African Journal of Business Management Vol. 5(7), pp. 2919-2929, 4 April, 2011
Available online at http://www.academicjournals.org/AJBM
DOI: 10.5897/AJBM10.1402
ISSN 1993-8233 ©2011 Academic Journals

Full Length Research Paper

How does perceived risks complement switching costs in e-commerce?

Yung-Shen Yen

Department of Computer Science and Information Management, Providence University Taichung, Taiwan, Republic of China. E-mail: ysyen@pu.edu.tw.

Accepted 7 February, 2011

Customer acquisition and retention are two phases of an e-commerce life cycle. Switching costs and perceived risks affect both, but in different ways. This study examines these two well known, often contradicting variables in an integrated frame work and asks: Can perceived risks complement switching costs to give rises to new customer loyalty strategies for e-commerce enterprises? That is, do these two negative forces positively reinforce each other's effects in some manner? This study investigates 516 online consumers in Taiwan to help answer this question. The findings of this study reveal that perceived risks associate negatively with customer loyalty, whereas switching costs associate positively with customer loyalty. In addition, perceived risks and switching costs complement each other to influence customer loyalty from acquisition to retention. The reduction of perceived risk is the force working at the customer acquisition phase for the provider, whereas the increment of switching cost works at the customer retention phase against the competition.

Key words: Switching costs, perceived risks, customer loyalty, complement, e-commerce.

INTRODUCTION

Businesses have a long history of using switching costs to retain customers (Roos and Gustafsson, 2007; Wieringa and Verhoef, 2007). They learn to manage perceived risks in their attempts to acquire new customers. However, the field seldom explores the common ground of these two forces to investigate how managing one may positively reinforce the effect of the other to impact customer loyalty. The common ground, as it turns out, can be as simple as the fact that customer acquisition and retention are but two stages of the same life cycle of the business relationship – customers accepting the provider and then staying with the provider (Xue et al., 2006). For example, perceiving a risk at the beginning of buying, customers try to reduce it by relying on recommendations (Cunningham, 1967; Midgley, 1983), searching for additional information about the purchase (Beatty and Smith, 1987; Cox, 1967), or favouring domestic brands (Locander and Hermann, 1979). These cues can mitigate perceived risks for information asymmetry and increase purchase intention to the provider (Soopramanien et al., 2007; Mitchell, 1999; Park and Kim, 2003; Pires et al., 2004).

Switching cost is the other factor to influence customer loyalty (Caruana, 2004; Jones et al., 2007). It can be built into e-commerce in two ways: one is value provided to customers over transaction; the other is overall costs reduction for customers, such as less search costs, risk costs, and transactions costs. Hence, the reduction of perceived risks can increase switching costs to the provider (Rust and Kannan, 2003). Moreover, such switching costs can lock in customers against competition because customers will have relatively high perceived risks to other providers (Salam et al., 2003). Thus, the study expects that switching costs and perceived risks to be complementary: managing either of these forces may reinforce the other's effects at every stage. From the view of e-commerce life cycle, customers will have relatively high perceived risks when first contact the provider. On the other hand, once they accept it and likely stay with it, switching costs will be a critical factor to deter customers switching to the competitors (Burnham et al., 2003). Therefore, perceived risks will be the psychological forces working at the customer acquisition phase of the life cycle of customer-provider relationships against the provider; while psychological switching costs work at the customer retention phase against the competition. The field

does not yet investigate this possibility.

As such, the primary purposes of this study are three-fold. First, to extend the previous understanding of how switching costs and perceived risk affect customer loyalty to the realm of e-commerce. Secondly, to formulate the original concept of a complementary relationship between switching costs and perceived risks towards influencing customer loyalty. Thirdly, to identify the influences on customer loyalty in different stages of e-commerce life cycle.

The next section presents literature review and hypotheses of this study. Section three illustrates the research method for the empirical study. Section four present the analysis of the results of the study, to substantiate the hypotheses and verify the aforementioned conceptual analysis. Section five concludes the paper and reflects on some philosophical issues associated with switching costs and perceived risks on the internet.

LITERATURE REVIEW AND HYPOTHESES

The definition of complement

The definition of complement from Wikipedia (2010) is: "If goods A and B are complements, an increase in the demand for good A results in an increase in demand for good B. An example of this would be the demand for hot-dogs and hotdog buns. If the price of hotdogs decreases, then more hotdog buns would be demanded at any given price given that the total price of the two goods is lower than before." Moreover, Thorbjørnsen et al. (2009) indicate that the complementary effect denotes the goods serving as complements to other goods. For example, software is considered to complement for personal computers. In other words, the availability of software for Apple Computers is limited, the complementary effect may impact the decision of whether to buy an Apple computer or not. As thus, perceived risks and switching costs can be seen as complements each other in that both have similar psychological basis and affect customers' purchase decision. If the risks of customers' perception are reduced, this may increase their switching costs to the provider. On the other hand, when switching costs to the provider are high for customers, they will likely intend to stay with the provider, and then the risks of perception will be down. This mutual interaction, as discussed previously, can explain the complementary effect between switching costs and perceived risks.

Switching costs in e-commerce

Switching cost is defined as "the onetime costs facing the buyer of switching from one supplier's product to another's" (Porter, 1980). Therefore, switching cost can be conceptualized as the perception of the extent of the additional costs required to terminate the current relationship and secure an alternative.

Switching costs have been studied broadly in the service sectors; however, there are some major differences in nature between online services and offline services, such as the restrictions of operation time and its location (Yen, 2010). Hence, online customers will not be affected by tangible switching costs (for example, set-up costs, contract costs, learning costs), but may have intangible switching costs (for example, economic costs and psychological problems) instead. For example, online customers are more concerned about searching costs, history information, and service quality.

Therefore, with respect to the characteristics of e-commerce, it can be assumed switching costs for online customers mainly consists of economic costs and psychological costs.

Perceived risks in e-commerce

Perceived risk refers to the customers feeling uncertainty about loss or gain in a particular transaction (Lim, 2003; Jasper and Ouellette, 1994). Perceived risk in e-commerce has six components from the literature, including financial risk, performance risk, social risk, psychological risk, safety risk, and time/convenience loss risk (Chen and He, 2003; Brooker, 1984; Jacoby and Kaplan, 1972). Gutiérrez et al. (2010) further discriminate perceived risks into three types for customer involvement in online contexts; that is, channel-related risk, product-related risk, and social-related risk. Since this study mainly explore the interaction of customers and websites on the internet, channel-related risk will be suitable for the measurement of perceived risks in e-commerce. Therefore, this study refers six components of perceived risk in e-commerce, as discussed previously, but the contents are modified for approving channel-related risk.

Customer loyalty in e-commerce

Customer loyalty is "a feeling of attachment to or affection for a company's people, products, or services" (Jones and Sasser, 1995). Dick and Basu (1994) assert that customer loyalty only exists when repeat patronage combines with a high relative attitude. As such, customer loyalty can be seen as an attitudinal construct (Ajzen and Fishbein, 1980). In addition, So¨derlund (2006) employs repatronage intentions and word-of-mouth intentions as a subset of loyalty intentions. Such distinction between action and talk is an important aspect in organizational theory (Feldman and March, 1981), and is also applicable to the related studies of e-commerce (Santouridis and Trivellas, 2010). Hence, this study assumes customer loyalty in e-commerce can be measured by repatronage intentions (action) and recommendation to others (talk).

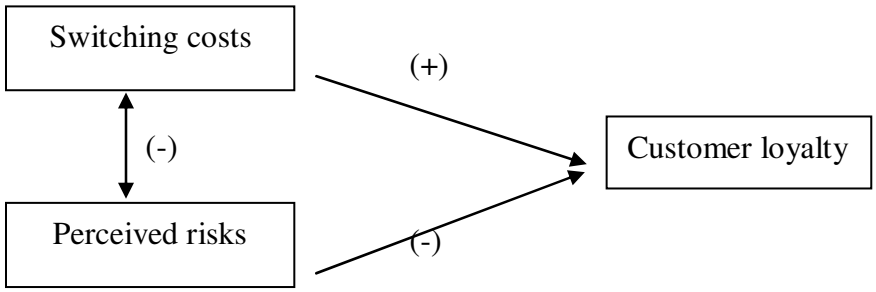

Figure 1. The conceptual model of this study. (+) positive influence, (-) negative influence.

Switching costs to customer loyalty

The concept of switching costs associated positively with customer loyalty is well known. Hence, the first hypothesis (H_1) is consistent with the previous understanding in the field (Chen and Hitt, 2002; Porter, 1980; Roos and Gustafsson, 2007). H1 do not represent a new result, but establish a reference point for the study.

H_1: Switching costs associate positively with customer loyalty in e-commerce.

Perceived risks to customer loyalty

The second hypothesis (H_2) formalizes results in the literature (Forsythe and Shi, 2003; Chen and Chang, 2005), concerning perceived risks associate negatively with customer loyalty in e-commerce.

H_2: Perceived risks associate negatively with customer loyalty in e-commerce.

The complementary relationship of switching costs and perceived risks

This study argues that the complementary effect of perceived risks and switching costs is statistically greater than the sum of their respective influences on customer loyalty when employed alone. For this purpose, the study needs to confirm that perceived risks are negatively related to switching costs, and the complementary relationship will yield added influence through perceived risks' impact on switching costs as well as on its own to customer loyalty. Moreover, the study further analyze the impacts on customer loyalty in different stages: perceived risks will have higher influence on customer loyalty than switching costs in the acquisition stage, whereas switching costs will have higher influence on customer loyalty than perceived risks in the retention stage. Therefore, this study brings forth the third, fourth, and fifth hypotheses (H_3, H_4, and H_5).

H_3: Switching costs are negatively related to perceived risks in e-commerce.

H_4: Switching costs and perceived risks will yield additional impact on customer loyalty beyond their respective effects when employed alone.

H_5: Perceived risks will have higher influence on customer loyalty than switching costs in the acquisition stage, whereas switching costs will have higher influence on customer loyalty than perceived risks in the retention stage.

Figure 1 depicts the research framework of the study discussed previously. The focus is the complementary relationship between switching costs and perceived risks, with respect to customer loyalty.

RESEARCH METHOD

Subjects

University students were recruited in the study for three reasons. First, university students are the greatest proportion of internet users (Ahn et al., 2004). Secondly, according to the 2004 Taiwan internet user survey report (http://survey.yam.com/survey2004/index.html, 2005), about 40% of internet users in Taiwan are university students. Thirdly, online customers generally are younger and better educated than conventional customers, meaning that the student subjects closely resemble the online customer population (Lin, 2007). In order to investigate consumer behaviours in different stages of e-commerce life cycle, Chiao et al. (2008) suggest that customers who have had a longer relationship with a specific website can be regarded as relational customers, while customers with a fairly new relationship can be regarded as transactional customers. According to this rule, those with a relationship of longer than three years are regarded as retentive customers, and those with a relationship of less than one year are regarded as acquisitive customers in this study.

For data sampling, the study conducted a stratified random sampling from a renowned private university in Taiwan. Subjects were drawn randomly from the undergraduate and graduate students across the management, information, science, and foreign

Table 1. Demographic characteristics of the sample.

Type of customer	Acquisitive customer		Retentive customer	
	Frequency	Percent	Frequency	Percent
Gender				
Female	160	62.5	163	62.7
Male	96	37.5	97	37.3
Total	256	100.0	260	100.0
Age				
19-29	218	85.2	223	85.8
30-40	36	14.0	31	11.9
41-50	2	0.8	6	2.3
Total	256	100.0	260	100.0
Education				
Undergraduate	165	64.5	171	65.8
Graduate	91	35.5	89	34.2
Total	256	100.0	260	100.0
College				
Management	65	25.4	63	24.2
Information	69	27.0	72	27.7
Science	62	24.2	66	25.4
Foreign Language	60	23.4	59	22.7
Total	256	100.0	260	100.0

language colleges for the survey. The sampling procedure was employed to ensure that the sample represents a broad cross-section of the student population and to avoid sample bias due to the inclusion of only certain types of students, such as management students or graduates. Data were collected over a period of two months. For acquisitive customers data, a total of 280 subjects responded, of which 24 were deleted due to missing data, and the valid subjects total 256. Meanwhile, for retentive customers data, a total of 280 subjects responded, of which 20 were deleted due to missing data, and the valid subjects total 260. In total, 516 valid subjects were obtained. The sample reveals that females (62.5 and 62.7%) outnumber males (37.5 and 37.3%), and the majority is in the 19 - 29 age group (85.2 and 85.8%). Undergraduate students (64.5 and 65.8%) exceed graduate students (35.5 and 34.2%). Students in four colleges have close samples (25.4, 27.0, 24.2, 23.4, 24.2, 27.7, 25.4 and 22.7%). The sampling distribution of this study matches the distribution of the population: the ratio of female to male is 6:4, the ratio of the 19 to 29 age groups is 85%, the ratio of undergraduate to graduate is 7:3, and the ratio of four college students is nearly equal in the university. Demographic data of the sample are shown in Table 1.

Measuring instruments

The design of the instruments is adopted from proven results in the literature with necessary modifications in e-commerce. First, this study revised the scales, 5 items, used in Sharma and Patterson (2000), which measures switching costs, including economic costs and psychological barriers, for financial planning services. Next, the scales of perceived risks, 6 items, used in Chen and He (2003), which include perceived financial risk, perceived performance risk, perceived social risk, perceived psychological risk, perceived safety risk, and perceived time/convenience loss risk. The scales of customer loyalty, 5 items, used in de Ruyter et al. (1998), which include repatronage intentions and recommendation to others. This study measures all items of the study using seven-point scales, where 1 = “strongly disagree” and 7 = “strongly agree”.

To examine the preliminary instrument for face validity, this study invited three e-commerce experts who are assistant professors of a university, to review the survey. They found that the third item of switching costs, “It is risky to change as the new supplier may not provide good service”, associated highly with perceived risk; the fourth item of switching costs, “I would feel frustrated if I terminate my current relationship with the supplier”, associated highly with customer loyalty. As thus, the study revised the former to the statement, “If I switch to the other retailer, the service offered by the new retailer might not work as well as expected.“; similarly, the latter revised to “I would feel frustrated if I change”. This result can ensure the instrument fitting the study. Overall, the variable items of the study are shown in Table 2.

Reliability and validity test

To verify research constructs of this study, exploratory factor analysis was conducted (EFA) to refine the measurement (Lin et al., 2003). First, the study used principle components with varimax rotation method. The eigenvalue criterion ($\lambda>1$) determined the number of factors. According to this rule, three factors were selected. To further improve the distinction between factors, the study removed the items that had factor loadings greater that 0.4 on

Table 2. The questionnaire design and the instruments.

Construct	Variable
Switching costs (SC)	SC1. Overall, it would cost me a lot of time and energy to find an alternative retailer.
	SC2. I would lose a lot of information about my transaction history if I change.
	SC3. If I switch to the other retailer, the service offered by the new retailer might not work as well as expected.
	SC4. I would feel frustrated if I change.
	SC5. Considering everything, the cost to stop doing business with the online retailer and start up with a new retailer would be high.
Perceived risks (PR)	PR1. My expected monetary loss resulting from purchase products from the online retailer is high.
	PR2. My expected failure of product performance if I buy products from the online retailer is high.
	PR3. If I buy products from the online retailer, I think I will experience high difficulty in gaining social reorganization (from family, friends etc).
	PR4. I will feel uneasy psychologically if I buy products from the online retailer.
	PR5. I do not think it is safe to buy products from the online retailer.
	PR6. I feel uncertainty as to whether the online retailer is time efficient in terms of dealing with the order and delivery.
Customer loyalty (CL)	CL1. I will recommend the online retailer to someone who seeks my advice.
	CL2. I will encourage friends and relatives to do business with the online retailer.
	CL3. I will do more business with the online retailer in the next few years.
	CL4. I will give positive comments about the online retailer to other people.
	CL5. I will consider this to be my first choice to buy its services on the online retailer.

two or more factors from the measurement (Hair et al., 1998). After these procedures were performed, we removed 4 items (including SC2 of switching cost; PR2 and PR3 of perceived risk; and CL5 of customer loyalty) were deleted in the acquisition stage, and 3 items (including SC5 of switching cost; PR3 of perceived risk; and CL3 of customer loyalty) were deleted in the retention stage. Therefore, 12 items across the three factors for customer acquisition data and 13 items across the three factors for customer retention data were remained for further study, the cumulative variance is 83.739% (for customer acquisition data) and 86.836% (for customer retention data); the standardized factor loading of each item is shown in Table 3.

Scale reliability was measured by Cronbach's alpha (α). The Cronbach's α in Table 3 indicates the reliability of the measurement constructs employed: specifically, in the acquisition stage, that of switching costs is 0.81, perceived risks 0.82, and customer loyalty 0.74. However, in the retention stage, that of switching cost is 0.90, perceived risk 0.92, and customer loyalty 0.82. These numbers satisfy the general requirements in the field, for example (Nunnally, 1978) suggest a reliability coefficient above 0.7, and Robert and Wortzel (1979) want the number to be between 0.70 and 0.98. Hence, these numbers confirm that this study carries good reliability.

Confirmation factor analysis (CFA) was performed for scale validity assessment (Anderson and Gerbing, 1988). Convergent validity can be measured by composite reliability (CR), standardized factor loadings (SFL), and average variance extracted (AVE); which typically are required to be greater than 0.8, 0.7, and 0.5, respectively. As shown in Table 3, some SFLs are under criteria, but scholars accept tolerantly SFL is higher than 0.5 (Chiao et al., 2008). Although, the CR value of A-CL is slightly less than 0.8, all of AVE surpassed the criteria. Thus, this study possesses adequate convergent validity.

In the test of discriminate validity, Table 4 shows that the AVE square root of each research variable is larger than the related coefficients of the variable and other variables. This is a clear case of positive proof (Fornell and Larcker, 1981). Thus, this study has adequate discriminate validity.

ANALYSES AND RESULTS

Econometric model and tests

To examine the proposed hypotheses, this study performed a structure equation modeling (SEM) using AMOS 17.0, based on multiple criteria: the Chi-square (χ^2)/df ratio, the root mean square error of approximation (RMSEA), the goodness of fit index (GFI), the adjust goodness of fit index (AGFI), the normed fit index (NFI), the comparative fit index (CFI), and the incremental fit index (IFI) (Byrne, 2001). The results are summarized in Table 5, which shows that all indices are satisfactory: In the acquisition stage, Chi-square (χ^2)/df = 2.82; RMSEA= 0.06; GFI= 0.95; AGFI= 0.90; NFI= 0.94; CFI= 0.94; and IFI= 0.93; meanwhile, in the retention stage, Chi-square (χ^2)/df = 2.65; RMSEA= 0.05; GFI= 0.97; AGFI= 0.91; NFI= 0.94; CFI= 0.96; and IFI= 0.95. Therefore, the goodness of fit for the full model is good.

The relationships among switching costs, perceived risks, and customer loyalty are shown in Table 5 and Figure 2. In the acquisition stage, switching costs

Table 3. Model of research constructs.

Construct and observable variable	M (SD)	SFL	CR	AVE	Cronbach's α
Customer acquisition					
A-SC			0.87	0.63	0.81
A-SC1	3.43 (0.94)	0.93			
A-SC3	3.23 (0.95)	0.89			
A-SC4	3.48 (1.01)	0.63*			
A-SC5	4.02 (1.12)	0.68*			
A-PR			0.87	0.63	0.82
A-PR1	5.30 (1.33)	0.92			
A-PR4	5.46 (1.17)	0.90			
A-PR5	5.63 (0.98)	0.58*			
A-PR6	5.85 (1.03)	0.72			
A-CL			0.79**	0.50	0.74
A-CL1	3.37 (1.35)	0.83			
A-CL2	3.47 (0.98)	0.85			
A-CL3	4.14 (1.22)	0.55*			
A-CL4	3.39 (1.10)	0.53*			
Customer retention					
R-SC			0.92	0.74	0.90
R-SC1	5.13 (1.51)	0.84			
R-SC2	4.87(1.34)	0.90			
R-SC3	5.07 (1.44)	0.87			
R-SC4	4.97 (1.63)	0.84			
R-PR			0.92	0.69	0.92
R-PR1	3.54 (1.25)	0.62*			
R-PR2	3.60 (1.63)	0.91			
R-PR4	4.12 (1.41)	0.92			
R-PR5	4.28 (1.22)	0.86			
R-PR6	3.78 (1.35)	0.81			
R-CL			0.85	0.60	0.82
R-CL1	5.23 (1.47)	0.80			
R-CL2	4.82 (1.08)	0.78			
R-CL4	5.33 (1.25)	0.85			
R-CL5	5.28 (1.53)	0.64*			

* Significant at SFL < 0.7; ** Significant at CR < 0.8.

associate positively with customer loyalty (β = 0.27, t = 4.18, p < 0.01); perceived risks associate negatively with customer loyalty (β = -0.38, t = -5.11, p < 0.01); and switching costs and perceived risks have a negative relation (β = -0.18, t = -3.16, p < 0.01). However, in the retention stage, these relationships are also significant: switching costs associate positively with customer loyalty (β = 0.55, t = 11.20, p < 0.01); perceived risks associate negatively with customer loyalty (β = -0.36, t = -5.02, p < 0.01); and switching cost and perceived risk have a negative relation (β = -0.70, t = -16.08, p < 0.01). Therefore, hypotheses H_1, H_2, and H_3 have been supported by the study.

For testing the complementary effect between switching cost and perceived risk, scholars likely used the competing model testing to verify the effect does exist (Chiao et al., 2008). The competing model was conducted with freeing one two-way route between switching costs and perceived risks. As shown in Table 5, the results are as follows: with the degree of freedom in the full model increased by 1, the value of χ^2 is only decreased by 1.34 (at the acquisition stage) and 1.29 (at

Table 4. Correlation between constructs.

Construct			
Customer acquisition	**A-SC**	**A-PR**	**A-CL**
A-SC	0.79		
A-PR	-0.18**	0.79	
A-CL	0.27**	-0.38**	0.71
Customer retention	**R-SC**	**R-PR**	**R-CL**
R-SC	0.86		
R-PR	-0.70**	0.83	
R-CL	0.55**	-0.36**	0.77

Diagonal elements in boldface represent the square root of AVE. ** Significant at $p<0.01$

Table 5. Goodness of fit indices for models.

Goodness of fit indices	Fit criteria	Acquisition stage			Retention stage		
		Full model	Competing model	$\Delta\chi^2$	Full model	Competing model	$\Delta\chi^2$
χ^2		143.86	142.52	1.34	164.34	163.05	1.29
df		51	50		62	61	
χ^2 / df	≦ 3	2.82	2.84		2.65	2.66	
RMSEA	≦0.08	0.06	0.06		0.05	0.05	
GFI	≧ 0.9	0.95	0.95		0.97	0.97	
AGFI	≧ 0.9	0.90	0.90		0.91	0.91	
NFI	≧ 0.9	0.94	0.94		0.94	0.94	
CFI	≧ 0.9	0.94	0.94		0.96	0.96	
IFI	≧ 0.9	0.93	0.93		0.95	0.95	

Relationship	Acquisition stage		Retention stage		Hypothesis supported
	β-value	t-value**	β-value	t-value**	
Switching costs → Customer loyalty (H_1)	0.27	4.18	0.55	11.20	Yes
Perceived risks → Customer loyalty (H_2)	-0.38	-5.11	-0.36	-5.02	Yes
Switching costs → Perceived risks (H_3)	-0.18	-3.16	-0.70	-16.08	Yes
Perceived risks → Switching costs (H_3)	-0.18	-3.16	-0.70	-16.08	Yes

** Significant at $p<0.01$

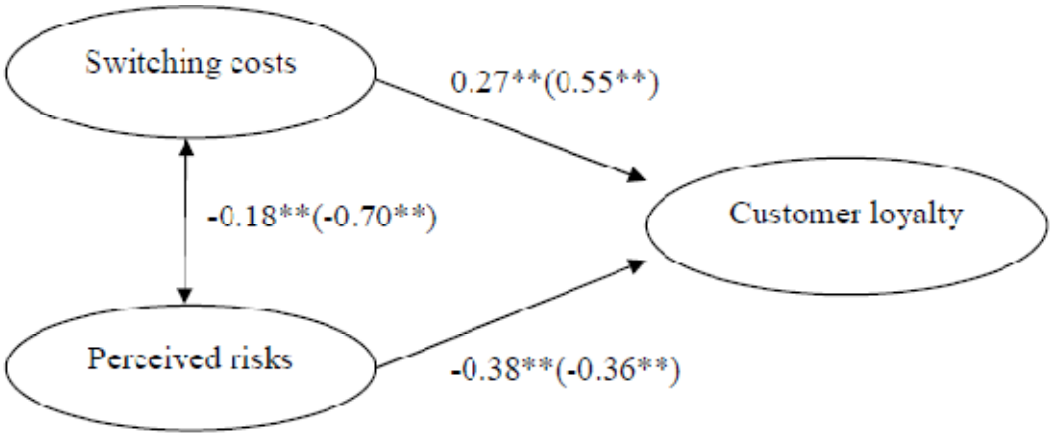

Figure 2. The structural model of this study. **Significant at p<0.01; the numbers without parentheses represent standardized coefficients in the acquisition stage; the numbers in parentheses represent standardized coefficients in the retention stage.

the retention stage), respectively. The nested model test is not significant in the two stages: $\Delta\chi^2 < \chi^2_{0.05}[1] = 3.84$. That is, the competing model is no better than the full model in the two stages. It clearly indicates that switching costs and perceived risks reinforce each other in the study to result in a total impact on customer loyalty that is higher than the sum of their separate influence from acquisition to retention. Hence, hypothesis H_4 has been supported.

For the total effect of affecting customer loyalty, perceived risks (direct effect 0.38 + indirect effect 0.05 = 0.43) is higher than switching costs (direct effect 0.27 + indirect effect 0.07 = 0.34) in the acquisition stage, whereas switching costs (direct effect 0.55 + indirect effect 0.25 = 0.80) is higher than perceived risks (direct effect 0.36 + indirect effect 0.39 = 0.75) in the retention stage. Hence, hypothesis H_5 has been supported.

DISCUSSION

The study has yielded several interesting findings. First, it confirms that both switching costs and perceived risks are significant factors affecting customer loyalty in e-commerce. As suggests by the first two hypotheses (H_1 and H_2) switching costs have significant positive influence, and perceived risks significant negative influence in the two stages. Secondly, the evidence reveals that the last three hypotheses (H_3, H_4, and H_5) are supported. This implies that perceived risks and switching costs can complement each other from acquisition to retention; besides, perceived risks have higher influence on customer loyalty than switching costs in the acquisition stage, while switching costs have higher influence on customer loyalty than perceived risks in the retention stage.

Therefore, it can be gotten that the inference that customers will have high perceived risks and low switching costs to the provider in the acquisition stage as a result of the unknown to the provider or more choices of finding alternatives. The strategy to acquisitive customers is to reduce perceived risks to the provider, such as payment security, money-back guarantee, remote contact, etc. (Luo et al., 2010). At this stage, how to acquire new customers is a viable business for the provider (Gupta and Lehmann, 2003). Reducing perceived risk is a common but useful strategy to enhance customer purchase intention (Chen and He, 2003). Once the customer has the experience with the provider, he/she will likely consider it to be high priority to buy its services. It means switching costs will be increased for the reduction of perceived risks. On the other hand, when customers are familiar with the provider, it can be infer that they will have high switching costs and low perceived risks to the provider in the retention stage due to the previous experiences of transaction or the communications (Cases, 2002). The strategy to retentive customers is to increase switching costs against the competition, such as service quality, ease of use, breadth of offerings, customer perceived value (Rust and Kannan, 2003; Chen and Hitt, 2002). At this stage, how to deter customers switching to the competitors is an important issue for the provider. Increasing switching costs is a critical strategy for the provider locking the customer (Chen and Hitt, 2002). In general, the customer more likely resists the restrictions of switching barriers, which cannot freely select the providers for his/her willingness (Yanamandram and White, 2006). However, to retain the customer permanently, the provider shall continually increase perceived value or reduce perceived risks to heighten switching costs (Kim et al., 2004; Tan, 1999). With respect to high switching costs, customers will likely repurchase to it,

which results in further reduction of perceived risks. As such, this study verifies that switching costs and perceived risks are significantly negatively correlated, and hence they form a complementary relationship: lowering one may reinforce the other in a customer life cycle relationship. They may couple in a mutually reinforcing relation from acquisition to retention.

This finding implicates that the comfort zone concept proposed in this study is logically sound: switching costs and perceived risks are neither mutually independent, nor mutually exclusive; but rather, they ought to be considered together. A new integrative concept such as the comfort zone could be advantageous to e-commerce investigations. Moreover, the data show that the variable perceived risks maybe negatively associated with that of switching costs, irrespective to how long the customer has been engaging with the business. These result highlights their complementary relationship where switching costs starts to emerge: when one factor changes over time in the consumer's relationship with an e-commerce business, the other changes, too, in the opposite direction. Together, they may establish a relatively stable nature of the total comfort zone (although, its inner composition is dynamic) and define a new direction for e-commerce studies.

The study summarizes the aforementioned analysis into this proposition:

The new generic strategy for customer acquisition and retention

Perceived risks and switching costs complement and reinforce each other to influence customer loyalty, so that each or both may be employed to manage customer acquisition and retention in e-commerce. Reducing perceived risk may work at the customer acquisition phase for the provider, whereas increasing switching cost works at the customer retention phase against the competition.

Conclusion

The primary contributions of the study are the conceptual formulation of a new e-commerce concept, the customer comfort zone, based on the commonality of perceived risks and switching costs in e-commerce, to explain how these two forces complement each other to achieve a life cycle effect on customer loyalty; and its empirical validation. This study formulates a set of formal hypotheses to verify the new ideas.

While the first two hypotheses re-affirm some previous results in e-commerce, the last three hypotheses represent original ideas establishing the complementary relationship between switching costs and perceived risks. The empirical study involves a group of 516 e-commerce users in Taiwan and confirms these hypotheses. The findings of this study aim to contribute to e-commerce strategies concerning customer acquisition and retention.

LIMITATION AND SUGGESTION

Although, this study employs econometric models and other data collection instruments to further investigate the thesis, we performed SEM using surveys is sufficient for establishing a first confirmation of the new concept, which the paper accomplishes. The first confirmation is significant because of the originality of the thesis and its implications for future e-commerce research. With the new ideas affirmed, the paths to further investigations are rather self-evident: conducting larger scale empirical studies using more refined models with more exhaustive instruments on more comprehensive data sets.

The study is focused on e-commerce. However, the complementary relationship of switching costs and perceived risks may apply to other genres of digitally connected services (Chesbrough and Spohrer, 2006; Hsu, 2009). For example, in the consulting field, an on-demand business provider would be hard pressed to build switching costs when its solutions have to incorporate open source technology. This situation is a far cry compared to traditional consulting where virtually all solutions are completely proprietary. In this case, according to the new theory, a reputable service provider may develop perceived risks management strategies in the place of switching costs to help gain on its competitors.

In a similar way, the complementary relationship between switching costs and perceived risks likely exists in market segments where free competition and high uncertainty reign. To further pursue this line of study, one can reduce the general concept of the customer comfort zone for the life cycle effect to particular e-commerce strategies in certain business spaces. One can also conduct longitudinal studies along the life cycle phases. This extension will elaborate the complementary dynamism between switching costs and perceived risks at every stage of the process.

Finally, new business designs on the internet may require some fundamental new thinking on both switching costs and perceived risks. For example, the network effects (for example, word of mouth) are an amazingly powerful phenomenon on the internet, and so is social networking. Do they function on the basis of perceived gains, while ignoring perceived risks? More fundamentally, how do people reconcile the negative forces of switching costs and perceived risks with the positive, free-willing spirit of the cyberspace which has been driving digital connections scaling among persons and organizations? Is customer loyalty a misleading concept on the internet that needs a fundamental reformulation?

ACKNOWLEDGEMENT

The author thanks Cheng Hsu, Rensselaer Polytechnic Institute (NY), for giving valuable suggestions.

REFERENCES

Ahn T, Ryu S, Han I (2004). The impact of the online and offline features on the user acceptance of Internet shopping malls. Electron. Comm. Res. Appl., 3: 405-420.

Ajzen I, Fishbein M (1980). Understanding Attitudes and Predicting Social Behavior, Prentice Hall, Enblewood Cliffs, NJ.

Anderson J, Gerbing DW (1988). Structural equation modeling in practice: A review and recommended two-step approach. Psychol. Bull., 103(3): 411-423.

Beatty SE, Smith SM (1987). External search effort: An investigation across several product categories, J. Consum. Res., 14(1): 83-95.

Brooker G (1984). An assessment of an expended measure of perceived risk, In: T.C. Kinnar (Ed.) Advances in Consumer Research (Urbana, IL, Association for Consumer Research).

Burnham TA, Frels JK, Mahajan V (2003). Consumer switching costs: A typology, antecedents, and consequences, J. Acad. Mark. Sci., 31(2): 109-126.

Byrne BM (2001). Structural Equation Modeling with AMOS: Basic Concept, Applications and Programming, New Jersey: Lawrence Erlbaum Associates Publishers.

Caruana A (2004). The impact of switching costs on customer loyalty: A study among corporate customers of mobile telephony. J. Target. Meas. Anal. Market., 12(3): 256-268.

Cases A (2002). Perceived risk and risk-reduction strategies in Internet shopping. Int. Rev. Retail Distribution Consum. Res. 12(4): 375-394.

Chen P-Y, Hitt LM (2002). Measuring switching costs and the determinants of customer retention in Internet-enabled business: A study of the online brokerage industry. Infor. Syst. Res., 13(3): 255-275.

Chen R, He F (2003). Examination of brand knowledge, perceived risk and consumers' intention to adopt an online retailer. Tot. Qual. Manage. Bus. Exc., 14(6): 677-693.

Chen T, Chang H (2005). Reducing Consumers' Perceived Risk through Banking Service Quality Cues in Taiwan. J. Bus. Psychol., 19(4): 521-540.

Chesbrough H, Spohrer J (2006). Research Manifesto for Services Science, Com. ACM, 49: 35-40.

Chiao Y, Chiu Y, Guan J (2008). Does the length of a customer-provider relationship really matter? Serv. Ind. J., 28(5): 649-667.

Cox DF (1967). Risk Handling in Consumer Behavior- an Intensive Study of Two Cases, in Cox (ed.), Risk-Taking and Information Handling in Consumer Behavior, Boston: Harvard University Press: 34-81.

Cunningham SM (1967). Perceived risk and brand loyalty, In Cox, D. F. (ed.): Risk-taking and information handling in consumer behavior. Boston University Press, Boston: 507-523.

de Ruyter K, Wetzels M, Bloemer J (1998). On the relationships between perceived service quality, service loyalty and switching costs, Int. J. Ser. Ind. Manage., 9(5): 436-453.

Dick AS, Basu K (1994). Customer loyalty: toward an integrated conceptual framework, J. Acad. Mark. Sci., 22(2): 99-113.

Feldman MS, March JG (1981). Information in organizations as signal and symbol. Admin. Sci. Q., 26: 171-186.

Fornell C, Larcker DF (1981). Evaluating structural equations with unobservable variables and measurement error. J. Market. Res., 18(1): 39-50.

Forsythe SM, Shi B (2003). Consumer patronage and risk perceptions in Internet shopping. J. Bus. Res., 56: 867-875.

Gupta S, Lehmann DR (2003). Customers as assets. J. Interact. Market., 17(1): 9-24.

Gutiérrez SSM, Izquierdo CC, Cabezudo RSJ (2010). Product and channel-related risk and involvement in online contexts. Elect. Commun. Res. Appl., 9: 263-273.

Hair JF, Anderson RE, Tatham RL, Black WC (1998). Multivariate data analysis, N.Y.: Macmillan.

Hsu C (2009). Service Science: Design for Scaling and Transformation, World Scientific and Imperial College Press, Singapore.

Jacoby J, Kaplan LB (1972). The components of perceived risk, In: M. Venkatesan (Ed.) Proceedings, Third Annual Conference (Urbana, Association for Consumer Research).

Jasper CR, Ouellette SJ (1994). Consumers' perception of risk and the purchase of apparel from catalog. J. Direct Market., 8(2): 23-26.

Jones MA, Reynolds KE, Mothersbaugh DL, Beatty SE (2007). The Positive and Negative Effects of Switching Costs on Relational Outcomes". J. Serv. Res., 9: 335-355.

Jones TO, Sasser WE Jr. (1995). Why satisfied customers defect, Harv. Bus. Rev., 73(6): 88-99.

Kim M, Park M, Jeong D (2004). The effects of customer satisfaction and switching barrier on customer loyalty in Korean mobile telecommunication services, Telecommun. Policy, 28: 145-159.

Lim N (2003). Consumers' perceived risk: sources versus consequences, Electron. Commun. Res. Appl., 2: 216-228.

Lin H (2007). The Impact of Website Quality Dimensions on Customer Satisfaction in the B2C E-commerce Context. Total Qual. Manage., 18(4): 363-378.

Lin N, Weng JCM, Hsieh Y (2003). Relational Bonds and Customer's Trust and Commitment – A Study on the Moderating Effects of Web Site Usage. Serv. Ind. J., 23(May): 103-124.

Locander WB, Hermann PW (1979). The effect of self-confidence and anxiety on information seeking in consumer risk reduction. J. Market. Res., 16(2): 268-274.

Luo X, Li H, Zhang J, Shim JP (2010). Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: An empirical study of mobile banking services. Decis. Supp. Syst., 49(2): 222-234.

Midgley DF (1983). Patterns of interpersonal information seeking for purchase of a symbolic product. J. Market. Res., 20(1): 74-83.

Mitchell V-W (1999). Consumer perceived risk: conceptualizations and models. Eur. J. Market., 33(1): 163-195.

Nunnally JC (1978). Psychometric Theory (2nd ed), New York: McGraw-Hill.

Park C, Kim Y (2003). Identifying key factors affecting consumer purchase behaviour in an online shopping context. Int. J. Retail Distrib. Manag., 31(1): 16–29.

Pires G, Stanton J, Eckford A (2004). Influences on the perceived risk of purchasing online, J. Consum. Behav., 4(2): 118-131.

Porter ME (1980). Competitive Strategy: Techniques for Analyzing Industries and Competitors. New York: Macmillan.

Robert ML, Wortzel LH (1979). New life-style determinants of women's food shopping behavior. J. Market., 43(Summer):.28-39.

Roos I, Gustafsson A (2007). Understanding Frequent Switching Patterns: A Crucial Element in Managing Customer Relationships. J. Serv. Res., 10(August): 93-108.

Rust RT, Kannan PK (2003). E-service: a new paradigm for business in the electronic environment. Commun. ACM, 46(6): 36-42.

Salam AF, Rao HR, Pegels CC (2003). Consumer-Perceived Risk in E-Commerce Transactions. Commun. ACM, 46(12): 325-331.

Santouridis I, Trivellas P (2010). Investigating the impact of service quality and customer satisfaction on customer loyalty in mobile telephony in Greece. Total Qual. Manage., 22(3): 330-343.

Sharma N, Patterson PG (2000). Switching costs, alternative attractiveness and experience as moderators of relationship commitment in professional, consumer services. Int. J. Serv. Ind. Manage., 11(5): 470-490.

Söderlund M (2006). Measuring customer loyalty with multi-item scales. Int. J. Serv. Ind. Manage., 17(1): 76-98.

Soopramanien DGR, Fildes R, Robertson A (2007). Consumer decision making, E-commerce and perceived risks. Appl. Econ., 39(17): 2159-2166.

Tan SJ (1999). Strategies for reducing consumers' risk aversion in Internet shopping. J. Consum. Market, 16(2): 163-180.

Thorbjørnsen H, Pedersen PE, Nysveen H (2009). Categorizing networked services- The role of intrinsic-, user network-, and complement network attributes. Eur. J. Mark., 43(3/4): 371-197.

Wieringa JE, Verhoef PC (2007). Understanding Customer Switching Behavior in a Liberalizing Service Market. J. Serv. Res., 10(November): 174-186.

Wikipedia (2010). Complementary goods, available at: http://en.wikipedia.org/wiki/Complement_good, (accessed on 30 August 2010).

Xue L, Ray G, Whinston AB (2006). Strategic Investment in Switching Cost: An Integrated Customer Acquisition and Retention Perspective. Int. J. Electron. Commun., 11(Fall): 7-35.

Yanamandram V, White L (2006). Switching barriers in business-to-

business services: a qualitative study. Int. J. Serv. Ind. Manage., 17(2): 158-192.
Yen Y (2010). Can perceived risks affect the relationship of switching costs and customer loyalty in e-commerce? Int. Res., 20(2): 210-224.