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The Driving Forces of Customer Loyalty: A Study of Internet Service Providers in Hong Kong

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ABSTRACT

In this study we examine the driving forces of customer loyalty in the broadband market in Hong Kong. We developed and empirically tested a model to examine the antecedents of customer loyalty towards Internet service providers (ISPs) in Hong Kong. Structural equation modeling (SEM) was used to evaluate the proposed model. A total of 737 valid returns were obtained through a questionnaire survey. The results show that customer satisfaction, switching cost, and price perception are antecedents that lead directly to customer loyalty, with customer satisfaction exerting the greatest influence. Although we found that service quality significantly influences customer satisfaction, which in turn leads to customer loyalty, we did not find a direct relationship between service quality and customer loyalty. Our results also reveal that corporate image is not related to customer loyalty. Our empirical investigation suggests that investing huge resources in building corporate image can indeed be a risky strategy for ISPs.

Keywords: corporate image; customer loyalty; customer satisfaction; service quality

INTRODUCTION

Due to a recent significant surge in the number of ISPs, the broadband market in Hong Kong has become very crowded, leading to fierce price competition, which has eventually resulted in the elimination of many ISPs from the market. From 2001 to 2006, the number of ISPs in Hong Kong dropped from 258 to 181. As the broadband market matures, the focus of

ISPs has shifted from customer acquisition to customer retention. In March 2006, there were around 2.6 million Internet users, including both broadband and narrowband users, representing a 39% penetration rate in Hong Kong. About 64% of these users access through the broadband Internet (Office of the Telecommunications Authority, 2006). These figures establish Hong

Kong as one of the most Internet-connected cities in the Asian-Pacific region.

The significance of customer loyalty cannot be overemphasized because it relates closely to the continued survival, as well as the future growth, of companies. For a company to maintain a stable profit level when the market reaches the saturation point, a defensive strategy aiming at retaining existing customers is more important than an offensive one, which targets at expanding the size of the overall market by inducing potential customers to subscribe to its services (Ahmad & Buttle, 2002; Fornell, 1992).

Previous studies on customer loyalty focused on customer satisfaction and switching barriers (Dick & Basu, 1994; Gerpott, Rams, & Schindler, 2001; Lee & Cunningham, 2001). These studies have found that customers experiencing a high level of satisfaction are likely to remain with their existing service providers and maintain their service subscriptions. Switching barriers, on the other hand, play a moderating role in the relationship between customer satisfaction and customer loyalty (Colgate & Lang, 2001; Lee & Cunningham, 2001). Researchers in this area have further elaborated on the linkages between price factors and perceived value (e.g., Grewal, Monroe, & Krishnan, 1998), as well as between price and customer loyalty (e.g., Voss, Parasuraman, & Grewal, 1998). In addition, the marketing literature supports the general notion that pricing factors affect the price perceptions of customers, which in turn contribute to customer loyalty (Reichheld, 1996).

By using SEM, this study empirically analyzes whether customer satisfaction, switching cost, price perception, and corporate image are antecedents of customer loyalty in the context of the ISP market in Hong Kong. We also seek to identify elements of service quality as antecedents of satisfaction, and their levels of impact on satisfaction, and to ascertain whether service quality is a direct antecedent of customer loyalty. We examine the degree to which switching cost and price perception account for the variations in the strength of consumer

loyalty to ISPs. Finally, we test if corporate image has any impact on customers' loyalty to their present ISPs.

THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

Customer loyalty is a purchase behavior, which, unlike customer satisfaction, is an attitude (Griffin, 1996). Customer loyalty is concerned with the likelihood of a customer returning, making business referrals, providing strong word of mouth, as well as offering references and publicity (Bowen & Shoemaker, 1998). Loyal customers are less likely to switch to competitors in view of a given price inducement, and they make more purchases compared to less loyal customers (Baldinger & Rubinson, 1996). Although most research on loyalty has focused on frequently purchased package goods (i.e., brand loyalty), the loyalty concept is also important for industrial goods (i.e., vendor loyalty), services (i.e., service loyalty), and retail establishments (i.e., store loyalty) (Dick & Basu, 1994). As evidenced in the previous discussions, customer loyalty has been generally described as occurring when customers repeatedly purchase goods or services over time, have word of mouth, and make referrals to other customers.

Antecedents of Customer Loyalty

One of the major factors found to affect customer loyalty is customer satisfaction. Halstead, Hartman, and Schmidt (1994) considered customer satisfaction as an affective response that focuses on product performance against some prepurchase standard during or after consumption. Mano and Oliver (1993) referred to satisfaction as an attitude or evaluative judgment varying along the hedonic continuum focusing on the product, which is evaluated after consumption. Fornell (1992) identified satisfaction as an overall evaluation based on the total purchase and consumption experience of the target product, or service performance compared with prepurchase expectations over

time. Oliver (1997, 1999) regarded satisfaction as a fulfillment response or judgment on a product or service, which is evaluated for one-time or ongoing consumption.

Service quality can be defined as the result of the comparison between a customer's expectations on a service and their perception of the way the service has been delivered (Gronroos, 1984; Lehtinen & Lehtinen, 1982; Lewis & Booms, 1983; Parasuraman, Zeithaml, & Berry, 1985, 1988, 1994). Perceived service quality is usually measured by two dimensions, namely *process* quality and *output* quality. Parasuraman et al. (1985, 1988, 1994) developed the 22-item SERVQUAL instrument, which has been widely used to measure service quality in many industries, such as banking (Mukherjee & Nath, 2005), health care (Choi, Lee, Kim, & Lee, 2005), and airport service (Fodness & Murray, 2007). The SERVQUAL instrument assesses the overall service quality by comparing service expectation and actual performance, in terms of five generic dimensions, namely, tangibles, reliability, responsiveness, assurance, and empathy.

When consumers switch service providers, they will incur various costs ranging from the time spent in gathering information about potential alternatives to the benefits forfeited due to termination of the existing service. Patterson and Smith (2003) defined switching cost as the perception of the magnitude of the additional cost incurred to terminate a relationship and to secure an alternative one. Selnes (1993) defined switching cost as the technical, financial, and psychological factors that make it difficult or expensive for a customer to change brands.

Corporate image is defined as the overall impression about a company formed on the minds of the public (Barich & Kotler, 1991; Dichter, 1985; Kotler, 1982). It relates to the different physical and behavioral attributes of a company, such as business name, logo, corporate values, tradition, ideology, and the impression of quality communicated by a customer to a potential customer (i.e., word of mouth). The building of corporate image is a lengthy process. The sensory process starts with ideas, feelings,

and previous experience with a company that are retrieved from memory and transformed into a mental image (Yuille & Catchpole, 1977). Past studies have suggested that a host of factors, including advertising, public relations, physical image, word of mouth, and customer's actual experience with the goods and services, influence the corporate image of a company in the mind of a customer (Normann, 1991).

Researchers (e.g., Slater, 1997) and consultants (e.g., Gale, 1994) have recommended that companies should adjust their strategies to retain customers in order to achieve superior customer value delivery as customer value incorporates both the costs and benefits of staying with a company. As such, customers' perceived value is considered as a strong driver of customer retention. Nevertheless, some important questions about the role of price in services have remained unanswered. One is whether price perception has a direct effect on overall customer loyalty. If so, it is essential for companies to actively manage their customers' price perceptions because of their impact on value perceptions. Another question is about the formation of price perception in services. Answers to these questions can help clarify the measurement and management of price perception.

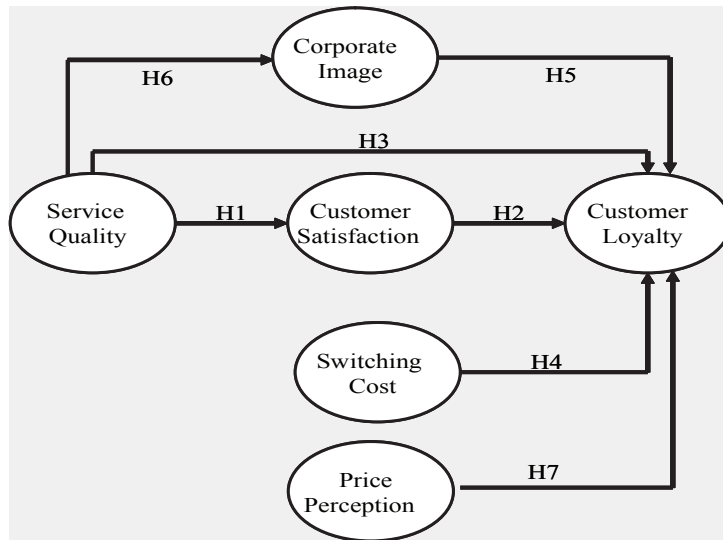
Conceptual Model and Hypotheses

We propose a conceptual model that theorizes the relationships among consumer loyalty, service quality, customer satisfaction, switching cost, and corporate image as shown in Figure 1. In what follows, we justify the postulated relationships in the model and formulate several hypotheses to test the model.

Service Quality and Customer Satisfaction

Service quality researchers refer to satisfaction as a transaction-specific evaluation, and to quality as an overall evaluation based on a whole set of cumulative evaluations. Parasuraman et al. (1994) recommended examining service quality and satisfaction, and their causal link, from both transaction-specific and global perspectives. In the context of the ISP business, which mainly

Figure 1. Theoretical framework.



hinges on the ongoing relationship between a customer and their service provider, the cumulative-specific perspective is more suitable to view this ongoing relationship. Moreover, service quality is usually considered as an antecedent of customer satisfaction in the ISP business. Therefore, we hypothesize that

H1: *Perceived service quality is positively related to customer satisfaction.*

Customer Satisfaction and Customer Loyalty

The marketing literature suggests that customer loyalty can be defined in two distinct ways, namely the “behavioral approach” and the “attitude approach” (Jacoby & Kyner, 1973). From the behavioral perspective, customer loyalty is identified as the actual repurchase behavior of a customer (Cunningham, 1961). In contrast, the attitude-based perspective refers to customer loyalty as the intention to repurchase (Fournier & Yao, 1997). Ajzen and Fishbein (1977) argued that attitude and behavior are consistent in most situations, and that attitude is a strong predictor of future behavior. Thus, Dick and Basu (1994) developed a model that integrates

both approaches to study loyalty. Moreover, marketing researchers have investigated the relationships between customer loyalty and different variables, for example, switching cost, which are considered as significant antecedents of customer satisfaction (Bearden & Teel, 1983; Berne, 1997; Bloemer & Kasper, 1993, 1995; Bloemer & Lemmink, 1992; Boulding, Kalra, Staelin, & Zeithaml, 1993; Cronin & Taylor, 1992; Fornell, 1992; Kasper, 1988; LaBarbera & Mazursky, 1983; Oliva, Oliver, & MacMillan, 1992; Oliver, 1999). Research based on the American Customer Satisfaction Index supported empirically that customer loyalty is positively related to customer satisfaction (Fornell, Johnson, Anderson, Cha, & Bryant, 1996). Chiou (2004) obtained this result in his study of the ISP industry, too. Thus, we propose the following hypothesis:

H2: *Customer satisfaction is positively related to customer loyalty.*

Service Quality and Customer Loyalty

The *cognitive evaluation-emotional response-behavioral intention* link explains conceptually

how customers form their behavioral intentions. Many studies have also identified a direct positive link between service quality perception and customer behavioral intention (e.g., Boulding et al., 1993; Ranaweera & Neely, 2003; Zeithaml, Berry, & Parasuraman, 1996).

Researchers have attempted to measure the effect of service quality perception on retention. Cronin, Brady, and Hult (2000) found that there exist direct, linear effects of service quality perception, customer satisfaction, and value, on behavioral intention in their large-scale survey of six industries. Particularly, their findings show that service quality perception has a much greater impact than price on determining value. Therefore, the researchers concluded that service customers may consider service quality more important than the cost of acquiring their services. These results are generally consistent with the earlier studies reported previously. However, the study by Cronin and Taylor (1992) showed that using either the SERVQUAL instrument or the SERVPERF instrument to measure service quality fails to confirm the service quality perception—customer behavioral intention link. Using alternative measures of service quality, they found that only satisfaction determines repurchase intention. However, Cronin and Taylor cautioned that their results do not mean that “service quality fails to affect purchase intentions.”

Furthermore, some past studies attempting to link customer satisfaction (a similar construct to service quality perception) with customer retention in the retail sector, which is characterized by few or no switching barriers, have established a significant non-linear relationship between these two constructs (e.g., Jones & Sasser 1995; Mittal & Kamakura, 2001). Therefore, a non-linear association between service quality perception and customer retention is also plausible. However, to echo major past research findings, we hypothesize a linear association between service quality perception and customer retention as follows:

H3: *Perceived service quality is positively related to customer loyalty.*

Switching Cost and Customer Loyalty

Switching cost is referred to as the cost incurred by a customer who switches from an existing service provider to a new service provider. The switching cost includes time, money, and psychological cost (Dick & Basu, 1994). It also contains the perceived risks of potential losses perceived by customers at switching, such as losses of a financial, performance-related, social, psychological, and safety-related nature (Murray, 1991). In the ISP environment, when switching cost is high, customers tend to continue using their ISPs' broadband services. The reason is that switching incurs risk (Anton Martin, Garrido Samaniego, & Rodriguez Escudero, 1998; Klemperer, 1995; Ruyter, Wetzels, & Bloemer, 1996; Selnes, 1993; Wernerfelt, 1991). Therefore, we have the following hypothesis:

H4: *Perceived switching cost is positively related to customer loyalty.*

Corporate Image and Customer Loyalty

Corporate image is regarded as the portrait projected by a firm in the mind of its customers. It is the result of an aggregation process that incorporates a range of information used by customers to form a perception of the firm, based on their own previous experience or on the information they acquire from other sources, such as advertising and word of mouth. Corporate image may further establish and affect customer loyalty (Andreassen & Lindstad, 1998; Kandampully & Suhartanto, 2000; Nguyen & Leblanc, 2001). We therefore hypothesize that

H5: *Corporate image is positively related to customer loyalty.*

Service Quality and Corporate Image

Bitner (1992) proposed that cues from the physical environment, which is an important element of service quality, are one of the means that can effectively convey a firm's purposes and image to its customers. Gronroos (1984) argued

that corporate image is built mainly by service quality, in terms of both technical quality and functional quality of services. In a study of the airline industry, Ostrowski, O'Brien, and Gordon (1993) concluded that "positive experience over time (following several good experiences) would ultimately lead to positive image and preference." More recent studies have shown that service quality is considered to be partly responsible for the resulting corporate image (Nguyen & LeBlanc 1998; Zins, 2001). Thus, we postulate the following hypothesis:

H6: *Perceived service quality is positively related to corporate image.*

Price Perception and Customer Loyalty

Limited research has been undertaken to investigate the linkage between price perception and customer loyalty (Ranaweera & Neely, 2003; Varki & Colgate 2001). Ranaweera and Neely (2003) showed that price perception has a direct linear relationship with customer loyalty in the telecommunications sector. We believe that such a relationship may be more explicit in the ISP environment in Hong Kong, where there is fierce price competition. Hence, we formulate the following hypothesis:

H7: *Price perception is positively related to customer loyalty.*

RESEARCH METHODOLOGY

Sample

This study targets customers of Internet services in Hong Kong. We collaborated with a local marketing research company to conduct a large-scale questionnaire survey of users of Internet services in Hong Kong. We randomly e-mailed 100,000 invitations to users of Internet services captured in the database of the marketing company to participate in our survey.

Data Collection Procedure

We conducted a pilot study with 20 ISP users to assess the relevance of the indicators to the

corresponding constructs and the clarity of the instructions for completing the questionnaire. Upon completing the pilot study, we made minor changes to the questionnaire in order to improve its validity and readability. The questionnaire was developed in English and translated into Chinese. To ensure its face validity, the questionnaire was reviewed by industry practitioners and scholars. Based on their evaluations, corrections and amendments were made. As suggested by Ueltschy, Laroche, Eggert, and Bindl (2007), some measures of both customer satisfaction and service quality may be non-equivalent across cultures, which would limit their usage across borders. When measurement scales are created in one country and then translated for use in another, the interpretation and connotation of certain terms may negatively impact their applicability. In order to minimize the cultural effect, a pretest involving exploratory interviews with users and experts of ISPs was conducted to ensure the questionnaire was relevant and clear to the respondents with the Chinese culture.

With the assistance of a marketing research firm in Hong Kong, a total of 100,000 e-mail invitations were sent randomly to Internet users within the company's database. They were asked to participate in our survey by clicking the hyperlink included in our e-mail invitations. Out of 100,000 invitations sent out, 3,247 recipients opened the e-mail. Once a respondent completed the questionnaire, their answers were automatically entered into our database. We received 856 completed questionnaires. However, 119 questionnaires were not answered by ISP users, so only 737 usable returns were obtained from 3,247 recipients who had opened our invitation e-mails, yielding an effective response rate of 22.7%.

The respondents varied in demographics and background. In general, they are mature and well educated. Table 1 summarizes the respondent characteristics. The relatively high educational and income profile of the respondents indicates that they may not be a perfect representative sample of Internet users in Hong Kong. Though the samples were selected on a

Table 1. Summary of respondent characteristics

Gender	Percentage	
Male	69%	
Female	31%	

Age	Percentage	Cumulative Percentage
15 or below	0%	0%
16 – 25	12%	12%
26 – 35	35%	47%
36 – 45	34%	81%
46 or above	19%	100%

Education	Percentage	Cumulative Percentage
Primary school	0%	0%
Secondary school	14%	14%
Post secondary	14%	28%
Tertiary	72%	100%

Income level	Percentage	Cumulative Percentage
Below HK\$5,000 / mth	3%	3%
HK\$5,000 – 9,999 / mth	11%	14%
HK\$10,000 – 14,999 / mth	19%	33%
HK\$15,000 – 19,999 / mth	14%	47%
HK\$20,000 – 29,999 / mth	17%	64%
HK\$30,000 / mth or above	36%	100%

random basis, it is difficult to avoid the potential bias that respondents with high educational background and incomes are more likely to response.

Non-response bias was evaluated by following Armstrong and Terry's (1977) suggested approach. We used the mid-point of the data collection period to distinguish early and late respondents. Seventy-seven percent of the responses were from early respondents while the remaining 23% were from late respondents. Applying the independent sample *t*-test, we

compared the responses of the early and late respondents. We observed no significant differences in the answers ($p < 0.05$) between the early and late respondents, which suggests that non-response bias did not appear to be a problem in our study.

Measurement and Operationalization of Constructs

To develop the instrument for our study, we based our efforts on an extensive review of the relevant literature. We subsequently revised

some of the items of the instrument, taking into consideration the findings of the pilot study and comments from some experienced researchers. We list in Table 2 the complete instrument that was included in our survey. Hereafter we discuss the measurement and operationalization of each of the constructs embedded in our conceptual model.

- **Service quality:** We measured service quality using the SERVPERF instrument developed by Cronin and Taylor (1992). SERVPERF is a 22-item scale consisting of five dimensions, namely, reliability, responsiveness, assurance, empathy, and tangibles. It treats service quality as disconfirmation between expectation and performance. The perception data relative to a respondent's expectation are collected directly. Each respondent was asked to rate each item of service quality on a five-point scale, anchored at 1 = strongly agree and 5 = strongly disagree. The Cronbach alpha was 0.84, indicating high reliability for this construct.
 - **Customer satisfaction:** We adopted Oliver's (1980) instrument to assess customer satisfaction. We asked respondents to evaluate their satisfaction with the decision to choose their ISPs, their belief of making a right decision, and their overall satisfaction with their ISPs. Respondents were invited to rate the indicators on a five-point, Likert-type scale, anchored at 1 = strongly agree and 5 = strongly disagree. The Cronbach alpha was 0.95, indicating very high construct reliability.
 - **Customer loyalty:** We measured the attitude aspect of customer loyalty, which is a common means of assessing this latent construct as recommended by Berne (1997). We used "change to another ISP," "continuity in using the ISP," and "recommending the ISP to others" as indicators for this construct. Respondents were requested to rate these indicators on a five-point, Likert-type scale, anchored at 1 = strongly agree and 5 = strongly disagree.
- The Cronbach alpha was 0.84, indicating high construct reliability.
- **Switching cost:** We adopted the typology proposed by Vilagines (1994) to measure switching cost. Particularly, we focused on assessing switching cost by the time required to search for information about other ISPs, the effort involved in deciding on another ISP, and the risk of making a mistake with the switch. A five-point, Likert-type scale ranging from 1 = strongly agree to 5 = strongly disagree was used. The Cronbach alpha was 0.65, suggesting moderate and marginally acceptable construct reliability.
 - **Corporate image:** We followed Nguyen and LeBlanc's (2001) suggestion to assess the construct of corporate image. We measured this latent construct by good impression, good image in the minds of customers, and better image than competitors. Respondents were asked to rate the indicators on a five-point, Likert-type scale, anchored at 1 = strongly agree to 5 = strongly disagree. The Cronbach alpha was 0.90, indicating high construct reliability.
 - **Price perception:** We measured price perception by two questions. One refers to the "reasonableness of price," which was used in Ranaweera and Neely's (2003) study. It captures the way in which price is perceived relative to that of competitors. Another question concerns "value for money," which was used in Varki and Colgate's (2001) study. It reflects the relative standing of one's service provider in terms of price. A five-point, Likert-type scale ranging from 1 = strongly agree to 5 = strongly disagree was used. The Cronbach alpha was 0.88, suggesting high construct reliability.

DATA ANALYSIS AND RESULTS

We applied SEM to examine our proposed model, using analysis of moment structures (AMOS). We followed Anderson and Gerbing's (1982) two-step approach, whereby we estimat-

Table 2. Questionnaire and its measurement properties

Service Quality (Cronbach's $\alpha = 0.87$, AVE=0.68)	
SQ1*	My ISP has up-to-date equipment (e.g., Modem)
SQ1*	My ISP's physical facilities are visually appealing (e.g., Design of the stores)
SQ1*	My ISP's customer service staff are well-dressed and appear neat.
SQ1*	The appearance of the physical facilities of my ISP is in keeping with the type of other ISPs.
SQ2	When my ISP promises to do something by a certain time, it does so.
SQ2	When I have problems, my ISP takes corrective action without delay.
SQ2	My ISP is dependable (e.g., High connection speed, high availability of network).
SQ2	My ISP customer service staff make an effort to explain things in a simple way.
SQ2	My ISP keeps its records accurately.
SQ3*	My ISP does not tell customers exactly when services will be performed.
SQ3*	It is difficult to contact my ISP whenever necessary.
SQ3*	My ISP's customer service staff are not always willing to help customers.
SQ3*	My ISP's customer service staff are too busy to respond to customer requests promptly.
SQ4	I can trust my ISP's customer service staff.
SQ4	I feel safe in my transactions with my ISP's customer service staff.
SQ4	My ISP's customer service staff are polite.
SQ4	My ISP's customer service staff get adequate support from their firm to do their jobs well.
SQ5	My ISP keeps me informed of things that I need to get the best use of the service.
SQ5	My ISP's customer service staff give me personal attention.
SQ5	My ISP's customer service staff understand my needs best.
SQ5	My ISP has my best interests at heart.
SQ5	I find the operating hours of my ISP convenient.
Customer satisfaction (Cronbach's $\alpha = 0.95$, AVE=0.87)	
S1	I am happy about my decision to choose this ISP.
S2	I believe that I did the right thing when I chose this ISP.
S3	Overall, I am satisfied with this ISP.
Corporate Image (Cronbach's $\alpha = 0.90$, AVE=0.75)	
IMA1	I have always had a good impression of my ISP.
IMA2	In my opinion, my ISP has a good image in the minds of customers.
IMA3	I believe that my ISP has a better image than its competitors.
Price Perception (Cronbach's $\alpha = 0.88$, AVE=0.80)	
PP1	The prices charged by my ISP are reasonable.
PP2	My ISP's services are value-for-money.

Responses to the following questions ranged from 1 = strongly agree to 5 = strongly disagree.

*Deleted item

continued on following page

Table 2. continued

Switching Cost (Cronbach's $\alpha = 0.95$, AVE=0.54)	
SC1	To change to another ISP involves investing time in searching for information about other ISPs.
SC2*	To change to another ISP involves the sacrifice of existing benefits and privileges accumulated with my existing ISP.
SC3	To change to another ISP incurs a risk in choosing another ISP that might turn out not to satisfy me.
Customer Loyalty (Cronbach's $\alpha = 0.84$, AVE=0.64)	
L1	I will not change to another ISP because I value my ISP.
L2	I will continue to use my ISP within the next 12 months.
L3	I would always recommend my ISP to someone who seeks my advice.

Responses to the following questions ranged from 1 = strongly agree to 5 = strongly disagree.

*Deleted item

ed the measurement model prior to estimating the structural model. To avoid sample bias, we randomly divided the 737 usable responses into two groups. The first group of 368 responses was used to test the measurement model, while the second group of 369 responses was used to test the structural model. In what follows, we present and discuss the results of the measurement model analysis, structural model analysis, and hypothesis testing.

Measurement Model Results

We assessed the convergent and discriminant validity of the scales by the methods outlined in Bollen (1989) and Chau (1997). Convergent validity is assessed by the significance of the t -values of the item loadings. In addition, it would be difficult to justify a proposed item for a latent construct in research if its reliability is less than 0.50, because in that case 50% of its variance is error variance. It is common to drop the worst performing item from its respective scale and to re-estimate the parameter values, if any item exhibits an R^2 value below 0.50. This may require several iterations and the goal is to produce an acceptable model that maximizes performance for a given sample. Table 3 summarizes the reliability (R^2 values)

and convergent validity (t -values) of the final measurement model. All R^2 values were greater than the 0.50 threshold level, and all the item loadings of the constructs were significant, with t -values of at least 4.39 ($p < 0.01$). These results provide sufficient evidence of reliability and convergent validity of the constructs examined in our study.

Evidence of discriminant validity of a construct is present if the average variance extracted (AVE) of the construct is greater than its squared correlations with other constructs (Fornell & Larcker, 1981). The AVEs of service quality, customer satisfaction, corporate image, switching cost, price perception, and customer loyalty were 0.684, 0.870, 0.753, 0.543, 0.801, and 0.641, respectively. They were all larger than the squared correlations between any target construct and other constructs, which ranged from 0.001 to 0.516 (Table 4). The elements on the diagonal are all larger than the off-diagonal elements in Table 4. The largest squared correlation between two different constructs (off-diagonal) was 0.516 and the smallest AVE (on the diagonal) was 0.543. These results provide sufficient evidence of discriminant validity of the constructs included in our study.

Table 3. Reliability and convergent validity of the final measurement model

Indicators	Description	R ²	t-value	Alpha
SQ2	Reliability	.745	- ^a	0.8683
SQ4	Assurance	.610	18.37	
SQ5	Empathy	.560	17.19	
IMA1	I have good impression of my ISP	.817	-	0.9003
IMA2	Customers have good image	.774	24.21	
IMA3	Better image than competitors	.669	21.01	
S1	Happy with my decision	.882	-	0.9526
S2	I did the right thing	.837	32.09	
S3	I am satisfied with my ISP	.893	36.01	
SC1	Changing ISPs involves investing time	.407	-	0.6933
SC3	Risk of choosing a bad ISP	.691	4.39	
PP1	Charge is responsible	.608	-	0.8750
PP2	Value for money	.994	23.70	
L1	I will not change to other ISP	.627	-	0.8426
L2	Continue to use 12 months	.570	14.99	
L3	Will recommend to others	.723	17.09	

^a Indicates a parameter fixed at 1.0 in the original solution.

^b Fit indices: $\chi^2 = 218$ ($p = 0.000$), $df = 95$, $\chi^2 / df = 2.295$, NNFI = 0.954, CFI = 0.974

Table 4. Summary of AVEs and squared correlations

Construct		1	2	3	4	5	6
1	Service Quality	0.684					
2	Customer Satisfaction	0.212	0.870				
3	Corporate Image	0.516	0.170	0.753			
4	Switching Cost	0.028	0.001	0.015	0.543		
5	Price Perception	0.408	0.011	0.038	0.020	0.801	
6	Customer Loyalty	0.044	0.347	0.016	0.045	0.022	0.641

^a AVE on the diagonal

^b Squared correlation off the diagonal

Structural Model Result and Hypothesis Testing

Table 5 presents the overall model fit and the results of testing of each of the research hypotheses using the second group of 369 responses. The results of the structural model indicate an adequate fit: $\chi^2 = 308$ ($p = 0.000$), $df = 96$,

$\chi^2 / df = 3.208$, NNFI = 0.933, CFI = 0.947, and RMSEA = 0.077. The structural model meets all the criteria for fit measures except the χ^2 / df value of 3.2, which was marginally higher than the acceptable value of 3.0. This demonstrates that the structural model fits the data very well.

Table 5. Overall model fit and tests of research hypotheses

Causal path	Hypothesis	Expected sign	Path coefficient	R ²	t-value	p-value	(p ≤ 0.05)
SQ -> Satisfaction	H1	+	0.856	0.733	17.33	***	Significant
Satisfaction -> Loyalty	H2	+	0.726	0.527	6.55	***	Significant
SQ -> Loyalty	H3	+	0.109	0.012	-0.68	0.611	Insignificant
Switching cost -> Loyalty	H4	+	0.176	0.031	3.99	***	Significant
Image -> Loyalty	H5	+	0.134	0.018	1.48	0.168	Insignificant
SQ -> Image	H6	+	0.827	0.684	15.10	***	Significant
Price -> Loyalty	H7	+	0.130	0.017	2.57	***	Significant

Note: $\chi^2 = 308$ ($p = 0.000$), $df = 96$, $\chi^2 / df = 3.208$, $NNFI = 0.933$, $CFI = 0.947$, $RMSEA = 0.077$

Figure 2 displays the results of hypothesis testing. All hypothesized relationships, except H3 and H5, were highly significant at $p = 0.05$. The estimate of the standardized path coefficient indicates that the linkage between service quality and customer satisfaction is highly significant (H1 was supported: path coefficient = 0.86, $t = 17.333$, $p = 0.000$). The estimate of the standardized path coefficient shows that customer sat-

isfaction affects customer loyalty substantially (H2 was supported: path coefficient = 0.73, $t = 6.55$, $p = 0.000$). The estimate of the standardized path coefficient displays that the link between switching cost and customer loyalty is significant (H4 was supported: path coefficient = 0.18, $t = 3.99$, $p = 0.000$). The estimate of the standardized path coefficient indicates that the linkage between service quality and corporate

Figure 2. Hypothesized model and its path estimates ($p < 0.05$)

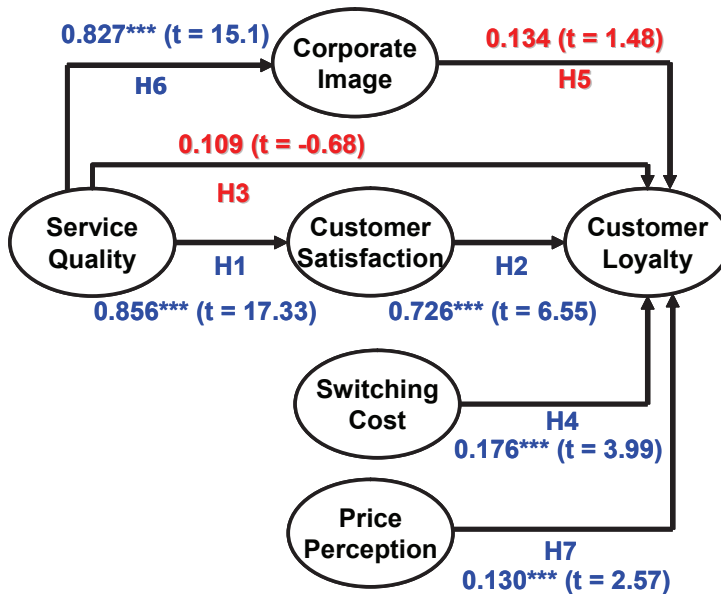


image is significant (H6 was supported: path coefficient = 0.83, $t = 15.1$, $p = 0.000$). The estimate of the standardized path coefficient displays that price perceptions affects customer loyalty greatly (H7 was supported: path coefficient = 0.13, $t = 2.57$, $p = 0.000$).

DISCUSSIONS AND CONCLUSIONS

Our findings show that service quality and customer satisfaction explained 73% and 53% of the variance of customer loyalty, respectively, suggesting that service quality and customer satisfaction have significant effects on customer loyalty. Moreover, as shown by the path estimates in Table 5, the relationship between service quality and customer loyalty mediated by customer satisfaction is much stronger than the one without the mediation effect of customer satisfaction. This supports the notion that customer satisfaction is a mediator in the link between service quality and customer loyalty.

The findings suggest that the reliability, assurance, and empathy dimensions of service quality are significant predictors of customer satisfaction. The reliability dimension is related to the connection speed and availability of the network, which form the core of user experience. The assurance dimension includes security of the transactions and trustworthiness of the customer service staff. They are essential to provide online services and transactions. Given the 24-hour operation of ISP users, the empathy dimension, which includes convenient operating hours with support, is crucial. In addition, due to the complexity of IT issues, the empathy dimension reflects the extent to which customer service staff understand customers' needs. This enables service staff to assist customers easier and better.

It is interesting to note that switching cost and price perception only explained 3.1% and 1.7% of the variance of customer loyalty, respectively. These findings suggest that ISP users are not price sensitive and switching cost is not a substantial barrier to ISP users to consider

switching. In addition, our results show that corporate image is not significantly related to customer loyalty either. This is because ISP users are rational, and therefore advertising and image building campaigns have a relatively limited impact on users' retention behaviors.

In a competitive market, it may be more difficult to recruit new customers than to retain existing customers. Quite often, profits generated from loyal customers increase as the relationships between service providers and customers grow in strength and intensity. Customer loyalty is considered as an effective way to long-term profitability in both business-to-business and business-to-consumer exchange relationships (Reichheld, 1996). Thus, companies have shifted their marketing focus from pure satisfaction generation to loyalty cultivation (Reichheld, 2001). They are more committed to creating and maintaining effective customer retention programs (Bolton, Kannan, & Bramlett, 2000), especially in regard to service subscriptions in the service industry such as the ISP sector. Many ISPs have expended great effort on devising competitive loyalty programs to retain their customers. Therefore, examining the factors that influence consumer loyalty intention is helpful for companies to design more effective customer retention strategies.

In addition, service firms have the tendency to invest heavily in building their corporate images. It is widely accepted that corporate image has the ability to instill loyalty in customers (Nguyen & LeBlanc, 1998; Zins, 2001). However, our study reveals that, in a competitive ISP market, the impact of corporate image on customer loyalty is not really significant. This suggests that it is not advisable for ISPs to channel substantial resources to establishing their corporate images with a view to retaining customers.

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