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# Examine the Effects of Customer Satisfaction on Customer Loyalty: An Empirical Study in the Healthcare Insurance Industry in Hong Kong

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## **Authors' contributions**

*Authors RW and CT conceptualized the study and organized the Literature. Author RW performed the statistical analysis. Author AW checked the design of the whole study and statistical analysis. Author CT read and approved the final manuscript.*

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## ABSTRACT

**Aims:** Customer loyalty, which is affected by satisfaction, brand preference and switching costs, is an important concept in service industries as it is known to increase market share and revenue while bringing down the cost of acquiring and retaining customers. Healthcare insurance is one such service industry and it is currently the focus of attention in Hong Kong due to the introduction of an insurance-based healthcare plan for its citizens. In the past decade, a number of empirical studies related to healthcare have been conducted in Western countries. However, in order to acquire a better understanding of customer loyalty in the context of healthcare insurance in Hong Kong it was considered essential to conduct an in-depth study in that special administrative region of China. The objectives of the research were to determine the following: the direct effects of customer satisfaction on customer loyalty; the direct effects of customer satisfaction on brand preference; the direct effects of brand preference on customer loyalty; the direct effects of customer satisfaction on switching costs; the direct effects of switching costs on customer loyalty; the direct effects of switching costs on brand preference; the mediating effects of brand preference on the causal relationship between customer satisfaction and customer loyalty; the mediating effects of switching costs on the causal relationship between customer satisfaction and customer loyalty; and the mediating effects of brand preference on the causal relationship between switching costs

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and customer loyalty.

**Study Design:** This study employed positivism paradigm, cross-sectional and quantitative study.

**Place and Duration of Study:** The study was taken in Hong Kong between June 2011 and June 2012.

**Methodology:** The research methodology of this study involved a questionnaire survey of over five hundred respondents and quantitative analysis of the collected data using structural equation modeling.

**Results:** The results indicate that: customer satisfaction has a positive direct effect on customer loyalty; customer satisfaction has a positive direct effect on brand preference; brand preference has a positive direct effect on customer loyalty; customer satisfaction has a positive direct effect on switching costs; switching costs have a positive direct effect on customer loyalty; switching costs have a positive direct effect on brand preference; the influence of customer satisfaction on customer loyalty is mediated by brand preference; the influence of customer satisfaction on customer loyalty is mediated by switching costs; and that the influence of switching costs on customer loyalty is mediated by brand preference.

**Conclusion:** The research findings provide new and useful insights for the managers of healthcare insurance providers in Hong Kong that will help them understand their customers better.

*Keywords: Customer satisfaction; customer loyalty; switching cost; brand preference; healthcare; Hong Kong.*

## 1. INTRODUCTION

The Hong Kong Special Administrative Region (HKSAR), hereinafter also referred to as Hong Kong, has traditionally demonstrated a strong social responsibility for the healthcare of its permanent residents [1]. Public spending in healthcare increased from around HK\$250 billion in 2007-08 to over HK\$418 billion in 2012-13. This nearly 70% increase is significantly more than 21% GDP growth during the same period. Out of the three society-related sectors, education, infrastructure and health, health has received a great deal of public attention in recent years. During the last few years, the Hong Kong government has increased their expenditure substantially to improve healthcare services. The estimated spending on healthcare is \$45 billion for 2012-13, a more than 40% increase when compared with 2007-08 [2]. With this continuous increase in spending, specialist services and healthcare facilities, including in-patient service capacity, neonatal intensive care and mental illness service for the public, have been constantly upgraded and expanded [2]. At the same time, the Hong Kong government is progressively reforming its healthcare service, including improving primary care, encouraging public-private partnership, as well as establishing a hospital accreditation and an electronic health record sharing system. The healthcare reform comprises three initiatives: a review of healthcare manpower strategy, enhancing healthcare service development, and establishing a regulatory framework for the Health Protection Scheme (HPS). These reforms are expected to be gradually put into place in 2013 [2] to provide better health care services to the public.

## **1.1 Background of the Study**

Hong Kong will be facing accelerated population ageing in the next few decades [3]. The increasing age profile of Hong Kong residents and increased costs due to advanced medical technologies pose significant challenges to public healthcare spending. The increasingly aged population has increased demand for public healthcare services, resulting in a rapid and substantial boost in public healthcare expenditure [1]. In order to reduce overall public spending on healthcare services, it was proposed that a voluntary supplementary financing scheme, the HPS should be implemented with more protection options available to residents who subscribe to private health insurance and use private healthcare services. Since it was relatively cheap, patients traditionally relied heavily on public healthcare services. However, with increasing consultation and drug fees from public healthcare service providers, and with more choices available, more patients are likely to evaluate their medical coverage and decide whether to stay with their existing healthcare service provider. It seems that only a few studies conducted in the healthcare sector have focused on customer satisfaction, brand preference, switching cost and loyalty, with limited attention paid to Hong Kong [1].

## **1.2 The Healthcare Insurance Industry in Hong Kong**

The Office of the Commissioner of Insurance, a Hong Kong government department, regulates all insurance operators in Hong Kong. However, the Hong Kong government recently announced a proposal to establish an Independent Insurance Authority (IIA) to regulate the insurance industry and to ensure consistent regulation. The intention is that the newly proposed IIA will enhance the current regulations resulting in better consumer protection [4]. The Hong Kong government is intending to provide greater protection for its citizen through the proposed HPS. The government has reserved HK\$50 billion to support the scheme [2], which together with contributions from residents will become the insurer's operational revenue. This proposed voluntary HPS is in fact private health insurance coverage for individual Hong Kong residents [1]. It is anticipated that with this private health insurance coverage, Hong Kong residents may have the option of choosing doctors and scheduling routine check-ups. Furthermore, policyholders will have more accessibility to higher quality medical services than what is available from public hospitals [5]. Insurance companies will not easily forego this opportunity and will try to obtain as big a market share as they possibly can. A better understanding of the relationships among customer satisfaction, brand preference, switching costs and customer loyalty will certainly help them to enhance their competitiveness and achieve this objective.

## **2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT**

The following provides a summary of the literature related to customer satisfaction, brand preference, switching cost and customer loyalty in the context of the healthcare industry in Hong Kong.

### **2.1 Customer Satisfaction**

Customer satisfaction is the most important element of marketing. The goal of marketing is to serve business and the goal of most businesses is to provide goods and services to satisfy the needs of customers in return for a profit [6]. However, to achieve, enhance and maximise customer satisfaction requires a lot of tangible and intangible resources. Before addressing how customer satisfaction serves business, it is important to explore the nature

of customer satisfaction and to understand how this concept relates to its antecedents and consequences, as well as how it operates in Hong Kong's healthcare insurance industry.

Customer satisfaction is the key determinant of success in the service industry [7,8]. Satisfaction is achieved when the needs and expectations of customers are met or exceeded. Marketing research on customer satisfaction can be broadly classified into two categories: one focuses on studying the customer satisfaction gaps while the other focuses on the antecedents of customer satisfaction [9,10,11]. The first category of customer satisfaction research is diagnostic in nature, aimed at discovering the service gaps that cause customer dissatisfaction using a wide range of market survey methods [12,13]. The latter category of customer satisfaction research explores the antecedents and / or consequences of customer satisfaction and the moves to be taken to manage the antecedents so that the best consequences can be realized [14,15,16]. As the ultimate aim of both research categories is to improve and enhance customer satisfaction by providing customer-centric services, the two approaches are in fact complementary instead of mutually exclusive to one another.

### **2.1.1 Consequences of customer satisfaction**

The common theme that permeates the discussion of customer satisfaction is how satisfaction affects a customer's purchase intentions and the benefits across the value chain once the intentions are acted upon. Although a plethora of research has been conducted to determine what these benefits are [17], the following three have been recognized as the most notable in the context of service offerings: (1) increased revenue, (2) decreased cost, and (3) lower price elasticity [18,19,20]. One obvious benefit of higher customer satisfaction is increased revenue [18,19]. It has been found that satisfied customers tend to buy more from providers that they are happy with [21]. Moreover, customers are more likely to give positive comments about the services offered by the providers that they are satisfied with and are more likely to recommend the offering to others who he / she thinks will also benefit [20]. With increased purchases from satisfied customers, as well as additional sales from those who have taken in the satisfied customers' advice, revenue from the sales of the offering will increase [18,19].

Empirical studies have found that customer satisfaction can decrease transaction cost because satisfied customers have better knowledge about the services provided [18,19] and therefore would have less demand for both pre-sales and after-sales services. Satisfied customers help spread positive word of mouth and because of their positive evaluations of the services offered and the importance of their efforts on attracting new customers, they play a significant part in reducing the cost of customer acquisition [19,20].

It is a principle of supply and demand that when price increases, demand reduces. However, studies suggest that when there is an increase in price, high customer satisfaction can decrease price elasticity [19]. In other words, satisfied customers have a higher tolerance towards increased service charges [20]. This is because highly satisfied customers value the relationship with the service providers, perceive higher value and higher quality from the services offered, and therefore perceive higher switching costs towards competitive efforts and have a lower propensity to switch [22].

### **2.1.2 Customer satisfaction in the healthcare insurance industry**

Compared to other services such as financial and tourism, customer satisfaction in the healthcare insurance industry is a much less studied subject despite the size and volume of business of this particular industry [23]. One possible explanation for this is that the intangible and complex service provided has made the industry relatively difficult to understand and the issue of customer satisfaction particularly challenging to address [23,24]. It has been argued that the complaint ratio is an indicator of an insurer's performance and a good measure of customer satisfaction and service quality [25]. Findings from other service industries also suggest that customer complaints can provide invaluable insights as to how business practice and process can be enhanced [26,27]. To satisfy the needs of customer by providing high quality services is a strategy that will lead to higher profitability and revenue growth in almost all kinds of industries; the highly competitive healthcare insurance industry is no exception [25]. Customer satisfaction, in the context of this study, is defined as a judgment of a pleasurable level of fulfilment experienced by a healthcare insurance customer in his or her encounters with an insurer. This feeling of fulfilment is measured by a respondent's assessment of his / her purchase decision, i.e., whether the decision is a good or wise one and whether he / she is pleased to have made the purchase [23].

## **2.2 Customer Loyalty**

Customer loyalty is a multidimensional [28,29] and centrally important concept in service provision and the formulation of service marketing strategies [30,31]. The key management agenda for managers in the service industry is to formulate strategies to raise the level of loyalty of their customers so as to fuel business growth and foster business sustainability [30,32]. Customer loyalty increases revenue and reduces the costs of customer acquisition and retention [33,34].

### **2.2.1 Customer loyalty in the healthcare insurance industry**

To ensure that healthcare insurance service is delivered in the way preferred by customers, the majority of such service offerings are sold through a very complicated insurance agency network. This agent-based customer relationship creates a unique dynamism in the relationship network [24,35] and imposes high standards for the quality of service provided by insurance agents. Insurance firms and their customer-facing employees, i.e., the agents, all claim that they value customer loyalty and recognize the importance of building up solid relationships with the customers [36,37]. The importance they attach to customers' long-term enthusiasm underlines the centrality of customer loyalty defined by [38], p.173) as "the degree to which a customer exhibits repeat purchasing behaviour from a service provider, possesses a positive attitudinal disposition toward the provider, and considers using only this provider when a need for this service arises". Given that it is common practice for insurance companies to review and renew their policy contracts on an annual basis, this study therefore adopts the definition of customer loyalty advanced by [38]. The level of customer loyalty is measured by how willing a respondent is to recommend their insurer to their friends and the extent to which a respondent will buy more services from their insurer [39]. The focus is on the attitudinal perspective of customer loyalty. In other words, only the loyalty intentions of the respondents but not their actual purchase behaviour are measured [40].

### **2.2.2 Customer satisfaction and customer loyalty**

Satisfaction is a predictor of customer loyalty as “historically, satisfaction has been used to explain loyalty as behavioural intentions (e.g., the likelihood of repurchasing and recommending)” ([41], p.211). Various studies have found that customer satisfaction has a positive influence on customer loyalty in the service industry [14,15,42], but the level of influence varies from one study to the other, subject to the type of service concerned. For instance, [42] studied the banking industry of Hong Kong and revealed that customer satisfaction contributes strongly and positively to customer loyalty with a standardized beta of 0.623. However, the study of [15] on customer satisfaction and customer loyalty relationship in the airline, banking and healthcare services revealed that the levels of influence are on the low side. [42] studied the banking industry of Hong Kong and revealed that customer satisfaction contributes strongly and positively to customer loyalty with a standardized beta of 0.623. However, the study of [15] on customer satisfaction and customer loyalty relationship in the airline, banking and healthcare services revealed that the levels of influence are on the low side – the standardized beta values for the airline, banking and healthcare services are only 0.35, 0.36 and 0.33 respectively.

Although the differences of impact on the association between customer satisfaction and customer loyalty across different services are in no way negligible, it should be borne in mind that most of the prior studies focused on services characterized by “polygamous” customer loyalty, i.e., the kinds of services where customers display loyalty to a portfolio of firms and purchase different products from different firms [43,44]. These services are distinct from the healthcare insurance service in that customer loyalty in the latter is largely monogamous. It is unlikely for a customer to buy two similar insurance policies from different insurance companies. When studying the Greek insurance industry, [45] found that customer satisfaction has a direct influence on customer loyalty and service quality is shown to influence customer loyalty through the mediating effect of customer satisfaction. However, a recent survey of healthcare insurance customers in the US, conducted by Accenture Healthcare [46], revealed that 42% of healthcare insurance customers have a high degree of satisfaction, but only 7% of customers are willing to buy additional services from their insurance providers. To address this apparent discrepancy and to gain a better understanding of the association between customer satisfaction and loyalty in the context of healthcare insurance service in Hong Kong, it was hypothesized that:

Hypothesis 1. Customer satisfaction has a positive direct effect on loyalty in Hong Kong's healthcare insurance industry

### **2.3 Brand Preference**

Branding is an important aspect of marketing is considered to be one of the key success factors in selling products and services to brand conscious customers [47,48,49]. A firm which is capable of establishing a level of brand preference among its customers enjoys a considerable competitive advantage over its competitors [50]. Brand preference has become an important focus in marketing research [48]. Early studies on branding often made no distinction between brand loyalty and brand preference. [51], pp.13-14 asserted that “brand loyalty or brand preference has most frequently been defined as the consumer's repeat purchase probability of a particular brand” and that “the strength of brand loyalty is functionally dependent on the subjective perceived quality of a brand and time”. However, Nield and Peacock [52], p.105 contradicted the assertion and argued that “there is really no such thing as brand loyalty, just brand preference”. This argument has been backed by

many empirical studies, including that of [53] who studied the association between brand loyalty and advertising spending and concluded that customers only have brand preference but not brand loyalty. Furthermore, on a study of brand preference, [54] argued that customer preference is not linear and that brand preference will decrease over time. It is therefore important for service providers to regularly launch advertisement campaigns to maintain the 'exposure effect' so that customer preference for a brand can be refreshed from time to time.

### **2.3.1 Brand preference in the healthcare insurance industry**

Despite the above, brand preference in the services industry remain a relatively underdeveloped research topic. This lack of attention is particularly noticeable in the context of healthcare insurance ([55], [56]). Healthcare insurance is an interesting setting for brand research as the reach of the insurance service is heavily influenced by personal, economic and psychological factors, the cognitive and thought process of individual customers [57], as well as the views and behaviours of their family, friends and acquaintances. As purchase decisions in healthcare insurance are highly dependent on what potential customers think, perceive and experience [58], this study adopted the definition of brand preference proposed by [23] to reflect the tenuous nature of the industry, and adopted their scales to measure respondents' intention to stay and their level of satisfaction with their current insurer.

### **2.3.2 The influence of customer satisfaction on brand preference**

Branding is of particular importance to the service industry because of the industry's intangibility and subjectivity in value and quality evaluation [9]. To develop and enhance customer awareness and hopefully to influence their preference, the insurance industry has spent heavily on branding initiatives such as intensive customer engagement through agents, advertisements, brochures and publicity literature, sponsored programmes, and social media activities [59,60]. Although high brand awareness is important [61,62], brand recognition can hardly be translated into real sales opportunities if the customer's actual service experience does not match the strong and positive brand image projected by the insurer [59,60]. It is the service or perceived level of service behind the brand that really makes a point of difference in the industry [59,63]. In other words, brand preference is driven by customer satisfaction with the services rendered by insurers. Therefore, it was hypothesized that:

Hypothesis 2. Customer satisfaction has a positive direct effect on brand preference in Hong Kong's healthcare insurance industry.

### **2.3.3 The influence of brand preference on customer loyalty**

Unlike customer satisfaction and switching barriers, relatively few prior studies have been conducted to investigate how brand preference explains customer loyalty [64]. Prior studies have found a correlation between customer brand preference and customer loyalty [23,29]. For example, in studying customer repurchasing behaviour in the insurance industry, [23] found that there is a weak but significant correlation between brand preference and customer loyalty. Other studies also suggested that the existence of a causal relationship with brand preference positively affects customer loyalty [23,65]). It is common practice among service providers to use loyalty programs, e.g., frequent buyer discounts, to increase brand preference and to decrease price sensitivity of their customers. Studies have found that loyalty programs, if managed well, can enhance customer loyalty [66]. Both researchers

and management practitioners recognize that customer loyalty is an important consequence of brand preference, and so it was hypothesized that the same relationship may also hold in the context of Hong Kong's healthcare insurance industry:

Hypothesis 3. Brand preference has a positive direct effect on customer loyalty in Hong Kong's healthcare insurance industry.

## **2.4 Switching Costs**

Switching costs are costs associated with consumers changing from one service provider, one brand or product to another. Switching costs are regarded as one of the easiest strategies to prevent customers from changing to alternative suppliers [67,68]. Switching costs can be understood from a theoretical or practical perspective [69,69], p.441 contended that "from a theoretical standpoint, switching costs represent an important avenue for better understanding and predicting customer retention." One exploration in this direction is the efforts of [70] in developing a theoretical framework to examine the moderating role of switching costs in the causal relationship between customer satisfaction and loyalty in various service industries. On the other hand, "from a practical standpoint, managing customer perceptions of switching costs to foster retention represents a powerful tactical element in customer loyalty programs" ([69], p.441). ([71], p.315) conducted a study centring on a multiple service channel environment. The aim was to seek empirical evidence and insights as to how switching costs work in the multiple service channel environment of the Taiwan banking industry. They found that, unlike a traditional single channel environment where "switching costs are the perceived economic and psychological costs associated with changing from one firm to another", the dynamics in the multiple distribution channel environment is more complicated, as banking customers can use a combination of ATM, phone banking and Internet banking to handle their bank accounts.

### **2.4.1 Switching costs in the healthcare insurance industry**

Prior research on switching costs in healthcare insurance revealed that healthcare insurance policy holders, like most other consumers of services, are generally price-conscious [72]. However, different from consumers of other services, switching decisions in healthcare insurance are complex and depend not only on price, but also on a multitude of personal and other considerations such as age, health risk and health status of the individual policy holder, how customized is the original plan, and whether a change of medical providers will be required if a switch is to be made [72,73]. A study on adverse selection and switching costs in health insurance markets revealed that switching costs in the US health insurance markets were high [74]. And a customer's evaluation of how costly is a switch is determined largely by transaction-related indirect costs [75].

The emphasis given by prior researchers to the importance of transaction-related indirect costs suggests that healthcare insurance is no common commodity. Rather, it is an experience good the value of which is determined not only by the price tag but also the experience of the customer in using the good after purchase [72]. For this reason, switching costs, in the context of the current study, is defined as the costs associated with changing supplier, i.e., the transaction costs, the costs of searching for alternative plans, the costs of learning and relationship dissolution and the costs of uncertainty about the quality of a new alternative [75].

#### **2.4.2 The influence of customer satisfaction on switching costs**

The influence of customer satisfaction on customer switching behaviour is a well-explored topic [67]. The majority of prior studies found that customer satisfaction can act as an effective switching barrier which prevents existing customers from switching to competitors [76]. However, some other studies revealed that satisfied customer also switch [7]. For example, in studying the switching behaviour of subscribers in the mobile communication services industry in Taiwan, ([77], p.129) concluded that “customers sometimes switch service providers not because they are unsatisfied, but because a competitor offers a lower price or more value-added service”. In so far as healthcare insurance is concerned, it is generally considered that the more satisfied is a customer with the service and procedures he / she currently has, the more reluctant is for he / she to switch to another insurer [72;78]. Nevertheless, a research on the effect of quality information on consumer health plan switching in the Minneapolis-St. Paul region [79] revealed that there is no link between perceived health plan satisfaction and switching. The conflicting results suggest a need to examine the association in other settings. It was hypothesized that:

Hypothesis 4. Customer satisfaction has a positive direct effect on switching costs in Hong Kong's healthcare insurance industry.

#### **2.4.3 The influence of switching costs on customer loyalty**

From a firm's perspective, the primary purpose of switching costs is to stimulate customer loyalty [22]. From a consumer's point of view, switching from a familiar service provider to a new service provider costs time, effort and money [77,80,81]. Therefore, unless there is a considerable performance gap in service delivery with respect to the current service provider, e.g., a serious service failure which the service provider has failed to recover from or the presence of an aggressive marketing campaign by a competitor, it is unlikely that customers will make a decision to switch lightly [76,82].

Prior studies on service generally found that switching costs are a key antecedent of customer loyalty [83]. For example, ([38], p.174) found that “switching costs can affectively strengthen service loyalty by making it difficult for the customer to go to another provider”. Strong interpersonal relationships are found to have a positive influence on motivation to stay in different contexts, such as frontline services [84,85], small business [86], and business services [87]. By analyzing 677 mail survey responses from small-business owners, [88] found that the firm-level relationship between small-business owners and their insurance providers increased over time; as the duration of relationship increased, the small-business owners established positive perceptions of the insurance firm's ability to provide customized products, its competence level, and its promptness and reliability. Since a similar causal relationship may occur in the healthcare insurance industry, it was hypothesized that:

Hypothesis 5. Switching costs have a positive direct effect on customer loyalty in Hong Kong's healthcare insurance industry.

#### **2.4.4 The influence of switching costs on brand preference**

Switching costs play an important role in brand preference. By studying the online brokerage industry, [89] found that customers of different firms exhibit different switching costs and there is some association between customer brand related characteristics, such

as product and service design. A substantial amount of research has pointed to the influence of switching costs on preferences, as customers are unlikely to change service providers when switching costs are high [67,68,69]. While studying the Portuguese mobile telephone service industry, [90] suggested that switching costs and brand preference are two important factors affecting customer behavior and that there is a strong association between the two constructs. Since healthcare insurance, online brokerage and mobile telephone services share some common characteristics, such as high intangibility and subjectivity in value and quality evaluation [9], it was envisaged that the same relationship may also exist in the healthcare insurance industry [9,24]. Therefore, it was hypothesized that:

Hypothesis 6. Switching costs have a positive direct effect on brand preference in Hong Kong's healthcare insurance industry.

## **2.5 Mediating Effects**

The customer behaviour literature reveals that satisfied customers have a positive perception of the service providers and the service provided [48,67]. Research findings further direct that brand preference is an intervening variable between customer satisfaction and loyalty [91,92,93]. These findings are generally consistent with the study of [23], which concluded that customer satisfaction affects repurchase intention indirectly through brand preference. Customer satisfaction enhances a customer's brand preference, which in turn contributes to customer loyalty [23].

To test whether this indirect relationship also holds in the healthcare insurance setting, it was hypothesized that:

Hypothesis 7. The influence of customer satisfaction on customer loyalty is mediated by brand preference in Hong Kong's healthcare insurance industry.

Prior research found that satisfied customers anticipate higher costs associated with brand switching and service provider switching [67,68,94]. Customer satisfaction raises perceived switching costs, which in turn makes satisfied customers less likely to switch [67,69,76]. Despite empirical evidence suggesting that customer satisfaction has a positive direct relationship with switching costs, and that switching costs have a positive direct relationship with brand preference [23], the mediating effect of switching costs on the relationship between customer satisfaction and customer loyalty has not been properly explored. To discover if such a mediating effect exists in Hong Kong's healthcare insurance industry, it was hypothesized that:

Hypothesis 8. The influence of customer satisfaction on customer loyalty is mediated by switching costs in Hong Kong's healthcare insurance industry.

Customers who perceive higher value of a service will also perceive higher costs associated with brand switching and service provider switching [67,94,23] posited that switching costs exert a positive direct influence on brand preference. ([38], p.174) pointed out that "switching costs can affectively strengthen service loyalty by making it difficult for the customer to go to another provider". These findings suggest that how the relationship between switching costs and customer loyalty is mediated by brand preference is not fully understood. It was hypothesized that:

Hypothesis 9: The influence of switching costs on customer loyalty is mediated by brand preference in Hong Kong's healthcare insurance industry.

## 2.6 Research Model

Based on the above literature review and the nine hypotheses developed, a research model with four constructs was developed as illustrated in Fig. 1 below.

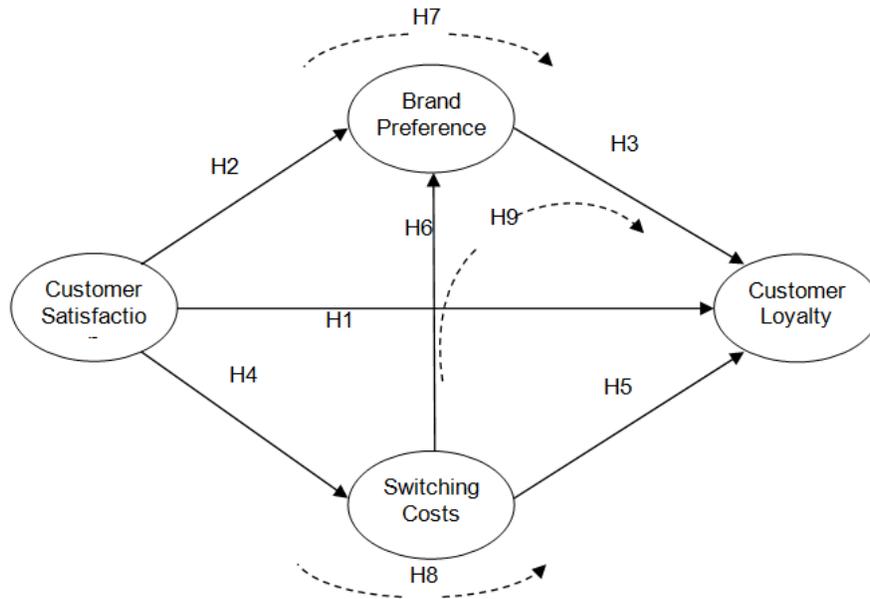


Fig. 1. Research Model

Customer satisfaction is the only independent construct and customer loyalty is the only dependent construct in this study. Switching costs and brand preference are the two mediating constructs. The solid lines in Fig.1 indicate direct effects, i.e. H1 to H6, and the dotted lines indicate mediating effects, i.e. H7 to H9.

## 3. METHODOLOGY

### 3.1 Sample

Samples were randomly selected with the criteria that participants must be aged 18 or above and be current healthcare insurance policyholders in Hong Kong. Potential participants randomly selected on the street were required to help fill in a questionnaire face-to-face with the researcher and return it immediately upon completion. A total of 1,280 potential participants were randomly approached and 516 respondents helped to complete a questionnaire; a 40% (516 / 1,280) response rate was achieved. Finally 511 valid responses were collected.

### 3.2 Research Instrument

There are four constructs in the conceptual model. They are customer satisfaction, brand preference, switching cost and customer loyalty. A five-section self-administered questionnaire was used for collecting quantitative data: the first four sections collected the perception of healthcare policyholders on customer satisfaction, brand preference, switching cost and customer loyalty, whilst the last section collected demographic data of the participants.

#### 3.2.1 Measurements for customer satisfaction

This research conceptualized customer satisfaction of healthcare insurance customers in Hong Kong as the overall level of customer pleasure and contentment from the experience of the services or products. Customer satisfaction was measured using a three-item adapted from [23]. Table 1 below shows these questionnaire items, the question ID and the questions relating to 'customer satisfaction'.

**Table 1. Measuring Items for Customer Satisfaction [23]**

<b>Construct</b>	<b>Item</b>	<b>Questions</b>
Customer Satisfaction	CS1	My decision to purchase healthcare insurance from my current insurer was a wise one.
	CS2	I feel good about my decision to purchase healthcare insurance from my current insurer.
	CS3	I am pleased that I purchased the healthcare insurance from the Company.

#### 3.2.2 Measurements for brand preference

This research conceptualized brand preference of healthcare insurance customers in Hong Kong as the extent to which the customer favors the services provided by their current service providers rather than by others. Brand preference was measured using a three-item adapted from [23]. Table 2 below shows these questionnaire items, the question ID and the questions relating to 'brand preference'.

**Table 2. Measuring Items for Brand Preference [23]**

<b>Construct</b>	<b>Item</b>	<b>Questions</b>
Brand Preference	BP1	My current insurer meets my healthcare insurance requirements better than other companies.
	BP2	I am interested in trying healthcare insurance from another company
	BP3	I intend, in the near future, to replace my healthcare insurance with my current insurer with another company.

#### 3.2.3 Measurements for switching costs

This research conceptualized switching costs as the perception of the magnitude of additional costs (time and effort) incurred by the healthcare insureds in Hong Kong terminating their relationships with their current service providers. Switching costs was

measured using a three-item adapted from [83]. Table 3 below shows these questionnaire items, the question ID and the questions relating to 'switching cost'.

**Table 3. Measuring Items for Switching Cost [83]**

<b>Construct</b>	<b>Item</b>	<b>Questions</b>
Switching Cost	SC1	I am concerned about not being able to keep my healthcare insurance product when changing healthcare insurance service provider.
	SC2	Changing healthcare insurance company is costly.
	SC3	Changing healthcare insurance company requires a lot of effort.

### **3.2.4 Measurements for customer loyalty**

This research conceptualized customer loyalty as the continuation of their healthcare insurance cover in Hong Kong with their service provider. Loyalty was measured using a four-item adapted from [39]. Table 4 below shows these questionnaire items, the question ID and the questions relating to 'loyalty'.

**Table 4. Measuring Items for Customer Loyalty [39]**

<b>Construct</b>	<b>Item</b>	<b>Questions</b>
Customer Loyalty	CL1	If I had needed healthcare insurance service now, my current insurer would be my first choice.
	CL2	I will continue to do business with my current insurer.
	CL3	I would recommend my current insurer as the best healthcare insurance service company.
	CL4	I would encourage friends and relatives to do business with my current insurer.

### **3.2.5 Measure of demographic characteristics**

Demographic information, such as, gender, age, marital status and education level was measured using nominal scales. Demographic information assists in establishing the representativeness to the population.

## **3.3 Data Analysis**

The collected data were analyzed by the following quantitative methods.

### **3.3.1 Measurement assessment**

Validity and reliability tests were conducted to evaluate the quality of the collected data prior to further analysis. Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) test were conducted to assess the adequacy of sample size. The aforementioned tests were to ensure that the basic assumptions for further analysis are met [95,96].

### **3.3.2 Factor analysis**

EFA and CFA were conducted on all variables under the four constructs of the research model including customer satisfaction, brand preference, switching cost and loyalty to ensure reliability and validity ([96,97]).

### **3.3.3 Structural equation modelling (SEM)**

Construct reliability and validity were established to reinforce data credibility. SEM provides measurement model that further sorts-out reliability and validity issues. Construct reliability and validity were established to reinforce data credibility. This relationship includes the mediating role played by brand preference and switching costs.

## **4. FINDINGS**

### **4.1 Characteristics of the Sample**

Table 5 below shows the characteristics of respondents in respect of gender, marital status, age, and education level. Each of these characteristics are benchmarked and compared with the characteristics of Hong Kong's adult population.

**Table 5. Demographic Profile of Valid Respondents (n = 511)**

		<b>Respondents</b>		<b>Hong Kong Adult Population</b>
		<b>Frequency</b>	<b>Percentage (%)</b>	
Gender	Male	291	56.9%	45.8%
	Female	220	43.1%	54.2%
Marital Status	Married	263	51.5%	60.4%
	Single	198	38.7%	28.8%
	Other	50	9.8%	10.8%
Age	18 – 24	60	11.7%	10.4%
	25 – 34	136	26.6%	18.1%
	35 – 44	125	24.5%	18.9%
	45 – 54	117	22.9%	21.5%
	55 – 64	45	8.8%	15.4%
	65 or above	28	5.5%	15.7%
Education Level	Secondary or below	170	33.3%	72.5%
	Non-degree	85	16.6%	7.6%
	Diploma			
	Undergraduate	127	24.9%	19.8%
	Degree			
	Postgraduate	129	25.2%	
	Degree			

### **3.4 Exploratory Factor Analysis on Mediators**

Exploratory factor analysis was also performed on mediating factors using the procedures proposed by [98]. The purpose of the analysis was to check whether each of the mediating factor items was loaded to the two mediators as predicted. The KMO Measure of Sampling

Adequacy was 0.793, higher than the minimum acceptable level of 0.7 [99]. The Bartlett's test of sphericity yielded an approximate Chi-square value of 1,502.862, with 15 degrees of freedom and was significant ( $p = 0.000$ ). The results from the two tests indicated that the questionnaire items for switching costs and brand preference were suitable for exploratory factor analysis.

The exploratory factor analysis yielded two components with eigenvalue greater than 1.0 and explained a total of 76.114% of the variance. As shown in Table 6, each of the measuring items was found loaded into their corresponding underlying components as expected, with a factor loading higher than 0.7. The two components extracted were named brand preference (component 1) and switching costs (component 2).

**Table 6. Exploratory Factor Analysis on Mediators' Measuring Items (n = 511)**

Questionnaire Items	Component	
	1	2
BP1: My current insurer meets my healthcare insurance requirements better than other companies.	0.809	
BP2R: I am interested in trying healthcare insurance from another company.	0.905	
BP3R: I intend, in the near future, to replace my healthcare insurance with my current insurer with another company.	0.893	
SC1: Changing healthcare insurance company is costly.		0.739
SC2: I am concerned about not being able to keep my healthcare insurance product when changing healthcare insurance service provider.		0.840
SC3: Changing healthcare insurance company requires a lot of effort.		0.867

*Remarks: Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.  
Rotation converged in 3 iterations.*

### 3.5 Measurement Model

Prior to hypotheses testing using a structural model, a measurement model was built to confirm the factor structure of the four constructs being studied in order to discover correlations among the constructs and to find the standardized factor loading of each questionnaire items to its corresponding construct [100,101]). Although the chi-square statistic was 263.310 with 59 df ( $p = 0.000$ ), giving a normal chi-square ratio of 4.463, which was higher than the desired level of less than 2, it was still lower than the maximum acceptable level of 5 [102,103]. The fit indices shown a good fit to the data with a GFI value of 0.931 and CFI value of 0.962, both of them were higher than 0.9 [104]. The RMSEA value was 0.082, which was less than the maximum acceptable value of 0.1 [105]. In conclusion, the model fit indices yielded from various tests indicated that the measurement model had adequate reliability and the questionnaire items and the constructs were having good validity [100,101,102].

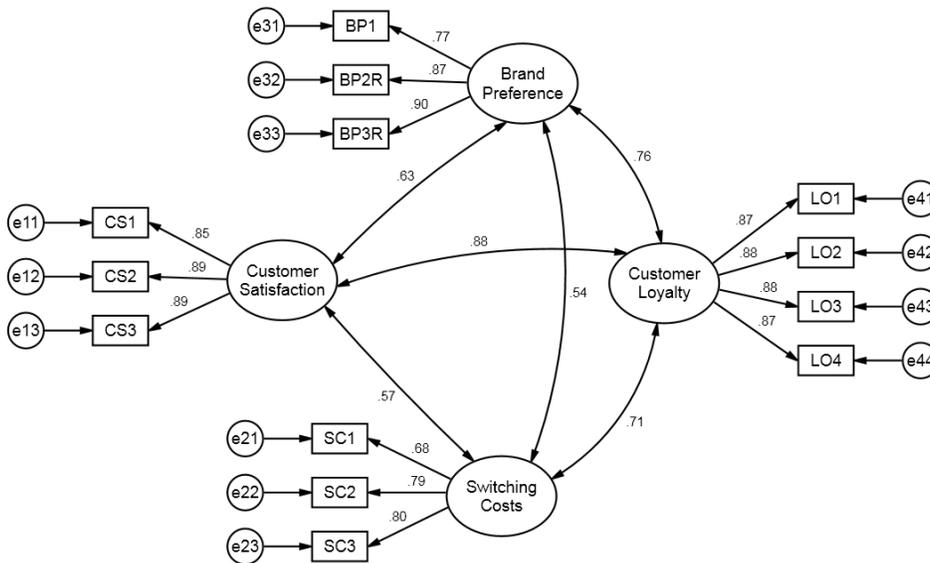
As shown in Table 7 and by Fig. 2, the factor loadings for customer satisfaction were in the range between 0.849 and 0.891 (significant at  $p < 0.001$ ), the factor loadings for switching costs were in the range between 0.675 and 0.805 (significant at  $p < 0.001$ ), the factor loadings for brand preference were in the range between 0.771 and 0.899 (significant at  $p <$

0.001) and the factor loadings for customer loyalty were in the range between 0.874 and 0.885 (significant at  $p < 0.001$ ). All the factor loadings exceeded the minimum acceptable limit of 0.6, indicating that all constructs were having high individual item reliability [96].

**Table 7. Standardized Factor Loadings in the Measurement Model (n = 511)**

			Estimate	P
CS1	<---	Customer Satisfaction	0.849	***
CS2	<---	Customer Satisfaction	0.891	***
CS3	<---	Customer Satisfaction	0.888	***
SC1	<---	Switching Costs	0.675	***
SC2	<---	Switching Costs	0.791	***
SC3	<---	Switching Costs	0.805	***
BP1	<---	Brand Preference	0.771	***
BP2R	<---	Brand Preference	0.868	***
BP3R	<---	Brand Preference	0.899	***
CL1	<---	Customer Loyalty	0.875	***
CL2	<---	Customer Loyalty	0.878	***
CL3	<---	Customer Loyalty	.885	***
CL4	<---	Customer Loyalty	.874	***

Remarks: \*\*\*:  $p < 0.001$



**Fig. 2. Measurement Model**

After confirming the reliability and validity of the questionnaire items and the constructs, Cronbach's alpha test was used to test the internal consistency of each of the constructs. Table 8 below summarizes the reliability statistics of the four constructs. The Cronbach's alpha coefficients of the four constructs of consumer satisfaction, switching costs, brand preference and customer loyalty were 0.907, 0.797, 0.880 and 0.931 respectively, all of them were higher than the acceptable level of 0.7 [95,99]. The composite reliability statistics for the four constructs were in the range between 0.802 and 0.931; all exceeded the acceptable

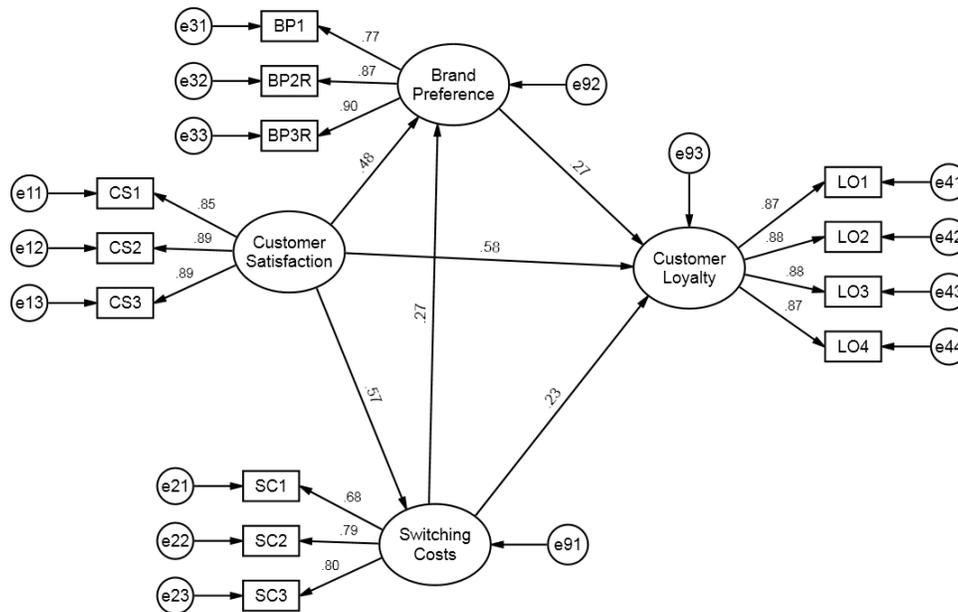
limit of 0.8 [96;99]. The average variance extracted (AVE) statistics for the four constructs were in the range between 0.576 and 0.771, all of them exceeded 0.5, meaning the questionnaire items for each of the constructs explained more variance than that caused by measurement error [96;99].

**Table 8. Reliability of the Four Constructs (n = 511)**

Construct	Cronbach's Alpha	Composite Reliability	AVE
Consumer Satisfaction	0.907	0.908	0.768
Switching Costs	0.797	0.802	0.576
Brand Preference	0.880	0.884	0.719
Customer Loyalty	0.931	0.931	0.771

### 3.6 Structural Model

After confirming the quality and reliability of the questionnaire items and the four constructs, the research model was then tested by a structural model using AMOS 18 with the maximum likelihood estimation method. As shown in Table 9, the chi-square statistic was 263.310 with 59 df ( $p = 0.000$ ), giving a normal chi-square ratio of 4.463, which was lower than the maximum acceptable level of 5 [102,103]. The fit indices shown a good fit to the data with a GFI value of 0.931 and CFI value of 0.962, both of them were higher than 0.9 [104]. The 0.082 RMSEA value shows a good fit to the data [105]. In conclusion, the model fit indices signified a good model fit [101,102,103].



**Fig. 3. Structural Model**

**Table 9. Model Fit Indices of the Structural Model**

Model	CMIN	DF	P	CMIN/DF	GFI	CFI	RMSEA
Default model	263.310	59	.000	4.463	.931	.962	.082
Saturated model	.000	0			1.000	1.000	
Independence model	5407.477	78	.000	69.327	.207	.000	.366

#### **4.4.1 Direct effects**

Fig.3 above presents the structural model with standardized loading. Table 10 below shows the structural path with unstandardized estimations, significant level (p value) and standardized estimations generated by AMOS 18. The predicted positive direct influence of customer satisfaction on customer loyalty (H1) was supported by the significant ( $p < 0.001$ ) standardized estimation of 0.584. The predicted positive direct influence of customer satisfaction on brand preference (H2) was supported by the significant ( $p < 0.001$ ) standardized estimation of 0.476. The predicted positive direct influence of brand preference on customer loyalty (H3) was supported by the significant ( $p < 0.001$ ) standardized estimation of 0.273. The predicted positive direct influence of customer satisfaction on switching costs (H4) was supported by the significant ( $p < 0.001$ ) standardized estimation of 0.568. The predicted positive direct influence of switching costs on customer loyalty (H5) was supported by the significant ( $p < 0.001$ ) standardized estimation of 0.227. The predicted positive direct influence of switching costs on brand preference (H6) was supported by the significant ( $p < 0.001$ ) standardized estimation of 0.267.

**Table 10. Unstandardized and Standardized Regression Weights**

Hypothesis	Path From	Path To	Unstd. Regression Weights		Standardized Regression Weights
			Estimate	P	
H1	Customer Satisfaction	Customer Loyalty	0.616	***	0.584
H2	Customer Satisfaction	Brand Preference	0.420	***	0.476
H3	Brand Preference	Customer Loyalty	0.326	***	0.273
H4	Customer Satisfaction	Switching Costs	0.444	***	0.568
H5	Switching Costs	Customer Loyalty	0.306	***	0.227
H6	Switching Costs	Brand Preference	0.301	***	0.267

\*\*\* : significant at  $p < 0.001$

#### **4.4.2 Mediating effect**

The structural model consists of two mediators and three mediating paths. The two mediators, i.e. switching costs and brand preference, have their respective mediating effects on the relationship between customer satisfaction and customer loyalty. In other words, other than a direct influence, there are two mediating paths influencing the relationship

between customer satisfaction and customer loyalty. Meanwhile, the influence of switching costs on customer loyalty consisted of both direct and indirect effects. The indirect effects are mediated by brand preference.

In order to separate the three indirect effects in the structural model and to test the respective level of significance of each of the mediating effects, this study adapted the methods proposed by [106]. Similar to [106], the bias-corrected bootstrap method with 95% confidence intervals was used and a total of 1,000 bootstrap samples were generated by AMOS.

Table 11 shows the respective mediating effects of switching costs and brand preference on the relationship between customer satisfaction and customer loyalty, as well as the mediating effects of brand preference, on the relationship between switching costs and customer loyalty.

**Table 11. Mediating Effects**

Hypothesis	Independent Variable(s)	Mediating Variable(s)	Dependent Variable(s)	Effect	Sig. #	Result
H7	Customer Satisfaction	Brand Preference	Customer Loyalty	0.130	0.001	Supported
H8	Customer Satisfaction	Switching Costs	Customer Loyalty	0.129	0.002	Supported
H9	Switching Costs	Brand Preference	Customer Loyalty	0.07	0.001	Supported

# : significant levels were based on bootstrapping techniques with 1,000 bootstrap samples

The bias-corrected bootstrap test results summarized in Table 11 confirm that brand preference and switching costs significantly and partially mediate the casual relationship between customer satisfaction and customer loyalty. Brand preference was found to play a partial, but significant, mediating role in the influence of customer satisfaction on customer loyalty (Mediating Effect = 0.130;  $p = 0.001$ ), giving support to H7. Switching costs was also found to play a partial, but significant, mediating role in the influence of customer satisfaction on customer loyalty (Mediating Effect = 0.129;  $p = 0.002$ ), giving support to H8. Table 11 also confirmed that the influence of switching costs on customer loyalty was partially mediated by brand preference. The mediating effect was weak (0.07) but significant at  $p = 0.001$  level, giving support to H9.

#### 4. DISCUSSION

Customer satisfaction is generally considered an important predictor of customer loyalty in the service industry [14,15,41,42]. This study reveals the same despite the original doubt that different findings might be yielded due to the unique nature of the healthcare insurance industry [45,46]. The perceived level of customer satisfaction explained a considerable amount of variance of customer loyalty with a standardized regression weight of 0.584 and significant ( $p = 0.000$ ). This study confirms that satisfied customers develop brand preference toward insurers from which satisfactory services originate. The perceived level of customer satisfaction explained a considerable amount of variance of brand preference with a standardized regression weight of 0.476 and significant ( $p = 0.000$ ). Although relatively few prior studies have been conducted to investigate how brand preference explains customer loyalty [64], these studies did suggest the existence of correlations between customer brand

preference and customer loyalty [23,67]. This study reveals that brand preference is a significant antecedent of customer loyalty in Hong Kong's healthcare insurance industry. The perceived level of brand preference explained a notable amount of variance of customer loyalty with a standardized regression weight of 0.273 and significant ( $p = 0.000$ ). The influence of customer satisfaction on customer switching behaviour was well-explored in prior studies [67]. This study reveals that a satisfied customer perceives considerable switching costs to his or her current healthcare insurance service provider. The perceived level of customer satisfaction explained a considerable amount of variance of switching costs with a standardized regression weight of 0.568 and significant ( $p = 0.000$ ). This study confirms that switching costs are a significant antecedent of customer loyalty in Hong Kong's healthcare insurance industry. The perceived level of switching costs explained a notable amount of variance of customer loyalty with a standardized regression weight of 0.227 and significant ( $p = 0.000$ ). There is little research that specifically addresses the causal relationship between switching costs and brand preference in the healthcare insurance service. However, studies from other services found that switching costs play an important role in brand preference [67,68,69,89]. This study extends the knowledge base in this area by providing empirical evidence on the positive impact of switching costs on brand preference in the healthcare insurance industry in Hong Kong. The perceived level of switching costs explained a notable amount of variance of brand preference with a standardized regression weight of 0.267 and significant ( $p = 0.000$ ). To the best knowledge of the researcher, no prior study has been done on the mediating role of brand preference on the causal relationship between customer satisfaction and customer loyalty in the healthcare insurance industry. This study fills the research gap by investigating whether such a mediating effect exists in Hong Kong's healthcare insurance industry, and if yes, the level of influence. This study reveals that brand preference significantly mediates the relationship between customer satisfaction and customer loyalty in Hong Kong's healthcare insurance industry. This study seeks to extend the research by confirming the existence of a mediating effect of switching costs on the relationship between customer satisfaction and customer loyalty in Hong Kong's healthcare insurance industry, and by assessing the relative significance of the influence. This study reveals that switching costs significantly mediates the relationship between customer satisfaction and customer loyalty in Hong Kong's healthcare insurance industry. The level of the mediating effect is 0.129 and significant at the level of 0.002. This study sought to fill this gap by investigating the existence and the significance of the mediating effect in Hong Kong's healthcare insurance industry. It is revealed from findings of this study that the mediating effect of brand preference on the relationship between switching costs and customer loyalty is weak (mediating effect = 0.07) but significant ( $p = 0.001$ ), giving support to the hypothesis that "the influence of switching costs on customer loyalty is mediated by brand preference in Hong Kong's healthcare insurance industry".

This research contributes to the body of knowledge related to the effects of the relationships among customer satisfaction, brand preference and switching costs on the loyalty of Hong Kong's healthcare customers. This research also fills a gap in the literature by studying the effect of customer satisfaction, brand preference and switching costs on loyalty in Hong Kong's healthcare sector and makes a significant contribution by helping managers of healthcare insurance service providers better understand their customers and manage their products. The research is beneficial to both the healthcare insurance industry and the community at large. The implication of the results suggests that practitioners need to formulate appropriate strategies to improve their performance and retain customers. Another implication of the findings of this study suggests that policy makers need to devise

better and more comprehensive regulatory measures to enhance the acceptability of the reformed system and to improve the protection of the policyholders.

## **5. LIMITATIONS AND FUTURE RESEARCH**

While this study contributes to the body of knowledge of consumer behaviour, it is not without its limitations. The use of a positivism paradigm, which assumes the existence of a single tangible reality, and the reliance of the study on quantitative research methods, imposed the first limitation on the study. As there may be other variables that affect the hypothesized relationships, further studies using qualitative methods are recommended exploring the existence of other variables that may influence the causal relationship between customer satisfaction and customer loyalty and exploit the interplay among the variables. Generalizability of the findings imposed the second limitation on the study. Although the large sample size ( $n=511$ ) adds to the quality of the study, all data were collected from healthcare insurance policyholders in Hong Kong. The finding of this study may therefore only reflect the perceptions of that particular group of people. The industry-specific and single culture sample frame may limit the applicability of the findings of this study to other services, other settings, or services or settings in other geographical locations. Further studies are recommended to ascertain the generalizability of the findings. The third limitation is the non-probability sampling technique used in the study. As on-street interviews were used, only those people who were on the street when the researcher was there had a chance to be selected. In other words, a portion of the population missed the chance to be selected and surveyed. A study with a larger sample size which uses the quota sampling technique should be conducted to confirm the findings of this study. With a quota sampling technique, which segments the population into subgroups, it will be possible to match the number of respondents with the demographic profile of Hong Kong's general population. Within each segment, a probability random sampling technique can be used to yield better results.

## **6. CONCLUSION**

This research studied the effects of customer satisfaction on customer loyalty in Hong Kong's healthcare insurance industry. Nine hypotheses were established to study the direct effect of customer satisfaction on loyalty and the mediating effect on loyalty through brand preference and switching costs. To achieve the above objectives, an in-depth study was conducted in which a total of 511 valid questionnaires were collected and the data was quantitatively analyzed using the structural equation modelling approach. The results indicate that customer satisfaction has a positive direct effect on customer loyalty. Second, customer satisfaction has a positive direct effect on brand preference. Third, brand preference has a positive direct effect on customer loyalty. Fourth, customer satisfaction has a positive direct effect on switching costs. Fifth, switching costs have a positive direct effect on customer loyalty. Sixth, switching costs have a positive direct effect on brand preference. Seventh, the influence of customer satisfaction on customer loyalty is mediated by brand preference. Eighth, the influence of customer satisfaction on customer loyalty is mediated by switching costs. Ninth, the influence of switching costs on customer loyalty is mediated by brand preference.

The implication of the results suggests that practitioners need to formulate appropriate strategies to improve their performance and retain customers. Another implication of the findings of this study suggests that policy makers need to devise better and more

comprehensive regulatory measures to enhance the acceptability of the reformed system and to improve the protection of the policyholders.

## **COMPETING INTERESTS**

Authors have declared that no competing interests exist.

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