customer satisfaction, repurchase intentions, and repurchase behavior: a meta-analysis. *Int J Res Marketing* 32(2):226–229. <https://doi.org/10.1016/j.ijresmar.2015.01.001>
- Bolton RN, Drew JH (1991) A multistage model of customers' assessments of service quality and value. *J Consum Res* 17(4):375–384
- Bolton RN, Lemon KN (1999) A dynamic model of customers' usage of services: Usage as an antecedent and consequence of satisfaction. *J Marketing Res* 36(2):171–186
- Brady MK, Cronin JJ, Brand RR (2002) Performance-only measurement of service quality: a replication and extension. *J Business Res* 55(1):17–31. [https://doi.org/10.1016/S0148-2963\(00\)00171-5](https://doi.org/10.1016/S0148-2963(00)00171-5)
- Burnham TA, Frels JK, Mahajan V (2003) Consumer Switching Costs: A Typology, Antecedents, and Consequences. *J Acad Marketing Sci* 31(2):109–126. <https://doi.org/10.1177/0092070302250897>
- Buzzell RD, Gale BT (1987) *The PIMS principles: Linking strategy to performance.* The Free Press, Simon and Schuster
- Camarero Izquierdo C, Gutiérrez Cillán J, San Martín Gutiérrez S (2005) The impact of customer relationship marketing on the firm performance: a Spanish case. *J Serv Marketing* 19(4):234–244. <https://doi.org/10.1108/08876040510605262>
- Chakraborty D, Bhatnagar SB, Biswas W, Dash G (2022) The Subtle Art of Effecting a Four-day Workweek to Drive Performance. *Manag Labour Studies* 47(3):275–297. <https://doi.org/10.1177/0258042x221082893>
- Chang HH, Wang Y-H, Yang W-Y (2009) The impact of e-service quality, customer satisfaction and loyalty on e-marketing: Moderating effect of perceived value. *Total Quality Manag Business Excell* 20(4):423–443. <https://doi.org/10.1080/14783360902781923>
- Chang T-Y, Huang S-W (2022) Factors Influencing the Reputation of Assistive Technology Resources Center: An Example from Yunlin County, Taiwan. *Healthcare* 10(2):243. <https://www.mdpi.com/2227-9032/10/2/243>
- Chen M-F, Wang L-H (2009) The moderating role of switching barriers on customer loyalty in the life insurance industry. *Serv Industries J* 29(8):1105–1123. <https://doi.org/10.1080/02642060902764574>
- Chin WW, Thatcher JB, Wright RT, Steel D (2013) Controlling for Common Method Variance in PLS Analysis: The Measured Latent Marker Variable Approach. In: Abdi H, Chin W, Esposito Vinzi V, Russolillo G, Trinchera L (eds) *New Perspectives in Partial Least Squares and Related Methods.* Springer Proceedings in Mathematics & Statistics, vol 56. Springer, New York, NY. https://doi.org/10.1007/978-1-4614-8283-3_16
- Chiu YB, Lin CP, Tang LL (2005) Gender differs: assessing a model of online purchase intentions in e-tail service. *Int J Serv Industry Manag* 16(5):416–435. <https://doi.org/10.1108/09564230510625741>
- Chodzaza GE, Gombachika HSH (2013) Service quality, customer satisfaction and loyalty among industrial customers of a public electricity utility in Malawi. *Int J Energy Sector Manag* 7(2):269–282. <https://doi.org/10.1108/IJESM-02-2013-0003>
- Chu P-Y, Lee G-Y, Chao Y (2012) Service quality, customer satisfaction, customer trust, and loyalty in an e-banking context. *Soc Behav Personal* 40(8):1271–1283
- Colgate M, Tong VT-U, Lee CK-C, Farley JU (2007) Back From the Brink: Why Customers Stay. *J Serv Res* 9(3):211–228. <https://doi.org/10.1177/1094670506295849>
- Cowherd DM, Levine DI (1992) Product Quality and Pay Equity Between Lower-Level Employees and Top Management: An Investigation of Distributive Justice Theory. *Administrative Sci Quart* 37(2):302–320. <https://doi.org/10.2307/2393226>
- Cronin JJ, Brady MK, Hult GTM (2000) Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *J Retailing* 76(2):193–218. [https://doi.org/10.1016/S0022-4359\(00\)00028-2](https://doi.org/10.1016/S0022-4359(00)00028-2)
- Dabholkar PA (1995) A Contingency Framework For Predicting Causality Between Customer Satisfaction and Service Quality. *Adv Consum Res* 22:101–108
- Dagger TS, David ME (2012) Uncovering the real effect of switching costs on the satisfaction-loyalty association. *Eur J Marketing* 46(3/4):447–468. <https://doi.org/10.1108/03090561211202558>
- Dayan M, Al Kuwaiti IA, Husain Z, Ng PY, Dayan A (2022) Factors influencing patient loyalty to outpatient medical services: an empirical analysis of the

- UAE's government healthcare system. *Int J Quality Reliabil Manag* 39(1):176–203. <https://doi.org/10.1108/IJQRM-11-2020-0373>
- Dodds WB, Monroe KB, Grewal D (1991) Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. *J Marketing Res* 28(3):307–319. <https://doi.org/10.1177/002224379102800305>
- Fornell C (1992) A National Customer Satisfaction Barometer: The Swedish Experience. *J Marketing* 56(1):6–21. <https://doi.org/10.1177/002224299205600103>
- Fornell C, Cha J (1994) Partial least squares. In Bagozzi RP (ed), *Advanced marketing research*, John Wiley & Sons, pp. 52–78
- Garson GD (2016) *Partial least squares. Regression and structural equation models*. Statistical Publishing Associates
- Gaskill S, & Nguyen LH (2015). The Vietnamese healthcare industry: moving to next level. <https://www.pwc.com/vn/en/advisory/deals/assets/the-vietnamese-healthcare-industry-moving-to-next-level-pwc-vietnam-en.pdf>
- Geisser S (1975) The Predictive Sample Reuse Method with Applications. *J Am Statistical Assoc* 70(350):320–328. <https://doi.org/10.1080/01621459.1975.10479865>
- Ghosh M (2021) Understanding the relationship of self-service technology quality with user adoption using SSTQUAL. *TQM J* 33(2):293–314. <https://doi.org/10.1108/TQM-12-2019-0291>
- Ha MT (2022). Data Collection Using Online Questionnaires in Marketing. In *SAGE Research Methods Cases*. SAGE Publications, p 1–12. <https://doi.org/10.4135/9781529603569>
- Hair JF, Risher JJ, Sarstedt M, Ringle CM (2019) When to use and how to report the results of PLS-SEM. *Eur Business Rev* 31(1):2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hair JF, Sarstedt M, Ringle CM, Mena JA (2012) An assessment of the use of partial least squares structural equation modeling in marketing research. *J Acad Marketing Sci* 40(3):414–433
- Heide JB, Weiss AM (1995) Vendor Consideration and Switching Behavior for Buyers in High-Technology Markets. *J Marketing* 59(3):30–43. <https://doi.org/10.1177/002224299505900303>
- Hellier PK, Geursen GM, Carr RA, Rickard JA (2003) Customer repurchase intention. *Eur J Marketing* 37(11/12):1762–1800. <https://doi.org/10.1108/03090560310495456>
- Henseler J, Hubona G, Ray PA (2016) Using PLS path modeling in new technology research: updated guidelines. *Industrial Manag Data Syst* 116(1):2–20. <https://doi.org/10.1108/IMDS-09-2015-0382>
- Henseler J, Ringle CM, Sarstedt M (2015) A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J Acad Marketing Sci* 43(1):115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Heskett JL, Jones TO, Loveman GW, Sasser WE, Schlesinger LA (1994) Putting the service-profit chain to work. *Harvard Business Rev* 72(2):164–174
- Hinson R, Mohammed A, Mensah R (2006) Determinants of Ghanaian bank service quality in a universal banking dispensation. *Banks Bank Syst* 1(Nº 2):69–81
- Ho Chi Minh City DOH (2019) Inpatients' Experience Survey in Ho Chi Minh City in 2019. Accessed July 25, 2021. <http://www.medinet.hochiminhcity.gov.vn/quan-ly-chat-luong-kham-choa-benh/ket-quakhao-sat-trai-nghiemi-nguoi-benh-noi-tru-tai-cac-benh-vien-tren-diaban-c8-16295.aspx>
- Huang P-L, Lee BCY, Chen C-C (2019) The influence of service quality on customer satisfaction and loyalty in B2B technology service industry. *Total Quality Manag Business Excell* 30(13–14):1449–1465. <https://doi.org/10.1080/14783363.2017.1372184>
- Jones MA, Mothersbaugh DL, Beatty SE (2000) Switching barriers and repurchase intentions in services. *J Retailing* 76(2):259–274. [https://doi.org/10.1016/S0022-4359\(00\)00024-5](https://doi.org/10.1016/S0022-4359(00)00024-5)
- Jones TO, Sasser WE (1995) Why satisfied customers defect. *Harvard Business Rev* 73(6):88–91
- Keshavarz Y, Jamshidi D (2018) Service quality evaluation and the mediating role of perceived value and customer satisfaction in customer loyalty. *Int J Tour Cities* 4(2):220–244. <https://doi.org/10.1108/IJTC-09-2017-0044>
- Kim J (2019) Customers' value co-creation with healthcare service network partners. *J Serv Theory Pract* 29(3):309–328. <https://doi.org/10.1108/JSTP-08-2018-0178>
- Kim M-K, Park M-C, Park J-H, Kim J, Kim E (2018) The role of multidimensional switching barriers on the cognitive and affective satisfaction-loyalty link in mobile communication services: Coupling in moderating effects. *Comput Human Behav* 87:212–223. <https://doi.org/10.1016/j.chb.2018.05.024>
- Kock N (2015) Common Method Bias in PLS-SEM: A Full Collinearity Assessment Approach. *Int J e-Collaboration (ijec)* 11(4):1–10. <https://doi.org/10.4018/ijec.2015100101>
- Kock N (2017). Common Method Bias: A Full Collinearity Assessment Method for PLS-SEM. In Latan H & Noonan R (Eds), *Partial Least Squares Path Modeling: Basic Concepts, Methodological Issues and Applications*. Springer International Publishing, p 245–257. https://doi.org/10.1007/978-3-319-64069-3_11
- Koo B, Yu J, Han H (2020) The role of loyalty programs in boosting hotel guest loyalty: Impact of switching barriers. *Int J Hospitalit Manag* 84:102328. <https://doi.org/10.1016/j.ijhm.2019.102328>
- Kotler P (1997) *Marketing Management: Analysis, Planning, Implementation, and Control*. 9th Edition, Prentice Hall
- Koushan D (2018). Vietnam: Growing Demand for Healthcare Services. <https://www.vietnam-briefing.com/news/vietnam-growing-demand-healthcare-services.html/>
- Kumar V, Shah D (2004) Building and sustaining profitable customer loyalty for the 21st century. *J Retailing* 80(4):317–329. <https://doi.org/10.1016/j.jretai.2004.10.007>
- Lam SY, Shankar V, Erramilli MK, Murthy B (2004) Customer Value, Satisfaction, Loyalty, and Switching Costs: An Illustration From a Business-to-Business Service Context. *J Acad Marketing Sci* 32(3):293–311. <https://doi.org/10.1177/0092070304263330>
- Le SM, Govindaraj R, & Bredekamp C (2020) Public-Private Partnerships for Health in Vietnam: Issues and Options. World Bank Publications. Accessed July 25, 2021. <https://openknowledge.worldbank.org/entities/publication/59663cf3-c893-51eb-8fe3-e9d8cd2e7c8c>
- Lee C-H, Kim H-R (2022) Positive and negative switching barriers: promoting hotel customer citizenship behaviour through brand attachment. *Int J Contemporary Hospitalit Manag* 34(11):4288–4311. <https://doi.org/10.1108/IJCHM-10-2021-1280>
- Lee J, Lee J, Feick L (2001) The impact of switching costs on the customer satisfaction-loyalty link: mobile phone service in France. *J Serv Marketing* 15(1):35–48. <https://doi.org/10.1108/08876040110381463>
- Leong VS, Hj Ahady DM, Muhamad N (2022) Corporate image as an enabler of customer retention. *Int J Quality Serv Sci* 14(3):486–503. <https://doi.org/10.1108/IJQSS-08-2021-0115>
- Li Y, Ndubisi NO, Xu J, Li G (2022) Do switching costs hurt new product development performance? The role of relationship quality and customer involvement. *Manag Decision* 60(9):2552–2571. <https://doi.org/10.1108/MD-10-2021-1321>
- Lin H-H, Wang Y-S (2006) An examination of the determinants of customer loyalty in mobile commerce contexts. *Inform Manag* 43(3):271–282. <https://doi.org/10.1016/j.im.2005.08.001>
- Lindell MK, Whitney DJ (2001) Accounting for Common Method Variance in Cross-Sectional Research Designs. *J Appl Psychol* 86(1):114–121. <https://doi.org/10.1037/0021-9010.86.1.114>
- Lombardi, G (2012). How to Use Social Media to Cultivate Patient Loyalty. <https://www.dentaleconomics.com/articles/print/volume-102/issue-12/technology-needs/how-to-use-social-media-to-cultivate-patient-loyalty.html>
- Lu T, Tu R, Jen W (2011) The role of service value and switching barriers in an integrated model of behavioural intentions. *Total Qual Manag Business Excell* 22(10):1071–1089. <https://doi.org/10.1080/14783363.2011.614867>
- Lyu VC, Roldán JL, Chin W, Liu V, Li C (2022) Value or image? The effects of restaurant-supplier co-creation on consumers' behavioral intentions. *Br Food J* 124(3):795–810. <https://doi.org/10.1108/BFJ-03-2021-0220>
- Malhotra, NK (2019) *Marketing Research: An Applied Orientation*, 7th Edition. Pearson
- Mano H, Oliver RL (1993) Assessing the dimensionality and structure of the consumption experience: evaluation, feeling, and satisfaction. *J Consum Res* 20(3):451–466
- Mascarenhas OA, Kesavan R, Bernacchi M (2006) Lasting customer loyalty: a total customer experience approach. *J Consum Marketing* 23(7):397–405. <https://doi.org/10.1108/07363760610712939>
- Mathew J (2021). Drivers of Customer Retention: An Introspection Into Indian Retail Customers. *Vision (New Delhi, India)*, 97226292110435. <https://doi.org/10.1177/09722629211043592>
- Matzler K, Strobl A, Thurner N, Füller J (2015) Switching experience, customer satisfaction, and switching costs in the ICT industry. *J Serv Manag* 26(1):117–136. <https://doi.org/10.1108/JOSM-04-2014-0101>
- McAlexander JH, Kaldenberg DO, Koenig HF (1994) Measuring service quality. *J Health Care Marketing* 14(3):34–40
- Mittal V, Kamakura WA (2001) Satisfaction, Repurchase Intent, and Repurchase Behavior: Investigating the Moderating Effect of Customer Characteristics. *JMarketing Res* 38(1):131–142. <https://doi.org/10.1509/jmkr.38.1.131.18832>
- Ngo MV, Phan QPT, Nguyen NV, & Vu HM (2019) The mediating effects of switching costs on the relationship between service quality, customer satisfaction and customer loyalty: a study in retail banking industry in Vietnam. *Int J Supply Chain Manag* 8(2):389–393. <http://ojs.excelingtech.co.uk/index.php/IJSCM/article/view/2125>
- Ngo VM, Pavelková D (2017) Moderating and mediating effects of switching costs on the relationship between service value, customer satisfaction and customer loyalty: investigation of retail banking in Vietnam. *J Int Stud* 10(1):9–33
- OECD, & WHO. (2016). *Health at a Glance: Asia/Pacific 2016: Measuring Progress towards Universal Health Coverage*. OECD. https://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-asia-pacific-2016_health_glance_ap-2016-en
- Oliver RL (1999) Whence Consumer Loyalty. *J Marketing* 63(4_suppl1):33–44. <https://doi.org/10.1177/00222429990634s105>
- Oliver RL, Swan JE (1989) Consumer Perceptions of Interpersonal Equity and Satisfaction in Transactions: A Field Survey Approach. *J Marketing* 53(2):21–35. <https://doi.org/10.1177/002224298905300202>
- Open to Export. (2022). Healthcare sector in Vietnam. <https://opentoexport.com/article/healthcare-sector-in-vietnam/>

- Pan Y, Sheng S, Xie FT (2012) Antecedents of customer loyalty: An empirical synthesis and reexamination. *J Retailing Consum Serv* 19(1):150–158. <https://doi.org/10.1016/j.jretconser.2011.11.004>
- Parasuraman A, Grewal D (2000) The impact of technology on the quality-value-loyalty chain: a research agenda. *J Acad Marketing Sci* 28(1):168–174
- Park J-G, Park K, Lee J (2014) A firm's post-adoption behavior: loyalty or switching costs. *Industr Manag Data Syst* 114(2):258–275. <https://doi.org/10.1108/IMDS-06-2013-0259>
- Payne A, Frow P (2005) A Strategic Framework for Customer Relationship Management. *J Marketing* 69(4):167–176. <https://doi.org/10.1509/jmkg.2005.69.4.167>
- Picón-Berjoyo A, Ruiz-Moreno C, Castro I (2016) A mediating and multigroup analysis of customer loyalty. *Eur Manag J* 34(6):701–713. <https://doi.org/10.1016/j.emj.2016.07.006>
- Picón A, Castro I, Roldán JL (2014) The relationship between satisfaction and loyalty: A mediator analysis. *J Business Res* 67(5):746–751. <https://doi.org/10.1016/j.jbusres.2013.11.038>
- Pişgin A, Ateşoğlu İ (2015) The effects of customer satisfaction and switching costs on customer loyalty in health care. *J Business Res Turk* 7(4):251–271
- Podsakoff PM, MacKenzie SB, Lee J-Y, Podsakoff NP (2003) Common method biases in behavioral research: A critical review of the literature and recommended remedies. *J Appl Psychol* 88(5):879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Podsakoff PM, MacKenzie SB, Podsakoff NP (2012) Sources of Method Bias in Social Science Research and Recommendations on How to Control It. *Ann Rev Psychol* 63(1):539–569. <https://doi.org/10.1146/annurev-psych-120710-100452>
- Porter ME (1980) Industry Structure and Competitive Strategy: Keys to Profitability. *Finan Analysts J* 36(4):30–41. <https://doi.org/10.2469/faj.v36.n4.30>
- Price LL, Arnould EJ (1999) Commercial Friendships: Service Provider–Client Relationships in Context. *J Marketing* 63(4):38–56. <https://doi.org/10.1177/002224299906300405>
- Reza Islamy M, D. Trisnawati J, Rahayu S (2022) The Effect of Perceived Service Quality, Perceived Value, Destination Image, Attitude to Visiting Behavior, Tourist Satisfaction on Tourist Loyalty. *J Entrepreneur Business* 3(1):35–48. <https://doi.org/10.24123/jeb.v3i1.4827>
- Ringle CM, Wende S, Becker JM (2015) SmartPLS3. SmartPLS, Boenningstedt
- Rizomyliotis I, Poulis A, Apostolos G, Konstantoulaki K, Kostopoulos I (2020) Applying FCM to predict the behaviour of loyal customers in the mobile telecommunications industry. *J Strategic Marketing* 28(1):1–15. <https://doi.org/10.1080/0965254X.2018.1479720>
- Sachan A, Kumar R, Kumar R (2018) Examining the impact of e-government service process on user satisfaction. *J Glob Oper Strateg Sourc* 11(3):321–336. <https://doi.org/10.1108/jgoss-11-2017-0048>
- Sharma R, Yetton P, Crawford J (2009) Estimating the Effect of Common Method Variance: The Method—Method Pair Technique with an Illustration from TAM Research. *MIS Quart* 33(3):473–490. <https://doi.org/10.2307/20650305>
- Shie A-J, Huang Y-F, Li G-Y, Lyu W-Y, Yang M, Dai Y-Y, Su Z-H, Wu YJ (2022) Exploring the relationship between hospital service quality, patient trust, and loyalty from a service encounter perspective in elderly with chronic diseases. *Front public health* 10:876266. <https://doi.org/10.3389/fpubh.2022.876266>
- Simmering MJ, Fuller CM, Richardson HA, Ocal Y, Atinc GM (2015) Marker Variable Choice, Reporting, and Interpretation in the Detection of Common Method Variance: A Review and Demonstration. *Organizational Res Methods* 18(3):473–511. <https://doi.org/10.1177/1094428114560023>
- Sirdeshmukh D, Singh J, Sabol B (2002) Consumer Trust, Value, and Loyalty in Relational Exchanges. *J Marketing* 66(1):15–37. <https://doi.org/10.1509/jmkg.66.1.15.18449>
- Solimun S, Fernandes AAR (2018) The mediation effect of customer satisfaction in the relationship between service quality, service orientation, and marketing mix strategy to customer loyalty. *J Manag Dev* 37(1):76–87. <https://doi.org/10.1108/JMD-12-2016-0315>
- Srivastava N, Mishra A, Dwivedi YK (2022) Investigating Antecedents of Adoption Intention for Audiobook Applications. *J Comput Inform Syst* 62(4):765–777. <https://doi.org/10.1080/08874417.2021.1913672>
- Stone M (1974) Cross-validated choice and assessment of statistical predictions. *J Royal Stat Soc: Series B (Methodological)* 36(2):111–133
- Sumaedi S, Bakti IGM, Rakhmawati T, Astrini NJ, Yarmen M, Widiyanti T (2015) Patient loyalty model. *Leadership Health Serv* 28(3):245–258. <https://doi.org/10.1108/LHS-03-2014-0021>
- Tan PSH, Choong YO, Chen IC (2022) The effect of service quality on behavioural intention: the mediating role of student satisfaction and switching barriers in private universities. *J Appl Res Higher Educ* 14(4):1394–1413. <https://doi.org/10.1108/JARHE-03-2021-0122>
- Taylor SA, Baker TL (1994) An assessment of the relationship between service quality and customer satisfaction in the formation of consumers' purchase intentions. *J Retailing* 70(2):163–178
- Urbany JE (1986) An experimental examination of the economics of information. *J Consum Res* 13(2):257–271
- Vasudevan H, Gaur SS, Shinde RK (2006) Relational switching costs, satisfaction and commitment. *Asia Pacific J Marketing Logistics* 18(4):342–353. <https://doi.org/10.1108/13555850610703281>
- Vietnam Central Steering Committee for the Census of Rural Areas (2016) Preliminary Report of the Results of the Census of Rural Areas, Agriculture and Aquaculture. Statistical Publishing House. Accessed July 21, 2022. <https://www.gso.gov.vn/du-lieu-va-so-lieu-thong-ke/2019/03/bao-cao-so-bo-ket-qua-tong-dieu-tra-nong-thon-nong-nghiep-va-thuy-san-nam-2016/>
- Vietnam Times. (2020). Vietnam healthcare market, a big draw for investors. <https://vietnamtimes.org.vn/vietnam-healthcare-market-a-big-draw-for-investors-18974.html>
- Wu H-C, Cheng C-C, Ai C-H (2021) What drives green experiential loyalty towards green restaurants. *Tourism Rev* 76(5):1084–1103. <https://doi.org/10.1108/TR-02-2019-0079>
- Yang C-C, Chao C-C (2017) How relationship marketing, switching costs, and service quality impact customer satisfaction and loyalty in Taiwan's airfreight forwarding industry? *Transportmetrica A Transport Sci* 13(8):679–707. <https://doi.org/10.1080/23249935.2017.1321696>
- Zargar P, Farmanesh P (2021) Satisfaction and Loyalty in Local Food Festival: Do Switching Barriers Matter. *SAGE Open* 11(4):21582440211050382. <https://doi.org/10.1177/21582440211050382>
- Zeithaml VA, Berry LL, Parasuraman A (1996) The Behavioral Consequences of Service Quality. *J Marketing* 60(2):31–46. <https://doi.org/10.1177/002224299606000203>
- Zhou W-J, Wan Q-Q, Liu C-Y, Feng X-L, Shang S-M (2017) Determinants of patient loyalty to healthcare providers: an integrative review. *Int J Qual Health Care* 29(4):442–449

Author contributions

Conceptualization: M-TH; Methodology: M-TH, G-DN, B-SD; Formal analysis and investigation: M-TH, G-DN, B-SD; Writing—original draft preparation: M-TH, G-DN; Writing—review and editing: M-TH, G-DN, B-SD; Validation: M-TH, G-DN; Resources: M-TH, G-DN, B-SD; Supervision: M-TH.

Competing interests

The authors declare no competing interests.

Ethical approval

Ethical approval for this type of study is not required by our institute as this study does not contain any sensitive or private information.

Informed consent

The participants were informed during the recruitment process that their participation was voluntary and that all information was treated with confidentiality. The participants were also informed that they had the right to withdraw from the study and were asked to tick the consent box before proceeding with the survey completion.

Additional information

Supplementary information The online version contains supplementary material available at <https://doi.org/10.1057/s41599-023-01797-6>.

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