Antecedents and Behavioral Consequences of Customer Satisfaction on Internet Retail Store

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Abstract

Recently, the number of the Internet retail stores (IRSs) is increasing explosively with the growing popularity of the electronic commerce. So, behavioral study about affecting factors to customer satisfaction and resulting behaviors has become very important for researchers and practitioners. In this paper, we developed a research model for a deeper understanding of the linkage between antecedents and behavioral consequences of customer satisfaction on IRSs. An empirical study using a sample of 159 shoppers who had experiences of purchasing products from IRSs was conducted to test the model. The results support that four IRS performance factors that were developed from the perspectives of information technology, customer service, and retailing exert significant influence on customer satisfaction. Also, we find that customer satisfaction mediates the relationship between IRS performance and customers' behavioral intentions.

Keywords:

Internet retail store; Customer satisfaction; Behavioral intention; B2C EC; Electronic commerce

Introduction

An advancement of information technology and the resulting rapid emergence of electronic commerce (EC) influence all of the business constituents such as suppliers, manufacturers, customers and so on. Many firms adopt the Internet as marketing tools that advertise themselves into markets, reach their possible customers quickly, and improve relationship with customers [1]. EC enables customers to access the information related to their needs and to reduce their efforts, money, and time to explore the market, evaluate possible products, and purchase products.

There are large differences between a physical store and Internet retail store (IRS). A product search-agent in IRS replaces the sales clerk's friendly advice and service. The shelf on the store is substituted by the product directory on the screen. For the time being, most sites on the Internet are implemented with fancy graphics and well-constructed contents. But, it is seldom to derive the customers to visit the site with desired attitude and revisit them periodically [2]. Also, many retailing services disappeared from cyber markets since they could not retain their customers and prevent them from defecting to other retailing services. Whether or not they can convert their potential customers into real ones and retain them depends, to a very large extent, on the service performance IRS offers and the overall quality the customers perceive [3].

Some researchers suggested that one of the most critical aspects influencing the success of electronic commerce and online shopping will be the effectiveness of the interface interacting with the consumer [4], and how people interact with the information system [5]. Recently, some researchers suggested critical features for improving our understanding of the potential success of retailing on the Internet [see 5, 2, 6, 3, 4, 7]. However, there are few studies about the customers' behavior using empirical survey methodology in this area. Therefore, the formal empirical study about user behavior identifying causal factors that affect to customers behavioral intention and attitude is highly desired.

The purpose of this paper is to investigate empirically the antecedents and behavioral consequences of customer satisfaction in IRSs. We intend to answer the

questions of *what factors are salient for increasing customer satisfaction in IRS and how customer satisfaction influences customers' behavioral intentions such as loyalty or repurchase intention.* At first, based on a review of literature, we identify factors that may influence the customers' reactions to online shopping. We then study exploratory the relationships between IRS performance, customer satisfaction, and customers behavioral intentions by examining data collected from a group of customers who had experiences of purchasing goods from IRSs.

This paper is organized as follows. It begins with the literature review about electronic commerce and relevant earlier studies. Next, the research methodology is outlined and the research model and some hypotheses are provided. Verification of our data analysis is provided in the following section. Finally, this study is concluded with research findings and limitations as well as implications.

Literature Review

EC and Retailing on the Internet

Electronic commerce (EC) is an emerging concept that describes the process of buying and selling or exchanging of products, services, and information via computer network including the Internet [8]. Kalakota and Whinston [9] define EC from four perspectives: communications, business process, service, and online perspective. Shaw et al. [4] proposed that research questions about consumer behavior would be addressed by the integration of technological, business, and behavioral perspectives. It implies that EC has multifaceted characteristics and the interdisciplinary nature.

Up to date, business-to-customer (B2C) EC is mostly active whose typical example is the retailing on the Internet, which is called as the electronic mall [8], cyber shopping store [3], Internet retail store [10]. We considered the Internet retail store (IRS) as a virtual on-line store that provides products and service by deploying the Web-based information system.

Recently, there are some research efforts to identify key aspects of online shopping. Javenpaa and Todd [6] surveyed customers' reactions to Web-based stores using a sample of 220 shoppers. They identify affecting factors to customers' behavior and suggest ways to improve retail Web sites. Keeney [7] interviewed over 100 individuals about pros and cons of using Internet commerce that they experienced or envisioned, and categorized the comments into 25 means and fundamental objectives. Lohse and Spiller [5] suggest some attributes that could be critical factors on success of IRS such as merchandise, service, promotion, convenience, checkout, and store navigation. Especially, Ho and Wu [3] build a research model of customer satisfaction for IRS and examine the relationships between customer satisfaction and the antecedents of the cyber shopping store. However, they did not propose that which factor influences customers' positive attitude toward IRS such as loyalty and repurchase intentions.

This paper will identify the determinants of customer satisfaction of IRSs, and develop a deeper understanding of the linkage between IRS performance, customer satisfaction, and customers' behavioral intentions.

Antecedents of Customer Satisfaction

Customer satisfaction is important to the firm because it is generally assumed to be a significant determinant of repeat sales, positive word-of-mouth, and customer loyalty [11]. Hence, many researchers have focused on understandings of the determinants of customer satisfaction. And it is well known that perceived performance significantly influences on customer satisfaction [12]. However, most of previous researches were based on traditional business system. One exception is the efforts of Ho and Wu [3], where antecedents found are logistical support, technological characteristics, information characteristics, homepage presentation, and product characteristics. They found that homepage presentation, a substituted factor for the personal contact of sales people and the catalogues in the traditional marketing, is a new and important aspect for the Internet shopping.

In online shopping, customers perceive the performance of the IRS during the whole transaction phase from the need identification to the post-purchase behavior. And the transaction process has both on-line and off-line characteristics. When we assess the performance of the IRS, we should consider various dimensions that come from related disciplines such as information technology, customer service, and retailing.

DeLone and McLean [13] reported that the quality of system and information affected use of Information system and user satisfaction. Barti et al. [14] and Srinivasan [15] urged that from the user perspective, the success of information system depends on the quality of service provided by the information system. IRS supports customers' purchasing process by linking IRS with their existing and potential customers through Web-based information system. The IT characteristics such as system reliability and information accuracy can influence customer satisfaction when customers interact with IRS.

Customer service, which is an antecedent for the customer satisfaction [16], may be the best method for many firms to gain competitive advantage [17]. LaLonde and Zinszer [18] defined customer service as those activities that occur at the interface between the customer and the firm, which enhance or facilitate the sale and use of the firm's products or service. Some researchers empirically derived dimensions of customer service including responsiveness, assurance, reliability, tangibility, and empathy [19]. IRS has characteristics of services such as intangible transactions, heterogeneous

environments, and inseparable production and consumption of information needed in transactions. Since customer service is frequently identified as a salient dimension in determining retail channel, we have to consider service characteristics when investigating the performance of IRS.

The evaluation criteria of the traditional physical retail stores are positive image and convenient location [20], promotion policy [20; 21], service and convenience [21; 22], and product assortment and price discount [23; 21]. Customers not only have to trust that the quality of the goods or services will be satisfactory but also have to trust that they will even receive them, because the parties to a transaction are not in the same place [24]. Customers often evaluate the experience about the IRS and products or services that they purchase, and show accompanying emotional reactions such as satisfaction or dissatisfaction.

Customer Satisfaction and Customers' Behavioral Intentions

Zeithaml, Berry, and Parasuraman [25] emphasize the importance of measuring future behavioral intentions of customers to access their potential to remain with or leave the organization. If a customer's behavioral intentions are favorable (unfavorable), then his or her relationship with the company is likely to be strengthened (weakened). And there is recent evidence that profits may be enhanced when strategies focus on retaining current customers [see 20]. So customers' behavioral intentions could affect the financial gain or losses of firms.

The concept of customer satisfaction and its impact on behavioral response was one of the key issues in marketing and practice. There was the positive relationship between the retail store satisfaction and patronage frequency [23]. Anderson and Sullivan [26] find that stated repurchase intention is strongly related to stated satisfaction. Woodside, Frey and Daly [27] uncover a significant association between overall patient satisfaction and intent to choose the hospital again. According to Singh [28], dissatisfaction leads to customers' complaining behavior. Coyne [29] says that there appear to be thresholds of satisfaction for affecting customer behavior. Customer satisfaction can be considered to influenced purchase intentions and behavior [30]. Cronin and Taylor [31], treating service quality and customer satisfaction as distinct constructs, find that service quality affects customer satisfaction, but do not find a significant effect of service quality on purchase intention. However, they find that customer satisfaction affects purchase intention. Taylor and Baker [32] obtain significant effects for service quality,

satisfaction and an interaction term on purchase intention. Other researchers [33,25] do not distinguish between service quality and consumer satisfaction, and treat these as on and the same. Boulding et al. [33] find that there is a significant relationship between service quality and a two-item measure of repurchase intention and willingness to recommend. Zeithaml et al. [25] find that service quality affects behavioral intention measures.

Research Framework

This paper is intended to explore the antecedents of customer satisfaction and to examine the relationships between customer satisfaction of IRS, its antecedents and customers' behavioral intentions. Various IRS performance dimensions influence customers' emotional states (i.e., customer satisfaction), which in turn lead to favorable and/or unfavorable behavioral intentions (Figure 1). Thus, the hypotheses are as follows:

H1: There will be positive relationship between the IRS performance factors and the customer satisfaction.

H2: The customer satisfaction-behavioral intentions relationship is positive (negative) for favorable (unfavorable) behavioral intentions.

H3: The customer satisfaction will mediate the relationship of the IRS performance factors and behavioral intentions.

Research Design

Sample and Procedure

In this study, a comprehensive survey was distributed just only to the person who had the experience of purchasing goods from IRS and had agreed to participate in the study. In directions of questionnaire, respondents were asked to inform the name of one IRS from which they had purchased goods. And they were asked to fill out following questions based on their experiences with that particular IRS. A total of 159 completed questionnaires (134 from male and 25 from female) from 230 respondents were obtained. The response rate was 69 percent. The average age is about twenty-nine, and 141 respondents were above Bachelor's degree. On average, they are using Internet about 16 hours per week.

In general, men are still the dominant users of the Internet, and most users are still highly educated. Even in the United States, 80.9 percent of Internet surfers have at least some college education, and 50.1 percent have obtained at least a bachelor's degree, in 1998 [see 8].
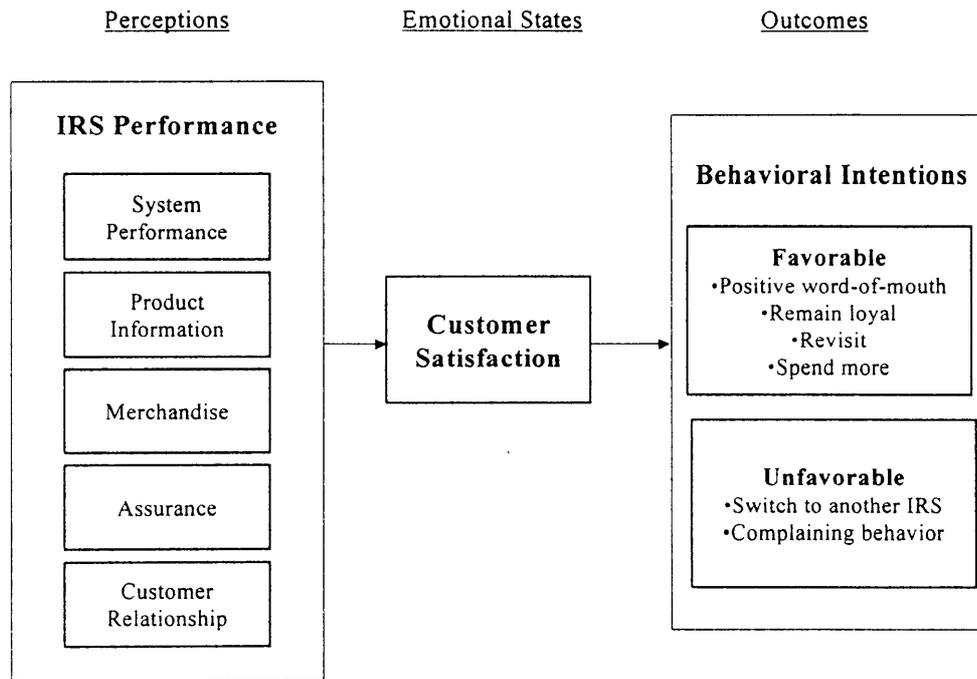
Perceptions   Emotional States   Outcomes

IRS Performance

- System Performance
- Product Information
- Merchandise
- Assurance
- Customer Relationship

→ **Customer Satisfaction** →

Behavioral Intentions

Favorable
- Positive word-of-mouth
- Remain loyal
- Revisit
- Spend more

Unfavorable
- Switch to another IRS
- Complaining behavior

Figure 1. A Research Framework for the Antecedents and Customers' Behavioral Consequences

of Customer Satisfaction of IRS

Operational Measures

Through the literature review, a 17-item instrument as follows was developed, using a seven point Likert-type scale ranging from (1) "very low" to (7) "very high". The preliminary set of scale items was pretested with 20 individuals who had purchased goods from IRS. They were asked to fill out the questionnaire, point out items that were not applicable or ambiguous, and indicate any other difficulties with the questionnaire.

1. *System performance*: There were three items in this study. These items included: the degree to which (P1) the IRS system supports customers to conveniently access to where they want, (P2) the IRS system operates reliable, (P3) the IRS system responses quickly.

2. *Product information*: Three items of product information were included in this study: the degree to which (P4) product information is offered understandably by effectively using text, graphic, sound, (P5) accurate product information is offered, (P6) product information essential to the process of comparing various alternatives is offered.

3. *Merchandise*: It was measured by three-item scale. This scale included: the degree to which (P7) products are supplied at low price, (P8) products supplied are of good quality, (P9) products supplied are diverse.

4. *Assurance*: Five items of assurance were included in this study: the degree to which (P10) the credit of the IRS is guaranteed, (P11) security in purchasing process is guaranteed, (P12) delivery of ordered products is guaranteed, (P13) customer supports after purchasing is guaranteed, (P14) problem solving of purchasing process is guaranteed.

5. *Customer relationship*: This measure included: the degree to which (P15) customized service is offered, (P16) the IRS is willing to understand the needs of each customer and pan attention, (P17) the communication among customers and employees is supported.

To measure *customers' behavioral intentions*, 12 items originally reported by Zeithaml et al. [25] were slightly modified to apply to the IRS setting and used: (I1) say positive things about the IRS to other people, (I2) recommend the IRS to someone who seek advice, (I3) encourage friends and relatives to do business with the IRS, (I4) consider the IRS your first choice to use IRS, (I5) visit more frequently to the IRS later, (I6) buy more products in the IRS, (I7) take some of your business to a competitor that offers better prices, (I8) continue to do business with the IRS if its prices increase somewhat, (I9) pay a higher price than competitors charge for the benefits you currently receive from the IRS, (I10) switch to a competitor if you experience a problem with the IRS service, (I11) complain to other customers if you experience a problem with the IRS service, and (I12) complain to external agencies if you experience a problem with the IRS service. Subjects responded to these items on a 7-point Likert-type scale, with representing (1) "not at all likely" and (7) "extremely likely."

For the evaluation of *customer satisfaction*, subjects

were asked to respond on a single-item rating scale with anchors at (1) "not at all satisfied" and (7) "very satisfied". Single item questions were used to ascertain respondents' gender, age, educational level and hours spent on the Internet per week.

Data Analysis and Results

Factor Analysis

Table 1 and 2 report the results of the factor analyses of IRS performance and customers' behavioral intentions, respectively. Using the sample of 159 responses, the data were examined using principle component analysis as the extraction method and varimax as a technique of rotation. In Table 1, we find that four factors with eigen values greater than one emerged. Because item P4 is highly loaded on two dimensions of factor 2 and 4 (.46 and .50 respectively), second factor analysis was performed after removing item P4. The result exhibited consistent pattern of factor loadings, and it was interpretable. So, we deleted item P4 from all subsequent analyses. The items of product information

and merchandise were loaded on the same factor. That factor was interpreted as product presentation. Other factors were interpreted as assurance, customer relationship, and system performance. The four factors accounted for 70% of the common variance in the data. The reliability (alpha) of each factor was: assurance = .88; product presentation = .83; customer relationship = .86; and system performance = .82. All subsequent analyses were performed with this result.

Table 2 depicts the loadings of 12-items of the customers' behavioral intentions items on each factor. Although the factor structure of the behavioral-intentions battery differs somewhat from the previous study of Zeithaml et al. [25], the loadings show the dichotomy in behavioral intentions of favorable and unfavorable categories. The first dimension to emerge can be termed loyalty. The next factor was interpreted as tolerance intention and the last factor as complaining behavior intention. These factors account for 70% of the common variance. The reliability (alpha) of each factor was: loyalty = .93; tolerance intention = .72; and complaining behavior intention = .63.

Table 1 - First Factor Analysis of IRS Performance Items

Item	Factor loadings			
	Factor 1	Factor 2	Factor 3	Factor 4
P10	**.80**	.16	.03	.27
P12	**.78**	.22	.17	.20
P13	**.69**	.29	.38	.14
P11	**.63**	.12	.25	.44
P14	**.62**	.24	.49	.14
P8	.32	**.79**	.12	.08
P5	.23	**.72**	.23	.23
P9	.39	**.67**	.17	.04
P6	-.01	**.57**	.36	.36
P7	.05	**.57**	.22	.34
P15	.15	.22	**.81**	.20
P16	.18	.28	**.80**	.16
P17	.26	.17	**.77**	.19
P3	.20	.22	.19	**.78**
P1	.30	.13	.18	**.70**
P2	.49	.23	.12	**.66**
P4	.12	.46	.20	.50
Eigenvalue	8.00	1.42	1.17	1.03
Cumulative Percentage of Variance Explained	47%	55%	62%	68%

Note. N = 159

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Table 2 - Factor Analysis of Customers' Behavioral Intentions Items

Items	Factor loadings		
	Factor 1	Factor 2	Factor 3
I3	.90	.01	.00
I2	.87	.02	-.11
I1	.86	-.06	-.06
I6	.84	.13	.17
I5	.82	.15	.19
I4	.77	.19	-.07
I7(-)	-.18	.78	-.07
I8	.44	.71	-.09
I9	.35	.71	-.01
I10(-)	-.04	.61	-.43
I12	-.06	.01	.87
I11	.10	-.35	.75
Eigenvalue	4.84	2.45	1.16
Cumulative Percentage of Variance Explained	40%	61%	70%

Note. N = 159. Items with a "-" were reverse scored.

Results

Hypothesis 1 and 2 were tested with Pearson correlations; the results are reported in Table 3 and 4 respectively. Hypothesis 1 was supported. There was a positive correlation between system performance and the customer satisfaction (r = .526, p < .001). Product presentation had positive correlations with the customer satisfaction (r = .488, p < .001). Assurance correlated positively with the customer satisfaction (r = .538, p < .001). There was also positive relationship between customer relationship and the customer satisfaction (r =.270, p < .01). Hypothesis 2 was partially supported, because the customer satisfaction had positive correlation with Loyalty (r = .621, p < .001) and

Tolerance Intention (r = .232, p < .01) but had insignificant correlation with Complaining Behavior Intention (r = -.016, p = .845).

Hypothesis 3 was tested with the three-step mediated regression method recommended by Baron and Kenny [34]. Using the method, the mediators of the customer satisfaction was regressed on independent variable; next, dependent variable was regressed on independent variable; and finally, dependent variable was simultaneously regressed on independent variable and the mediator. The tests with the dependent variable of complaining behavior intention were not performed, because the customer satisfaction and complaining behavior intention did not have significant correlation.

Table 3 - Correlation between Four Antecedents and Customer Satisfaction

	Customer Satisfaction
System Performance	.526***
Product Presentation	.488***
Assurance	.538***
Customer Relationship	.270**

*p < .05.   **p < .01.   ***p < .001.*

Table 4 - Correlation between Behavioral Intention and Customer Satisfaction

	Customer Satisfaction
Loyalty	.621***
Tolerance Intention	.232**
Complaining Behavior Intention	-.016

*p < .05.   **p < .01.   ***p < .001.*

The results displayed in Table 5 support mediated relationships for system performance. With system performance as the independent variable and loyalty as the dependent variable, the first-stage regression produced significant betas for the customer satisfaction (β = .53, p < .001). In the second stage, system performance had a significant beta when loyalty was regressed on it (β = .48, p < .001). In the third stage, the beta of the system performance remained significant, but the weight dropped substantially (β = .21, p < .01). The results suggest partial mediation because the independent variable's relationship to the dependent variable of loyalty decreased in magnitude but remained significant after the mediator was added to the regression equation. For tolerance intention as dependent variable, the customer satisfaction met Baron and Kenny's criteria for "perfect mediation." That is, the effect of system performance was completely removed when the customer satisfaction was controlled.

With product presentation as the independent variable, the beta of product presentation was not dropped substantially at the third stage. So, there was not any mediating effect of the customer satisfaction.

With assurance as the independent variable and loyalty as dependent variable, the weight of assurance decreased in magnitude but remained significant after the mediator was added to the regression equation (see Table 6). The result suggests partial mediation. But with tolerance intention as dependent variable, the beta of assurance was not significant at the second stage.

With customer relationship as independent variable and loyalty as dependent variable, the effect of customer relationship did not decrease substantially at the third stage. But, with tolerance intention as dependent variable, the results suggest perfect mediation (see Table 7).

Table 5. Summary of Three-Step Mediated Regression Analysis (System Performance)

Step	Dependent variable	Independent variable	β	Adjusted R^2
1	Satisfaction	System performance	.53***	.27***
2	Loyalty	System performance	.48***	.23***
3	Loyalty	System performance	.21**	
		Satisfaction	.51***	.41***
2	Tolerance	System performance	.16*	.02*
3	Tolerance	System performance	.05	
		Satisfaction	.21*	.04*

*p < .05.   **p < .01.   ***p < .001.

Table 6. Summary of Three-Step Mediated Regression Analysis (Assurance)

Step	Dependent variable	Independent variable	β	Adjusted R^2
1	Satisfaction	Assurance	.54***	.29***
2	Loyalty	Assurance	.45***	.19***
3	Loyalty	Assurance	.16*	
		Satisfaction	.54***	.40***

*p < .05.   **p < .01.   ***p < .001.

Table 7. Summary of Three-Step Mediated Regression Analysis (Customer Relationship)

Step	Dependent variable	Independent variable	β	Adjusted R^2
1	Satisfaction	Customer relationship	.27**	.07**
2	Tolerance	Customer relationship	.21**	.04**
3	Tolerance	Customer relationship	.16	
		Satisfaction	.19*	.07**

*p < .05. **p < .01. ***p < .001.

Discussion and Conclusions

Previous studies on customer satisfaction and customers' behavioral intentions are on the case of traditional retail store. This study contributes to B2C EC area by building a research model of customer satisfaction, its antecedents, and customers' behavioral intentions in IRS. Further, a survey method was used to examine the model and find significant relationships among the variables. So, the results of this paper can provide a promising platform for future research on the relationship of IRS performance and customers' behavioral intentions.

The first objective of this study was to explore antecedents of customer satisfaction of IRS. Through factor analysis, four factors of IRS performance (system performance, product presentation, assurance, and customer relationship) were induced. Respondents considered that items concerning product information and items concerning merchandise are of same dimension. As proposed in hypothesis 1, the exploratory correlation analysis revealed that IRS performance factors increase customer satisfaction. These results imply that it is very important to encourage trust and confidence by guaranteeing safe transactions. IRSs can be seen as a kind of web-based information system, and customers are the end users of that system. Therefore, ongoing improvement of web based system and maintenance for high system performance is essential to customer satisfaction. In addition, the information offered by the system of IRSs (product presentation) is of importance. Not only products itself but also the way its information presented should be considered simultaneously. Relative to others, the dimension of customer relationship has weak influence on customer satisfaction. A reason might be that customers think this aspect is not of the core service of IRSs that sell goods to customer. However, IRSs are trying to build virtual community by offering various services and strengthening customer relationship. So, it is needed to add some items reflecting such efforts as investment on e-CRM systems into customer relationship dimension.

The second objective was to investigate the relationship between customer satisfaction of IRS and customers' behavioral intentions. The items of customers'

behavioral intentions grouped into three factors of loyalty, tolerance intention, and complaining behavior intention. As hypothesized, customer satisfaction has positive relationship with favorable intention of loyalty and tolerance intention. Therefore, as customer satisfaction with a IRS becomes high, so does the likelihood of positive word of mouth, repurchasing, revisiting, and the intention to accept additional cost in transaction with it. One interesting finding is that there is not significant relationship between customer satisfaction and complaining behavior intention. Previous research also shows that in some industries overall service quality has weak or insignificant relationship with such behavioral intentions [see 25]. In this study, the items of complaining behavior intention are of customers' willingness to complain to others in case of service problem. When customers have some problem in a transaction with IRS, prior satisfaction with it is not helpful for lowering the likelihood of customers' response of complaining behavior to their problem experiences. So, considering that customers' problem experience could be a fatal blow, IRSs should make every effort for customers not to experience any problem in each of transaction.

The last objective of this paper was to explore mediating effects of customer satisfaction of IRS. The results show that customer satisfaction occupies some mediating role between antecedents and customers' behavioral intentions. It means that IRS efforts for performances induce customers' behavioral intentions through emotional state or overall impressions about IRS. Therefore, as is in other industries, customer satisfaction is one of the central concepts for business success in IRS industry. Nowadays, IRSs are investing various resources to acquire competitive advantages. However, in case that IRSs' efforts for assurance such as purchasing expensive firewalls do not lead to customers' emotional state (i.e., customer satisfaction), it will be difficult for IRSs to improve loyalty and make financial gains. Therefore, IRSs should actively inform their efforts to customers by diverse means so that customers could have positive impression about the IRS.

As with all research, this research has limitations. First, the data of this study were self-reported and consequently may have been prone to various response

biases. With customer panels and customer database of IRS, we are able to obtain and use real repurchasing or revisiting behavior data, not just behavioral intentions. So, a longitudinal study is needed. Second, majorities in our sample were male and highly educated. Although women shop less than men on the Web today, they are quickly increasing their Web purchasing. And the average education level of Web user is declining. So, more strategic sampling for generalizing is needed.

Acknowledgement

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