Exploring the Impact of Switching Barriers on e-Loyalty

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Abstract

Past studies in e-commerce loyalty were mostly focused on the effects of customer satisfaction and trust on loyalty toward online vendors. Few studies investigated the impacts of switching barriers, whilst they are widely proven to affect customer loyalty in offline commerce. Even in a handful of studies that did deal with switching barriers, their treatment of the subject remained at best superficial. This may have to do with the fact that switching costs in e-commerce could be comparatively negligible, as switching to another online vendor often involves one simple mouse click. In this study, we investigated the impact of switching barriers on loyalty under the e-commerce context. Furthermore, the extent of switching barriers which could be affected by those positive factors (most constructs were adopted from IDT) was also examined. The statistical testing results revealed that combined model which includes both the positive factors and the switching barriers explains the loyalty formation process more strongly (R^2 = 0.543) than each separated models (R^2 = 0.468 for positive factor only model, and R^2 = 0.365 for switching barrier only model). While only the two switching barriers such as convenience and emotional were shown to be statistically significant, we found that trust strongly influences customer's emotional barrier, let alone direct impact on loyalty, which thereby influences loyalty. The results offer insights for better understanding switching barriers in e-commerce related applications.

Keywords : e-Commerce, Switching Barrier, e-Loyalty, Trust, IDT(Innovation Diffusion Theory)

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1. Introduction

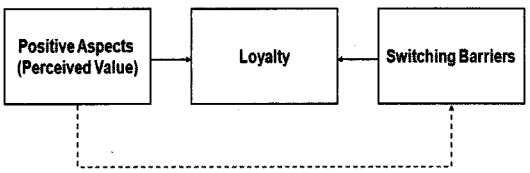
In an online environment, a consumer has a chance to view and evaluate products or services that interest them before purchasing them, and easily compare sellers providing similar products and services. When customers are satisfied with the quality of products or services purchased and received and develop trust in an e-store, these positive perceptions incite them to make repeat purchases at the same store.

As such, past studies in e-commerce loyalty were mostly focused on the effects of customers' satisfaction and trust on loyalty toward online vendors [e.g. Chen et al., 2010; Jin et al., 2010]. However, in general, there are opposite aspects of customer loyalty contrary to positive factors affecting customer satisfaction, which are switching barriers. Although it is crucial to understand switching barriers, as well as investigating positive factors influencing customer satisfaction, few studies [e.g. Jones et al., 2000; Burnham, 2003] investigated the impacts of switching barriers under the online commerce environment. While switching barriers are widely proven to affect customer loyalty in offline commerce, they are relatively neglected in online commerce partly because of simple one-click only switching easiness.

In this paper, we intended to fill this research gap. Specifically, at first, we investigated what are the valid switching barriers in e-commerce. Secondly, we analyzed the magnitude of switching barriers impact on loyalty formation in e-commerce. Finally, we examined if positive factors would influence on enhancing switching barrier to develop comprehensive e-loyalty formation framework.

2. Research Model and Hypotheses

As illustrated in <Figure 1>, we examined the impact of both the positive aspects and the switching barriers impacts on loyalty, and the mediating impact between them. As for the perceived values, we adopted the three constructs of relative advantage, convenience, and compatibility from Rogers' innovation adoption and diffusion theory [2003]. In addition, we separately included the trust to reflect the most significant construct proved to be critically affecting the loyalty in e-commerce. The constructs of switching barriers are extracted from the extant literatures which are studied in online and offline environment.



〈Figure 1〉 Research Framework

Loyalty is the feeling that a customer has about a brand which ultimately generates positive and measurable financial results [Duffy, 2003]. Improvements in customer retention and increase in market share are the obvious economic benefits of customer loyalty. In dealing with consumers' continuing intention of purchasing products provided by the present store, we considered three of the five innovation char-

acteristics, namely, relative advantage, compatibility and convenience (including positive meaning of 'complexity'), and excluded observability and trialability. Since we investigate the loyalty formation process of customers who experienced shopping products or services, among the five constructs constituting innovation adoption and diffusion, both the observability and trialability of them are not applicable. Previous literatures also suggested that relative advantage, compatibility, and complexity were mostly employed to explain innovation adoption.

Relative advantage, in the context of this study, refers to the extent to which a customer believes that shopping online provides more or better benefits in terms of price competitiveness, service quality, and so on. This is a factor which can influence the favorable perception of shopping products provided by an extant store, at an economic and social level, as well as in terms of personal preference.

Convenience opposed to complexity, in the context of innovation adoption, refers to the extent to which a customer feels that the website is simple, intuitive, and user-friendly, in addition to the ease of navigating products and selecting them. The degree of convenience felt by customers accustomed to the ease of navigating products and buying them at e-store is likely to affect their intention to continue to buy the products.

Both relative advantage, which refers to the incremental benefits of the innovation in comparison to its existing substitutes, and complexity, which is a measure of how difficult it would be to learn to use the innovation, already have comparable representations in TAM through the constructs of usefulness and ease of use.

In the context of this study, compatibility refers to the extent to which a customer believes that shopping online fits/matches his/her lifestyle, needs, and shopping preference. In the case of shopping, the familiarity felt by a user, accustomed to shopping behavior of existing store such as navigating, searching, comparison, payment, and so on, is likely to influence his or her satisfaction and intention to continue shopping, along with its compatibility with his or her personal taste and lifestyle. By aggregating the above discussions, we derived our three hypotheses as follows.

H1.1 : There is a positive association between relative advantage and loyalty to an e-store.

H1.2 : There is a positive association between convenience and loyalty to an e-store.

H1.3 : There is a positive association between compatibility and loyalty to an e-store.

The term 'trust' is given varying definitions in social science fields, such as sociology, social psychology and organizational behavior, depending on the context of discussion. Trust, in a social psychological sense, is the belief that other people will react in a certain predictable way. In brief, trust is a belief that one can rely upon a promise made by another [Pavlou, 2003]. Social psychology characterizes trust in terms

of expectations and willingness to engage in a transaction, the risks associated with acting on such expectations, and the contextual factors that either enhance or inhibit the development and maintenance of positive expectations [Mayer et al., 1995].

In the context of e-commerce, trust beliefs include the online consumers' beliefs and expectancies about trust-related characteristics of the online seller [McKnight and Chervany, 2002]. The online consumers desire the online sellers to be willing and able to act in the interest of consumers, to be honest in transactions (and not divulge personal information to other vendors), and to be capable of delivering the ordered goods as promised. Whereas many trust studies in psychology and organizational behaviors focus on interpersonal relationships, others, in economic and strategy fields, are concerned with inter-organization relationships.

Trust is an important factor in the buyer-seller relationship in e-commerce [Sonja and Ewald, 2003]. Trust is also one of the most frequently cited reasons by consumers for their unwillingness to purchase online and plays a critical role in facilitating online transactions. Recently, there have been a number of empirical studies investigating the role of trust in the specific context of e-commerce. Most studies found that trust plays a significant role in determining a customer's actions regarding a company. Therefore, we established the following hypothesis.

H1.4 : There is a positive association between trust and loyalty to an e-store.

Switching costs are defined as the customer-perceived economic and psychic costs associated with changing from one alternative to another [Jones et al., 2000]. Switching costs include time, effort, and financial costs such as those associated with learning to use a new piece of equipment. Perceived switching barriers correspond to the time, money and effort associated with changing service providers, according to customer perception. Switching barriers, most commonly discussed concerning traditional retail businesses, relate to factors such as interpersonal relationship with sales staff and/or the relative attractiveness of alternative suppliers [Jones et al., 2002].

Price, complaint handling, competition, and ethical differences with the organization are also considered to have an impact on switching behavior. To be effective, switching barriers should lock in the customer so that acquisition costs are repaid through repeat purchases [Keaveny, 1995]. Some examples of online switching barriers include differences in the quality of search tools, the need to redo credit application and samples provided by the e-store. More theoretically-oriented, recent studies on what stops customers from leaving have identified three types of switching costs [Chen and Hitt, 2002]; financial costs that translate into direct losses of quantifiable monetary resources; procedural costs associated with the loss of time and/or the requirement of effort, and; relational costs that are associated with the occurrence of psychological or emotional discomfort. In this study, we redefined and organized switching barriers, through consulting related marketing and e-

commerce literatures, as in <Table 1>.

By switching to a new provider, consumers may, for instance, lose customer reward points they have accumulated with the incumbent provider and certain discounts or benefits that are not offered to new customers. We classified losses of this type of benefits that may discourage customers from switching suppliers as benefit-loss barrier. Meanwhile, many consumers, once they become familiar with a website, feel reluctant to try another, especially if they have spent time and effort to customize the site for themselves to better suit their needs and trust products and services provided by the online store and its employees. We refer to the reluctance to switching caused by this type of tie to an online store as emotional barrier.

Learning barrier can be defined as the time and effort costs of acquiring new skills or know-how needed in order to use a new product or service effectively. Uncertainty barrier can be defined as the costs of accepting uncertainty with the potential for a negative outcome when adopting a new provider about which the consumer has insufficient information. Finally, customers, once they get used to finding products and conducting transactions at a store, may hesitate to switch to another store. We refer to this habit-induced reluctance to switching as convenience barrier. Contrary to the positive effect of satisfaction on loyalty, the effects of switching barriers on the prevention of customer desertion are formulated as the following hypotheses.

H2.1 : A customers' perceived benefit-loss barrier is positively associated with loyalty to an e-store.

H2.2 : A customers' perceived learning barrier is positively associated with loyalty to an e-store.

H2.3 : A customers' perceived convenience barrier is positively associated with loyalty to an e-store.

H2.4 : A customers' perceived uncertainty barrier is positively associated with loyalty to an e-store.

H2.5 : A customers' perceived emotional barrier is positively associated with loyalty to an e-store.

<Table 1> Perceived Switching Barriers

Switching Barriers		Switching Costs		
Redefined in our research	Balabanis et al. [2006]	Jones et al. [2002]	Jones et al. [2000]	Burnham et al. [2003]
Benefit-Loss Barrier	Economic barrier	Economic costs, Contractual costs	Switching costs	Financial switching costs
Emotional Barrier	Emotional barrier	Psychological costs	Interpersonal relationship	Relational switching costs
Convenience Barrier	Convenience barrier, Speed barrier	Search costs, Setup costs	Switching costs	Procedural switching costs
Learning Barrier	Familiarity barrier	Learning costs		
Uncertainty Barrier		Continuity costs		

3. Research Methods

The data for this study were collected randomly through a web survey and a paper survey of the general public. Before the actual survey, the questionnaire was pre-tested on a group of experts, including university faculties and researchers conducting research on internet shopping malls. Using their feedback, the questionnaire items and measurement variables were appropriately revised and supplemented. A total of 286 completed questionnaires were returned, 140 from the web survey and 146 from the paper survey. More information about the samples and data collection method is provided in <Table 2> below, summarizing the demographic profile of the respondents.

〈Table 2〉 Respondent Profile

Category		Number	% Share
Sex	Male	103	36%
	Female	183	64%
	Total	286	100%
Age	Under 19	8	3%
	20~29	146	51%
	30~39	92	32%
	40~49	31	10%
	50 and older	9	4%
	Total	286	100%
Level of Education	High school graduates	48	17%
	Some college	81	28%
	College graduates	130	45%
	Some graduate studies	19	7%
	Post-graduate degree holders	8	3%
	Total	286	100%
Household Income (for 1month)	< 1000000	100	35%
	1000000~2000000	80	28%
	2000000~3000000	51	18%
	> 3000000	55	19%
	Total	286	100%

The survey was designed to discover factors and their impacts on loyalty. Measurement items for each variable used in the survey questionnaire were selected among those widely used in the existing literature, and some of the questionnaire items were created by reformulating operational definitions of the variables in the form of a question. A 7-point Likert-type multiple-item scale was used, assigning a score between 1 and 7 (1 being 'strongly disagree' and 7 'strongly agree').

We adopted the items to measure the three constructs of innovation adoption and diffusion mainly from the similar studies of Moore and Benbasat [1991], and Agarwal and Prasad [1997]. The items for trust and loyalty were modified with reference to Lee and Turban [2001], Devaraj et al. [2002]. The measurement items for five constructs of switching barriers were refined based upon Balabanis et al. [2006], Jones et al. [2002], and Burnham et al. [2003].

The individual reliability of the items is evaluated by examining the loadings or simple correlations of the indicators with their respective constructs. After eliminating one of the items measuring customer retention, our results showed that all indicators exceed the 0.55 threshold proposed by Falk and Miller [1992] for the initial development of scales, and even the stricter threshold of 0.707 (except for STB) proposed by Carmines and Zeller [1979]. In order to evaluate the reliability of the constructs we used the composite reliability indicator, an indicator widely regarded as more effective than Cronbach's α [Fornell and Larcker, 1981]. As can be seen from the results listed in <Table 3>, all our

〈Table 3〉 Reliability and Average Variance Extracted

Construct	Indicator	Factor Loading	t-Value	Composite Reliability	AVE
Relative Advantage	RA1	0.8194	24.4226	0.901	0.694
	RA2	0.8420	34.4372		
	RA3	0.8846	50.5438		
	RA4	0.7927	23.9354		
Convenience	CV1	0.7099	16.5110	0.869	0.501
	CV2	0.7499	19.7222		
	CV3	0.7413	20.8076		
	CV4	0.7847	24.8894		
Compatibility	CP1	0.8927	63.4307	0.928	0.812
	CP2	0.9092	56.5914		
	CP3	0.9026	49.8249		
Trust	TR1	0.7931	27.1128	0.904	0.654
	TR2	0.7986	29.7175		
	TR3	0.7797	24.1149		
	TR4	0.8503	49.7919		
	TR5	0.8196	35.8197		
Benefit-Loss Barrier	BB1	0.7913	26.1643	0.913	0.677
	BB2	0.8389	29.0254		
	BB3	0.8597	41.1146		
	BB4	0.7974	20.3224		
	BB5	0.8248	27.4668		
Learning Barrier	LB1	0.8263	21.9610	0.917	0.734
	LB2	0.8588	39.0215		
	LB3	0.8888	46.0987		
	LB4	0.8527	35.3778		
Convenience Barrier	CB1	0.8459	34.8678	0.907	0.709
	CB2	0.8651	39.6548		
	CB3	0.8499	33.5546		
	CB4	0.8049	24.3133		
Uncertainty Barrier	UB1	0.8314	28.7393	0.923	0.750
	UB2	0.8838	41.7962		
	UB3	0.8881	40.4747		
	UB4	0.8599	34.2033		
Emotional Barrier	EB1	0.8195	32.9199	0.909	0.715
	EB2	0.8454	40.5822		
	EB3	0.8868	59.3044		
	EB4	0.8303	31.0659		
Loyalty	LY1	0.7886	29.2883	0.902	0.647
	LY2	0.8384	42.9511		
	LY3	0.8114	27.8158		
	LY4	0.7563	22.5613		
	LY5	0.8250	41.1013		

Note) Factor Loading > 0.7, t-Value > 2.58, Composite Reliability > 0.7, AVE > 0.5.

constructs proved reliable since their composite reliability values exceed both the thresholds of 0.7 and 0.8.

Convergent validity was tested using the measurement technique developed by Fornell and Larcker [1981], known as the average variance extracted (AVE). An AVE value of 0.50 and above indicates that 50 percent or more of the variance of the construct is caused by its indicators. The AVE values of all constructs exceeded the reference value of 0.50. <Table 3> lists the AVE value of each of the constructs.

To test the discriminant validity of constructs, Fornell and Larcker [1981] proposed to compare the AVE of each construct (average variance shared between the construct and its indicators) with the variance shared between the same construct and other constructs of the model (square correlation between two constructs), to determine whether the former exceeds the latter.

In this study, we compared the square root of the AVE measurements with the correlations between the constructs (see <Table 4>). A construct demonstrates satisfactory discriminant validity, when the square root of its AVE (principal diagonal) value exceeds its correlation with other constructs. Our test found that the square root of the AVE was greater than the correlations between constructs, for all constructs, confirming the existence of discriminant validity.

4. Analysis and Implications

Partial Least Squares (PLS), a structural equation modeling technique, was used for data analysis in this study. PLS allows the simultaneous assessment of a measurement model (relationships between questions and constructs) within the context of a theoretical structural model (relationships among constructs) [Chin, 1998].

The evaluation of the structural model was performed using measurements of the predictive power of the dependent latent variables,

〈Table 4〉 Discriminant Validity

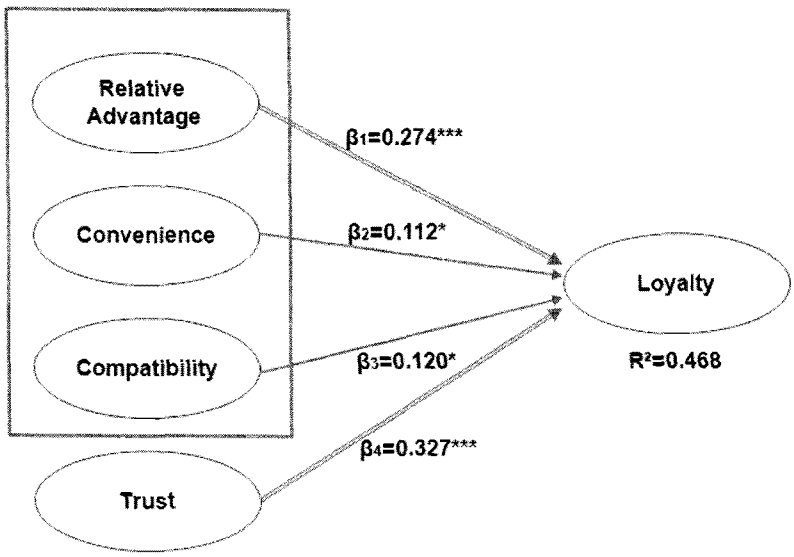
	RA	CV	CP	TR	BB	LB	CB	UB	EB	LY
Relative Advantage	0.833									
Convenience	0.569	0.707								
Compatibility	0.439	0.456	0.901							
Trust	0.623	0.593	0.355	0.809						
Benefit-Loss Barrier	0.258	0.337	0.269	0.384	0.823					
Learning Barrier	0.174	0.250	0.285	0.164	0.391	0.926				
Convenience Barrier	0.302	0.214	0.251	0.227	0.270	0.389	0.918			
Uncertainty Barrier	0.213	0.198	0.253	0.246	0.346	0.427	0.282	0.866		
Emotional Barrier	0.453	0.358	0.478	0.437	0.405	0.326	0.298	0.349	0.846	
Loyalty	0.594	0.507	0.408	0.604	0.323	0.263	0.360	0.261	0.567	0.804

Note) The principal diagonal elements correspond to the square root of the average variance extracted(AVE) of each construct; the other figures correspond to the correlations between the constructs.

such as the amount of variance in the construct explained by the model (R^2). Meanwhile, for the assessment of the contribution of the predictor variables to the explained variance of the endogenous variables, we used either path coefficients or standardized regression weights (β). Falk and Miller [1992] stated that, in order to be considered significant, these coefficients must explain at least 1.5 percent of the variance of a predetermined variable.

The significance of the path coefficients was tested by analyzing the t values of the parameters obtained using the bootstrap non-parametric re-sampling technique. Thus, 286 sub-samples were generated using a t-student distribution with two tails and 285 degrees of freedom (n-1, where n represents the number of sub-samples) to calculate the significance of the path coefficients (β). Values obtained are as follows : t(0.1; 285) = 1.645; t(0.05; 285) = 1.965; t(0.01; 285) = 2.576. Based on the significance of the structural paths so measured, we determined the supported/not supported status of the hypotheses for the positive factors impact on loyalty.

As illustrated in <Figure 2> and <Table 5>,



<Figure 2> Positive Factors Impact on Loyalty

<Table 5> Hypotheses Testing Results for Positive Factors

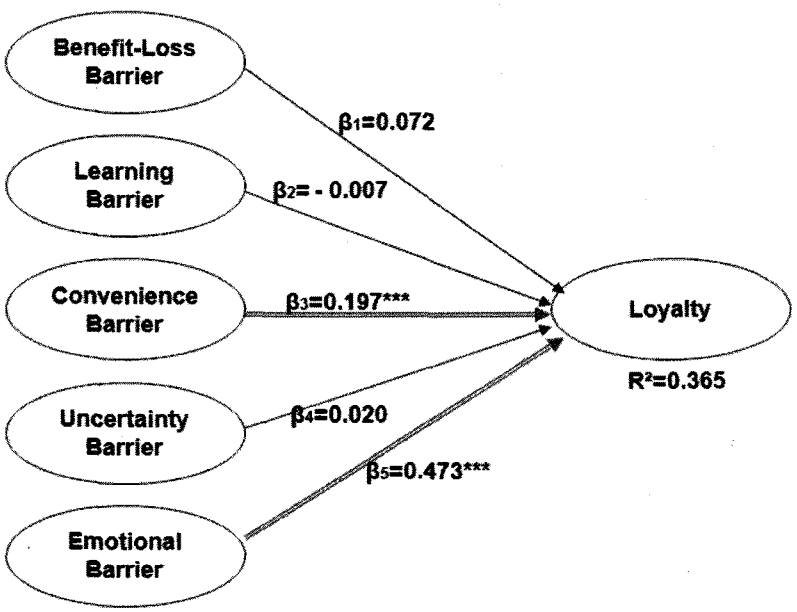
Hypothesis	Path coefficients standardized (β)	t Value (Bootstrap)	Result of Test
H 1.1	0.274	4.1730***	SUPPORTED
H 1.2	0.112	1.8158*	SUPPORTED
H 1.3	0.120	1.8608*	SUPPORTED
H 1.4	0.327	4.6891***	SUPPORTED

Note) When the t value obtained using the bootstrap technique exceeds the t-student value (0.01) = 2.576, 99% significance(***), t(0.05) = 1.965, 95% significance(**), t(0.1) = 1.645, 90% significance(*).

all of the first 4 hypotheses put forward was supported. We found that all of the perceived values considered in this study had a significant influence on e-customers' loyalty. Perceived values such as Relative advantage, Convenience, Compatibility, and Trust had a significant influence (t = 4.1730, 1.8158, 1.8608, 4.6891) on the customers' loyalty, and the value of R^2 was at 0.468, pointing to a rather high explanatory power of 46.8%.

In order for switching barriers validation, the significance of the path coefficients was tested by analyzing the t values of the parameters obtained using the bootstrap non-parametric resampling technique. Interestingly, 2 out of the 5 hypotheses put forward for switching barriers have been accepted. With respect to the explained variance of the endogenous variables (R^2) <Figure 3>, we found that the model had an adequate level of predictive power.

The statistical testing results, as illustrated in <Figure 3> and <Table 6>, revealed that



<Figure 3> Results of the Switching Barriers Impact on Loyalty

<Table 6> Hypotheses Testing Results for Switching Barriers

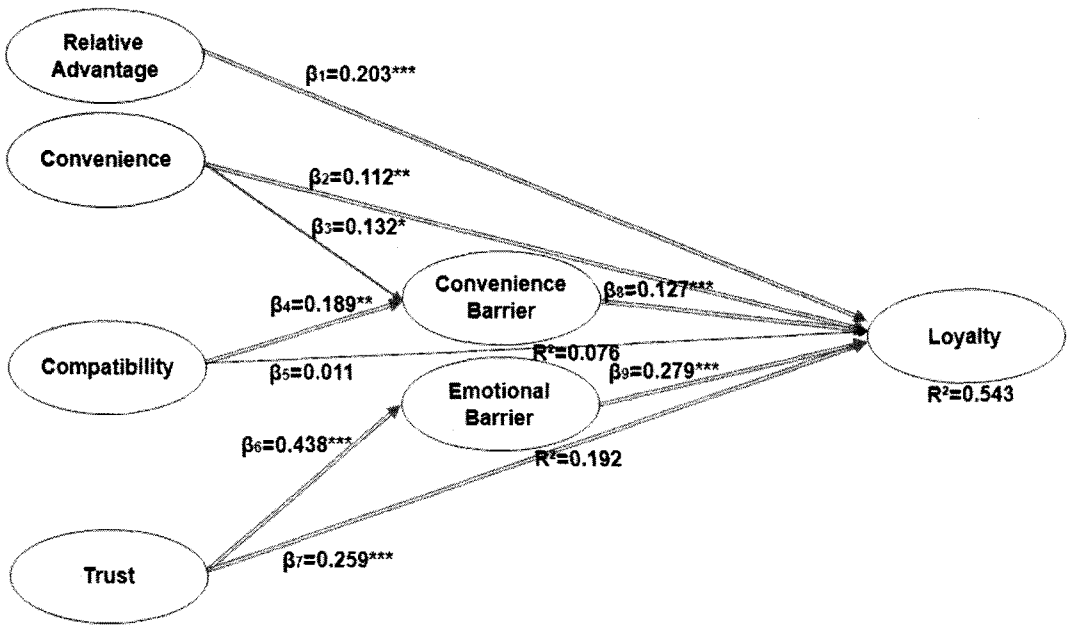
Hypothesis	Path coefficients standardized (β)	t Value (Bootstrap)	Result of Test
H 2.1	0.072	0.9778	NOT SUPPORTED
H 2.2	-0.007	0.1062	NOT SUPPORTED
H 2.3	0.197	2.9815***	SUPPORTED
H 2.4	0.020	0.2700	NOT SUPPORTED
H 2.5	0.473	7.7536***	SUPPORTED

Note) When the t value obtained using the bootstrap technique exceeds the t-student value (0.01) = 2.576, 99% significance(***), t(0.05) = 1.965, 95% significance(**), t(0.1) = 1.645, 90% significance(*).

only the two constructs of convenience and emotional barriers are valid switching barriers in e-commerce. The value of R^2 measured is 0.365. Just as in the offline environment, the emotional and convenience barriers proved to have a much stronger impact on e-loyalty than other types of barriers. These unexpected results could explain the difference between online and offline commerce.

Finally, we considered both the positive factors and switching barriers at the same time, including the mediating impact of switching barriers. As illustrated in <Figure 4>, the R2 has been increased as 0.543. As has been evidenced from e-commerce literature, most impact of e-loyalty could be attributable to positive factors such as relative advantage (β = 0.203) and convenience (β = 0.112). In the combined model, the direct impact of compatibility on loyalty is rather small, however, the indirect impact of affecting convenience barrier (β = 0.189), and that impacts on loyalty (β = 0.127). It is also encouraging result that the direct impact of trust on loyalty is strong (β = 0.259), and the indirect influence on loyalty through enhancing emotional barrier (β = 0.438) is stronger : the β of emotional barrier impact on loyalty is 0.279.

In sum, we found that while most positive factors influences switching barriers, the most significant effect was found from convenience and compatibility, both of them positively influence convenience barrier, which thereby influences loyalty. Also, the impact of compatibility on loyalty was explained by the indirect impact of convenience barrier enhancement and loyalty thereafter.



<Figure 4> Results of the Combined Model

5. Conclusion

The primary contribution of this paper is the empirical validation of switching barriers perceived by e-commerce customers. We demonstrated how certain switching barriers affect e-customer loyalty. We believe that this typology should provide a solid foundation for conceptualizing the nature of switching barriers and offer insights useful for developing customer retention strategies in e-commerce.

The results provide practical insights as for the implications of compatibility, convenience, and related switching barriers including emotional barrier. The importance of trust in e-commerce is also reiterated in this paper, including its impact on emotional barrier enhancement.

The limitation of this study is on the sample composition. Our samples mostly consist of young generations of 20s and 30s. This could weaken the generalizability of its findings, as shopping patterns are likely to vary depending on the ages of shoppers. On the base of this research, more profound switching barrier investigations in diverse online context including commerce, services, entertainment could be possible.

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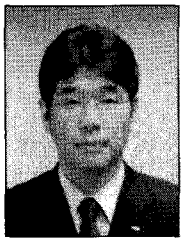

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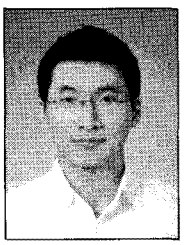

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