Confirmation of Expectations and Satisfaction with the Internet Shopping: The Role of Internet Self-efficacy

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Abstract

Customers' intentions of reusing e-commerce websites for shopping has a major consequence for the website's profitability; therefore, understanding the factors that influence a Web customer's repurchase intentions is of great importance to e-commerce. This research represented a careful and systemic effort to incorporate factors from various distinct theories (ECT, SCT, abd TAM), examined the hypotheses within the context of Internet shopping repurchase intentions. Empirical data for hypotheses testing were collected from Taiwan, yielding 342 valid samples. The results suggest that consumer's repurchase intention is determined by satisfaction and perceived usefulness. Users' satisfaction is influenced by confirmation and perceived usefulness. Perceived usefulness, in turn, is influenced by confirmation, while confirmation is affected by Internet self-efficacy. However, Internet self-efficacy has found to have no significant impact on perceived usefulness and repurchase intention.

Keywords: Expectation-confirmation theory, Social cognitive theory, Technology acceptance model, Internet shopping, Repurchase intention

1. Introduction

In the dynamic and turbulent e-commerce environment, companies must understand how to satisfy customers in order to obtain growth and market share. In recent years, information system (IS) and information technology (IT) have led to serious concerns regarding the usage and acceptance of IT (Bhattacherjee 2001a; Kettinger, Park, & Smith, 2009; Straub, Keil, & Brenner, 1997). Although the adoption of IT (Acceptance) will yield immediate effects upon its development, it is critical to facilitate the continuance, not only initial adoption, for the sustainability and success of IT (Bhattacherjee 2001a, Bhattacherjee, Perols, & Sanford, 2008). Therefore, academics and practitioners must give highest attentions to confirm the continuance intention for IT/IS.

Currently, numerous articles are engaged in IT-related studies concerning 'initial adoption' and 'continuance' according to the experience of customers (Hsu & Chiu, 2004b). Initial adoption, also referred to as "acceptance", is a key step for making IS successful. However, the availability and final success of IS are dependent upon continuance. From the viewpoint of marketing, acquiring new customers requires higher costs than keeping current customers (Parthasarathy & Bhattacherjee, 1998; Reichheld & Schefter, 2000), showing the significance of continuance or loyalty behavior. Therefore, in order to win the support of customers, exploring the issue of how to stimulate the customers for continuous on-line shopping is critical too much of the e-commerce businesses.

Therefore, the purpose of this present research is aimed at determining relevant, complete explanations of Internet shopping repurchase intentions through the consumers' cognition and self-efficacy of the Internet. We cited self-efficacy construct in the SCT as "Internet self-efficacy" and integrated it with Bhattacherjee's (2001a) post-acceptance model of IS continuance to explore the cause-and-effect relationship between an individual's perceived beliefs and Internet shopping repurchase intentions.

2. Theoretical Background

2.1 Expectation-confirmation theory (ECT)

Expectation-Confirmation Theory (ECT), which was originated by Oliver (1980), involves a customer behavior model commonly used to define and predict satisfaction and repurchase intention. According to Oliver's (1980) arguments, repurchase intentions greatly depend on prior satisfaction, while satisfaction is obtained from disconfirmation and expectation for the products or services- of which 'disconfirmation' has the strongest direct influence upon satisfaction. Disconfirmation includes: 1) confirmation: actual performance meets the expected standard; 2) negative disconfirmation: actual performance fails to meet the expected standard; and 3) positive disconfirmation: actual performance exceeds the expected standard (Chiu, Hsu, Sun, Lin, & Sun, 2005; Churchill & Surprenant, 1982; Hsu, Chiu, & Ju, 2004). Churchill and Surprenant (1982) added perceived performance into ECT as an antecedent of satisfaction, and further established that both expectations and perceived performance have an influence on disconfirmation.

Drawing on ECT, Bhattacherjee's (2001a) pointed out that IS customers' continuance decision-making process shows some features that similar to repurchase intention in marketing field. Hence, it is possible to modify ECT and combine the evidence of IS applications; thereby developing ECT for the continuance of IS. Consequently, our research is able to propose more reasonable concepts and yield a higher explanatory power for the customers' IS continuance intention. The research model we proposed including five aspects, namely Internet self-efficacy, confirmation, perceived usefulness, satisfaction, and repurchase intention.

2.2 Social cognitive theory (SCT)

Based on a complete theoretical framework, social cognitive theory (SCT) as a theoretical basis is often applied to performance evaluation (Johnson & Marakas, 2000). According to SCT, environment, cognition and human behavior are three interactive factors operating as a triadic reciprocal causation (Bandura, 1986; Wood & Bandura, 1989).

After initial usage of services offered by the service provider, the behavior intention of Internet users will generate a self-regulation mechanism whenever these users intend to repeat the same activities. The same instrument will be used to achieve the user's goals via outcome expectations and self-efficacy. Hsu et al. (2004) and Lu and Hsiao (2007) found that outcome expectations and self-efficacy would affect ongoing behavior; these factors will also be affected by previous behavior. In addition to indicating availability of SCT for WWW continuance, these two elements are indispensable in exploring the behavior of Internet shopping customers.

3. Research model and hypotheses

3.1 Internet self-efficacy

Research has shown that perceived behavioral control is very similar to the concept of self-efficacy (Ajzen, 1988), which is a decisive factor affecting behavior selection, efforts, continuance, and performance level under different scenarios (Bandura 1982, 1997). One purpose of this study is to explore the relationship between continuance intention and self-efficacy in the Internet shopping context. Thus, the concept of general self-efficacy is replaced by Internet self-efficacy (ISE) to most accurately match our research purpose.

Furthermore, the customers will be more confident if they consider themselves as having stronger capability of performing a specific online task. Therefore, perceived performance will exceed expectations in actual applications. For example, Oliver and Shapiro (1993) pointed out that, a higher level of self-efficacy will

stimulate oneself to make more efforts to achieve expected results. As demonstrated in many studies, significant correlations exist among computer self-efficacy, outcome expectations and perceived performance (Compeau & Higgins, 1995a; Compeau, Higgins, & Huff, 1999; Johnson & Marakas, 2000). In addition, the outcome expectations are classified into playfulness, sociality, and informativity in Eastin and LaRose's (2000) study. Their empirical results show that Internet self-efficacy has a significant influence upon outcome expectations. In this present research, outcome expectations are incorporated into the construct of perceived usefulness, which is defined as 'an individual's subjective evaluation of a new IT under a specific working scenario.' Additionally, based on the previous study, we define ISE as: 'individual judgment of self-efficacy of using Web-based application software or services in a general Internet environment.'

H1. Internet self-efficacy has a positive impact on perceived usefulness.

H2. Internet self-efficacy has a positive impact on confirmation.

Prior studies have shown the significant correlation between self-efficacy and adoption of computer technology (Burkhart & Brass, 1990; Compeau & Higgins, 1995b; Compeau and Higgins, 1999; Hill, Smith, & Mann, 1987; Igbaria & Iivari, 1995; Oliver & Shapiro, 1993). After that, lots of articles are thus expanded to the adoption of Internet information systems. For example, Eastin and LaRose (2002) analyzed four e-commerce activities, i.e. network shopping, electronic banking, network investment, and on-line services, showing that Internet self-efficacy has a significant influence upon them. Eastin and LaRose (2000) also suggested that Internet self-efficacy is affected by previous Internet experience, and in turn has a significant influence upon Internet usage. In sum, if an individual has a higher positive confirmation of his/her Internet-related skills, this person will show a higher positive retention for Internet IT/IS. In this paper, we define repurchase intention as "repeat intention of Internet shoppers for the buying of products or services delivered by a Web-based shopping mall.' Thus, the following hypothesis is then proposed:

H3. Internet self-efficacy has a positive impact on repurchase intention.

3.2 Confirmation

According to ECT, satisfaction is affected by disconfirmation and expectations, with disconfirmation indicating the gap between expectations and perceived performance. Considering Bhattacherjee's (2001a) research, this paper utilizes confirmation as a variable which includes confirmation and positive disconfirmation.

Swan and Trawick (1981) studied the concepts of disconfirmed expectations and satisfaction in retail businesses. The results show that a higher level of positive disconfirmation indicates higher satisfaction. Spreng, MacKenzie, and Olshavsky (1996) developed an updated model which is the complement of the ECT model indicating that disconfirmation has a significant influence upon satisfaction of product attributes and information, thereby influencing overall satisfaction. Furthermore, Bhattacherjee (2001a, 2001b) concludes that confirmation has a positive influence on satisfaction and perceived usefulness.

H4. Confirmation has a positive impact on satisfaction.

H5. Confirmation has a positive impact on perceived usefulness.

3.3 Perceived Usefulness

Perceived usefulness refers to the customer's cognition that the usage of IS will improve work performance (Davis et al., 1989). In TAM, perceived usefulness has an immediate effect upon behavior intentions for IS, helping to bring about actual behavior. Compared to perceived ease of use, perceived usefulness has shown consistent and remarkable results during an empirical, two-phase IS study (i.e. initial adoption and continuance) (Bhattacherjee, 2001a; Davis, Bagozzi, & Warshaw, 1989; Karahanna, Straub, & Cheryany, 1999); thus, only perceived usefulness is applied in this study.

Previous studies have examined the importance of perceived usefulness toward retention behavior. In a study of 360 customers, Chau (2001) found out that the usefulness of a software package or web-based application system has a significant influence upon behavioral intentions. Also, after investigating 122 customers of a network bank, Bhattacherjee (2001a) pointed out that perceived usefulness has a significant influence upon satisfaction and IS continuance intention. Devaraj, Fan, & Kohli, (2002) demonstrated that perceived usefulness has a notable impact upon satisfaction in the e-commerce channel. The research findings of Koufaris (2002) and Chiu, Chang, Cheng, and Fang (2009) also indicate that perceived usefulness has a great influence upon repurchase intention of on-line customers.

H6. Perceived usefulness has a positive impact on satisfaction.

H7. Perceived usefulness has a positive impact on repurchase intention.

3.4 Satisfaction

Satisfaction indicates the sense of satisfaction or disappointment obtained by comparing the performance of a product or service to its expected level. In the context of business, satisfaction is a decisive factor affecting repurchase intentions of the customers; thus, there is a significant correlation between satisfaction and intention (Swan & Trawick 1981). According to the study of Bhattacherjee (2001a), continuance intention is mainly affected by satisfaction of previous experience. In an empirical study of 1000 network banking IS customers, satisfaction was found to be a determinant of IS continuance intention. Numerous research studies on e-commerce have also demonstrated that satisfaction has a positive effect upon repurchase intentions of trading partners (Devaraj, et al., 2002; Patterson, Johnson, & Spreng, 1997).

In this paper, satisfaction is defined as online shoppers' 'sensational cognition and emotional response to the products or serviced delivered by a Web-based information system.' Continuance intention is defined as 'repurchase intention of Internet shoppers for the products or services delivered by a Web-based information system.' Thus, the following hypothesis is proposed:

H8. Satisfaction will positively influence repurchase intention.

4. Research Methodology

4.1 Measurement development

The scales of ISE in our study are adapted from the study of Hsu et al. (2004a, 2004b). In the past, some scholars have adapted and modified the ISE scales with different number of items. These items include: browsing, information exchange, data inquiry, searching and file transfer and access to the Internet, network surfing or navigation, encoding and decoding, and system operation, etc. (Eastin & LaRose, 2000; Joo, bong, & Choi, 2000; Torkzadeh & Van Dyke, 2002). However, Torkzadeh and Van Dyke (2002) noted that some shortcomings exist among these items. Fist, some viewpoints on the World Wide Web have not been presented in the evaluation items (e.g. downloading software and browsing news groups). Second, some items have not clarified special cases only for the Internet (e.g. 'faxing' refers to network faxing). Third, some elements on the Internet operation exceed the range of evaluation (e.g. the capability of encoding or decoding e-mail).

Adapted from the Bhattacherjee (2001a), the scales of confirmation are classified into three aspects: objective, inferred, and perceived (Yi, 1990). Items for measuring perceived usefulness originated from four items of Davis et al.'s (1989) study. The former three items are selected as performance, productivity and effectiveness of the Internet shopping mall for making purchases; the fourth item targets overall usefulness of the Internet mall for shopping.

Items for measuring satisfaction are adapted from the scales of Oliver (1980), Spreng, et al. (1996) and Bhattacherjee (2001b), which are originated from ECT. We did not use the prior satisfaction instruments in IS research for two reasons: either the scales were too long to conduct, or opinions of the system itself were not properly attained (Bhattacherjee's, 2001a, 2001b).

The items of repurchase intention are taken from Bhattacherjee's (2001a, 2001b) scales in which two of these items are adapted from behavior intention scale of IS developed by Mathieson (1991), with the third item added for improved reliability. Two former items are used to evaluate continuance intention of respondents for online shopping, in contrast with traditional channels. The third item is used to assess overall discontinuance intention.

Wherever possible, this study adopted the well-established valid instruments with minor changes in wording to fit the Internet shopping retention context. Each item was measured on a 7-point Likert-type scale from 1 (strongly disagree) to 7 (strongly agree).

4.2 Sampling Method

The data used to test the research hypotheses were obtained from the consumers of the official on-line virtual store of 7-11 in Taiwan (www.unimall.com.tw). An e-mail invitation, containing the link to the online survey, was sent to the buyers that once they made a purchase from Unimall to inform that respondents would be automatically entered in a drawing for a prize of NT$500. A week after the first mailing, a second e-mail was sent both to thank those had returned the questionnaire and to encourage those who had not yet participated in the activity.

4.3 Pretest

We conducted a small-scale pretest of 75 experienced on-line customers before the final questionnaire investigation. First, Cronbach's α coefficient (Nunnally, 1979; Peter, 1979) is taken as the evaluation baseline of internal consistency. Henson (2001) pointed out that a reliability of 0.5 to 0.6 is enough for arranging the scales

of a questionnaire. Accordingly, variables were to be deleted based on a threshold of 0.6. Finally, no items were deleted since the reliability scores all exceeded 0.6.

In addition, we invited several experienced scholars to recommend modifications of our questionnaire with regard to demonstrating the face validity and content validity. This paper did not detect the validity of questionnaire by using exploratory factory analysis (EFA), but instead turned to verify the reliability of collected items by means of confirmation factory analysis (CFA). The evaluation guideline for factor load was based on a threshold of 0.5 (Hair, Anderson, Tatham, & Black, 1998), whereby S3, S4 (the third and fourth item of satisfaction), and RI3 (the third item of repurchase intention) were deleted; these items were excluded in the final examination.

5. Data analysis and results

5.1 Data analysis

Our research is targeted at customers that have shopping experiences through the Internet shopping in Taiwan. The unit of analysis in our research is the individual consumer. The on-line survey campaign produced 354 returned responses. Of these, 12 questionnaires were eliminated because they either appeared unreliable or were completed by first time shoppers. Finally a total of 342 usable surveys provide the data for analysis.

The respondents ranged in age from 15 to 70. Eighty-three percent of the sample was female and 36 percent were married. Almost 45% percent of the sample reported that they had purchased experiences for more then 3 years or above. Top three goods they buy from the on-line store are clothes, commodity, and cosmetic.

We used the Structural Equation Model with a LISREL 8.54 confirmation factor analysis (CFA) to assess our research model. Model estimation was done using the maximum likelihood fitting function and sample correlation matrix. A two-step approach recommended by Anderson and Gerbing (1988) was applied to data analysis. The first step involved the analysis of the measurement model, which demonstrated a sufficient level of validity and reliability (Fornell & Lacker 1981). The second step was the structural model testing.

5.2 Measurement model

The first step in scale validation was to assess the strength of measurement between the items and associated constructs. According to previous literature (Bagozzi & Yi, 1988; Jöreskog & Sörbom, 1989), the commonly used fit indices and guidelines in SEM are: (1) $\chi 2$/d.f. (<5 is preferred), (2) adjusted goodness-of-fit index (AGFI, greater than 0.80 is desirable), (3) comparative fit index (CFI, greater than 0.90 is desirable) (4) normed fit index (NFI, greater than 0.90 is desirable), (5) non-normed fit index (NNFI, greater than 0.90 is desirable), (6) standardized root mean square residual (SRMSR, less than 0.08 is desirable). For the current CFA model, χ^2/d.f. is 3.13 (χ^2 = 603.19; d.f. = 193; p<.001), AGFI is 0.82, CFI is 0.98, NFI is 0.97, NNFI is 0.97, and SRMSR is 0.059. Hence, the fit indices indicate that each scale captures a significant amount of variation in these latent dimensions, suggesting adequate model fit.

5.3 Structural model

Overall, the fit indices indicated a good fit of our model with the data collected from the validated measures (χ_{195}^2 = 495.59; χ^2/d.f. = 2.54, p<.001; AGFI = 0.85; CFI = 0.98; NFI = 0.97; NNFI = 0.98, SRMSR = 0.047).

The test results of the structure are summarized in Figure 1, which showed that, consistent with Hypothesis 2, Internet self-efficacy has a positive direct influence on confirmation (γ = 0.29, p < 0.001), which explains 9% of the confirmation variance. Additionally, perceived usefulness is predicted mostly by confirmation (Hypothesis 5; β = 0.74, p < 0.001), which explains 57% of its variance. As expected, satisfaction can be predicted by confirmation (Hypothesis 4; β = 0.38, p < 0.001) and perceived usefulness (Hypothesis 6; β = 0.61, p < 0.001), explains 85% of the satisfaction variance. Finally, consistent with Hypothesis 7 and 8, perceived usefulness (β = 0.64, p < 0.001) and satisfaction (β = 0.28, p < 0.01) have a significant positive direct effect on repurchase intention with a variance of 82%, which is explained mostly by these two factors.

In summary, all path coefficients in the model were significant with the exception of the paths from Internet self-efficacy to perceived usefulness (H1) and to repurchase intention (H3).

6. Discussion and Implications

When exploring continuance intention of customers based on their IT-related capabilities, social cognitive factor, and performance, the research findings showed that: 1) the most influential determinant of repurchase intention is perceived usefulness, followed by satisfaction; 2) the most important influential factor of satisfaction is confirmation, followed by perceived usefulness; 3) the most important influential factor of perceived usefulness is confirmation; 4) Internet self-efficacy can determine the effect to confirmation.

The results of our research are consistent with those of Bhattacherjee (2001a, 2001b), showing that satisfaction and perceived usefulness have notable influences upon continuance intention of IS. Our findings also support that perceived usefulness plays a critical role upon repurchase intention of on-line customers. This result is consistent with Koufaris's (2002) research. Furthermore, Internet self-efficacy appeared to have no significant influence upon repurchase intention and perceived usefulness, possibly owing to the fact that some skills of the Internet self-efficacy are not important during Internet purchase activities (e.g. the capability of upload files onto website or FTP; installing application programs or software), which may counteract the effect of this factor. In practice, the reason that Internet self-efficacy was found to have no significant impact on perceived usefulness is most likely that online shoppers are confident with their skills for making purchases form Internet shopping mall. Therefore, the capabilities of Internet usage are not major concerns for those people. Another possible explanation is that the most of the current Internet shopping sites have informative online guidelines or tutorials to help completing on-line transactions. Thus, even individuals with lower Internet self-efficacy may conduct online transactions successfully and perceive the usefulness of online shopping.

The findings from this study also corroborate the importance of perceived usefulness and confirmation in order to provide satisfaction. Our findings have practical significance when considered along with the results of previous studies. For example, Devaraj et al. (2002) showed that perceived usefulness has a significant influence upon customer satisfaction in e-commerce channels. Swan and Trawick (1981) focused on expectation disconfirmation and satisfaction in the context of retail business, discovering that a higher positive confirmation determined a higher satisfaction. Based on the ECT model, Spreng et al. (1996) proposed a modified satisfaction composition model. They found that confirmation has a significant influence upon product satisfaction and information satisfaction, as well as overall satisfaction. Bhattacherjee (2001a; 201b) also point out that confirmation has a significant positive direct effect on satisfaction and perceived usefulness.

The results of this study have shed light on some important issues related to customers' retention toward online shopping. First, perceived usefulness is a more important factor than satisfaction and Internet self-efficacy, implying that Internet shopping could enhance customers' effectiveness in shopping activities. Thus, online vendors should ensure that they provide adequate utilitarian value to customers instead of focusing on just one of aspects in their web site development. Online vendors also should design their web sites to meet customers' needs for improving performance in online shopping, providing enough information about the products they sold, and also have fun when buying on the website. Additionally, satisfaction is also found as a decisive factor affecting repurchase intentions of the customers. Thus, managers of online retailers need to monitor the satisfaction of their customers with their web sites to compete in the Internet shopping market. In doing so, they should reorganize and redesign their web sites as high information quality, system quality, and service quality ones to add value and create insight by examining web customers' satisfaction.

7. Limitations and Future Directions

This research represents a careful and systemic effort to incorporate elements from different distinct theories (SCT, TAM, and ECT) as part of an integrated model within the context of the Internet shopping repurchase intention. We then tested the research model using a field study. It incorporates a number of features, including a large sample size, actual measures of behavior collected from experienced consumers with Internet shopping mall. However, it is not without limitations. First, the 342 valid copies of questionnaires comply with the statement of Boomsma (1982) that optimum sample number in SEM should amount to 400 or larger (in order to ensure accuracy of estimates and representativeness for diversified indicators or variables and application programs); however, the samples from convenient sampling method may not be truly representative thereby demanding more rigorous sampling methods. Second, since the scope of research is based on all Internet shopping websites with a wide range of samples and products, the respondents may find it difficult to fill in the questionnaire. Thus, it is recommended that the sampling scope be narrowed to a single shopping mall. Furthermore, it might be helpful to use cluster analysis to make categories based on by gender, age, occupation, educational degree, and product category to discuss the relationship between demographic variables and types of purchase for making market segmentation strategy. Third, as the significance of Internet self-efficacy was lower than expected, we recommended that further researchers identify whether Internet self-efficacy could influence repurchase intention via other mediation variables. Moreover, social influential conditions may be added into the discussion of repurchase intention through e-commerce websites.

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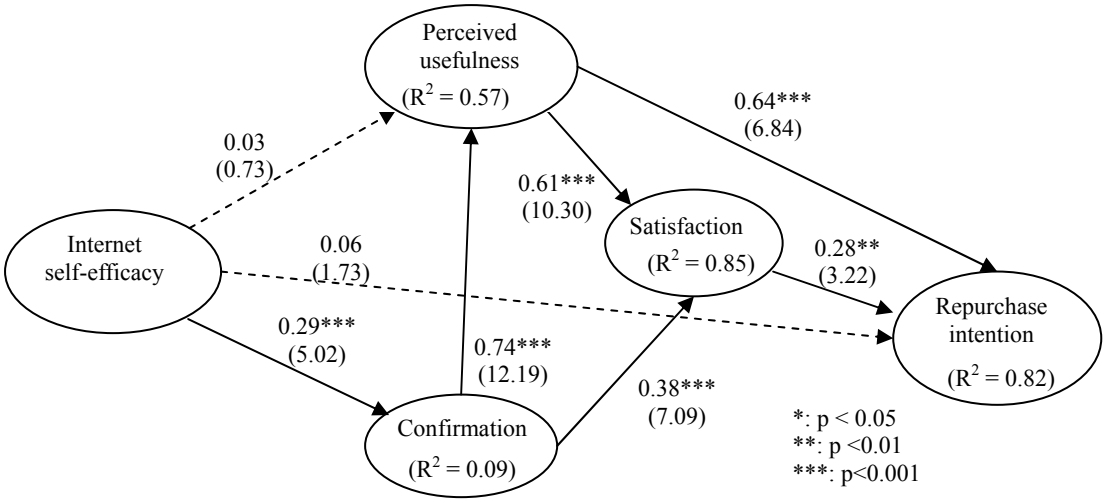

Figure 1. Results of Structural Equation Model