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Understanding Online Shopping Continuance: An Extension of IT Continuance Model

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Abstract

Understanding IT continuance and its extension has been important in information systems field. By amending Bhattacherjee's IT continuance model, we examine why consumers continue using an online shopping channel for product purchase. We use confirmation on product quality, confirmation on post-sales service, psychological contract fulfilment, and satisfaction to explain consumers' attitude toward, and intention of, online shopping continuance. The results indicate that all the hypothesized relationships proposed in this study are significant at least at p-value < 0.01 level, demonstrating that product quality, post-sales service, psychological contract, and satisfaction are pivotal for consumers to repurchase products with that online channel. Detailed findings and conclusions for academics and practitioners are presented.

Keywords: IT continuance, online shopping continuance, psychological contract fulfillment

1. Introduction

For more than two decades, most research in the area of information technology (IT) usage has mainly focused on initial acceptance under the implicit assumption that the expected benefits of IT usage such as gains in efficiency, effectiveness, or productivity cannot be realized unless individual users accept it first. While very plausible, this assumption may become a myth given the situation where individual users do not use IT continuously. Indeed, initial acceptance of IT is of course important for realizing IT success, but long-term viability of an IT and its eventual success depend on its continued use rather than first-time usage (Bhattacherjee, 2001). This is why Lyytinen & Hirschheim (1987) asserted that infrequent, inappropriate, and ineffective long-term use of an IT application often contributes to its failures. Understanding why individual users discontinue using IT or, alternatively, what factors drive individual users to continue using IT appears to be another pivotal issue for information systems (IS) scholars to consider.

In fact, IT continuance is not an unfamiliar issue in IS field. It has even been examined across different IT contexts such as e-learning systems, the Web portal or World Wide Web, virtual communities systems, and e-negotiation systems. These above examinations are based on Bhattacherjee's (2001) IT continuance model because Bhattacherjee's (2001) model is a pioneering IT continuance model that builds on entirely different theoretical foundations. By appealing to not only traditional IS research but also consumer behavior literature, the model suggested that perceived usefulness, a salient variable underlying acceptance behavior, still

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significantly influences continued IT decision. Nevertheless, satisfaction and confirmation derived from expectation-confirmation theory (ECT) (Oliver, 1980) explain a more considerable proportion of variance in IT continuance intention.

Despite its originality, Bhattacherjee's (2001) model is relatively parsimonious, and not able to explain the continued behaviors in a more complex IT environment. For example, the continued decision in online shopping channel can't be reasonably explained by the three salient variables identified in this model. In addition, the variable of confirmation is assessed using the overall criteria (users' overall experience of IT usage). Such confirmation level may fail to capture how confirmed the users' real expectation is, compared to the confirmation that is measured using attribute-level criteria. Therefore, we determine to amend Bhattacherjee's (2001) model for its theoretical extension across the context of online shopping. We hope that the current study can fill the research gaps in the field of IT continuance and help inform why consumers accept one online shopping channel initially but do not use it for shopping continually.

2. Theoretical background

As we stated earlier, the antecedents of IT continuance intention suggested by Bhattacherjee's (2001) model are three user perceptions when interacting with IT: satisfaction with IT usage, confirmation of expectation from IT usage, and perceived usefulness of continued IT usage. That is, if an individual user is satisfied with her/his prior experience of using an IT, if her/his initial expectation is confirmed during her/his prior usage of that IT, and if s/he perceives that using that IT is of great usefulness, s/he will have the intention to continue rather than discontinue using that IT. Based on this standpoint, one may easily infer that a consumer will have the intention to continue using the same website for product purchasing if s/he is satisfied with her/his prior searching and purchasing experience in that website, if her/his original expectation is confirmed during the course of her/his prior usage in that website, and if s/he perceives that website to be very useful in getting information and purchasing products. However, since online buyers are not purely IT users and their engagement in online exchange relationship with the Web vendors goes beyond the realm of traditional IT usage (Koufaris, 2002), such inference provides a one-sided explanation of, and may sometimes contradict, observed continuance behavior in the context of online shopping.

According to Gefen, Karahanna, & Straub (2003), online shopping is in essence the activity in which consumers interact with both the website interface and the actual e-seller. Under this perspective, each time consumers shop online, they shape not only their perceptions about whether the expected benefits of using the Web interface for product purchase materialize, but also the cognitions of whether their desired product attributes and services from the actual Web vendor are fulfilled. This implicitly indicates that consumers' intention to repurchase with the same online shopping channel is unable to be well predicted unless their perceptions caused by the buyer-Web interaction and the cognitions formed via the buyer-seller contact are considered simultaneously. Yet, consumers' contact with the actual e-seller occurs generally at fulfilment or post-purchase stage of buying processes, following their interaction with the Web interface. Based on the evidence that buyers give more weight to e-service they receive late than to e-service received earlier (Posselt & Gerstner, 2005), the Web-relevant user perceptions emerging

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earlier may not be as important to continued behavior in the context of online shopping as the Web-irrelevant consumer cognitions emerging late. That is, a consumer who goes through an unfavourable episode in her/his purchasing processes irrelevant to a certain website usage (e.g., product delivery delay) may not continue usage of that website to buy goods, even though her/his earlier usage experience of that website has been satisfied, her/his initial expectation about the usage of that website has been confirmed, and her/his perception that website is helpful for information searching and product purchasing has been recognized. Hence, we dismiss the three extant IT-relevant user perceptions suggested by Bhattacherjee (2001) as relatively inapplicable to explaining continued online store usage. Instead, we use another three IT-irrelevant consumer cognitions—psychological contract fulfilment (PCF), confirmation on product quality, and confirmation on post-sales service—as the central determinants of continuance intention tailor-made for the online shopping context. This way the IT usage paradigm derived from Bhattacherjee‘s (2001) model would move a step forward in accounting for the continued behaviors in a comparatively complicated IT environment, in addition to the ones in traditional IT contexts.

3. Research hypotheses

Ten hypotheses were proposed in this study as follows.

H1: Consumers’ confirmation on product quality is positively related to their psychological contract fulfilment with the online shopping channel.
H2: Consumers’ confirmation on product quality is positively related to their satisfaction with the online shopping channel.
H3: Consumers’ confirmation on post-sales service is positively related to their psychological contract fulfilment with the online shopping channel.
H4: Consumers’ confirmation on post-sales service is positively related to their satisfaction with the online shopping channel.
H5: Consumers’ psychological contract fulfilment is positively related to their attitude toward the online shopping channel.
H6: Consumers’ psychological contract fulfilment is positively related to their satisfaction with the online shopping channel.
H7: Consumers’ satisfaction is positively related to their attitude toward the online shopping channel.
H8: Consumers’ psychological contract fulfilment is positively related to their intention of repurchasing products with the online shopping channel.
H9: Consumers’ satisfaction is positively related to their intention of repurchasing products with the online shopping channel.

H10: Consumers’ attitude is positively related to their intention of repurchasing products with the online shopping channel.

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4. Methods

In order to test the hypotheses, an online field survey was conducted. The questionnaire was designed to be placed as a web-based survey website. Web-based surveys have been used generally in previous studies in IS field. Each participant received NT$100 to compensate for the time s/he spent filling out the questionnaire. The returned questionnaires were initially screened for usability and reliability.

The main survey had 398 responses. We eliminated 37 respondents who were obviously unconcerned (e.g., giving the same rating for all items). Finally, 361 questionnaires were retained for data analysis. Approximately, 59.8% of the respondents were male; 43.2% were aged between 20 and 39; 85.8% were educated with institute level or above; 65% use the Internet more than 18 hours each week. Table 1 presents the descriptive statistics that include the means and standard deviations of the main constructs in this study. Furthermore, since the responses came from non-random sampling methods, this study did a test of homogeneity on the demographic variables. All items among the constructs were tested against demographic controls (gender, age, level of education, and Internet usage) using ANOVA, which is suggested by Cho (2006). The mean scores of the items were all indifferent ($p > 0.05$) among the demographic controls.

Table 1. Descriptive statistics of data

Construct	Mean	Std.
Confirmation on product quality	4.891	1.112
Confirmation on post-sales service	4.972	1.097
Psychological contract fulfillment	5.334	1.013
Satisfaction	5.109	1.100
Attitude	5.031	1.090
Repurchase intention	5.301	1.136

The questionnaire was developed to measure six constructs of interest to this study: confirmation on product quality, confirmation on post-sales services, psychological contract fulfilment, satisfaction, attitude, and repurchase intention. All constructs were measured using items that have been validated in prior research and reworded to relate specifically to the context of online shopping continuance. Before conducting the main survey, we performed a pre-test and a pilot test to validate the instrument. In the pre-test phase, instruments, scales, and questions of the surveys were reviewed by three academic experts who are faculty members or doctoral candidates at the department of information management. Each of them respectively possesses the domain expertise corresponding to the constructs of the study. This phase increased face validity of the compiled items and improved the wording of instructions, scales, and question. In the pilot-test phase, the aim of this phase was to test the reliability of the instrument and to identify ambiguities, unclear questions, and poorly worded questions. The questionnaire was tested in this phase by convenient sampling. There were 50 responses, of which 42 were complete, giving a valid response rate of 84%. The results of the pilot test were evaluated by

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using Cronbach's reliability. Cronbach's reliability coefficient was first calculated for the items of each construct. The standard lower bound for Cronbach's alphas is .70 (Hair et al., 1998).

5. Results

Data analysis was performed using partial least squares (PLS), a structural equation modeling technique that has become widely accepted in recent years due to its accuracy and utility. PLS also places minimal restrictions on the sample size and residual distribution. Data analysis proceeded in two stages. First, we tested the measurement model by subjecting our measures to a series of confirmatory factor analysis (CFA). Second, we developed a structural equation model to test our hypotheses.

Table 2 presents standardized loading and other metrics for the item measures as well as reliability and validity measures. Hair et al. (1998, p. 112) suggested that in a sample of 350 respondents, factor loading of 0.30 or above is significant. In this study, all items in the measurement model exhibit factor loadings ranging from 0.867 to 0.945 and are thus considered acceptable for the remainder of the analysis. The reliability metrics for all the six constructs, ranging from 0.899 to 0.943, also exceed the recommended threshold of 0.70 (Segars, 1997) and are fully acceptable. Average variance extracted (AVE) shows that six AVE values exceed the recommended threshold of 0.50 (Segars, 1997).

Table 3 further displays the discriminant validity of the measurements. For good discriminant validity, the square root of AVE of a construct should be larger than that of the construct's correlations with the other constructs (Fornell & Larcker, 1987). The data indicates that the shared variance among variables is less than the variances extracted by the constructs, the value on the diagonals. This reveals that the constructs are empirically distinct.

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Table 2. Assessing the measurement model

Constructs/ Items	Standardized loading	t-value	Weight	Composite reliability	Average variance extracted
Confirmation on product quality (CPQ)				0.935	0.782
CPQ1	0.892	66.247	0.286		
CPQ2	0.889	66.644	0.299		
CPQ3	0.871	48.692	0.242		
CPQ4	0.885	62.584	0.302		
Confirmation on post-sales service (CPS)				0.899	0.748
CPS1	0.883	50.435	0.416		
CPS2	0.904	78.160	0.390		
CPS3	0.806	37.346	0.348		
Psychological contract fulfilment (PCF)				0.941	0.842
PCF1	0.905	42.954	0.356		
PCF2	0.923	56.647	0.370		
PCF3	0.925	76.519	0.364		
Satisfaction (SA)				0.937	0.789
SA1	0.871	43.388	0.267		
SA2	0.912	65.185	0.285		
SA3	0.895	36.259	0.277		
SA4	0.875	48.400	0.297		
Attitude (AT)				0.935	0.781
AT1	0.867	51.290	0.289		
AT2	0.884	54.658	0.283		
AT3	0.907	80.366	0.287		
AT4	0.877	45.486	0.272		
Repurchase intention (RI)				0.943	0.847
RI1	0.924	73.709	0.370		
RI2	0.945	96.223	0.375		
RI3	0.891	43.595	0.340		

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Table 3. Discriminant validity

Constructs	CQ	CS	PC	SA	AT	RI
CQ	**0.782**					
CS	0.552	**0.748**				
PC	0.243	0.288	**0.842**			
SA	0.473	0.410	0.305	**0.789**		
AT	0.508	0.432	0.292	0.648	**0.781**	
RI	0.332	0.276	0.291	0.451	0.534	**0.847**

Notes: Diagonals represent the average variance extracted, while the other matrix entries represent the squared correlations.

We used PLS with the bootstrapping resampling procedure to test our model. The examination of structural equation model includes the coefficients of the causal relationships between constructs, which would validate the hypothesized effects, and the R-square values, which stand for the amount of variance in dependent variables explained by their antecedents. Figure 1 presents the paths and their significance on the structural model. The estimated path coefficients, associated t-values of the paths, and the coefficients of determination for each dependent construct are shown in Table 4.

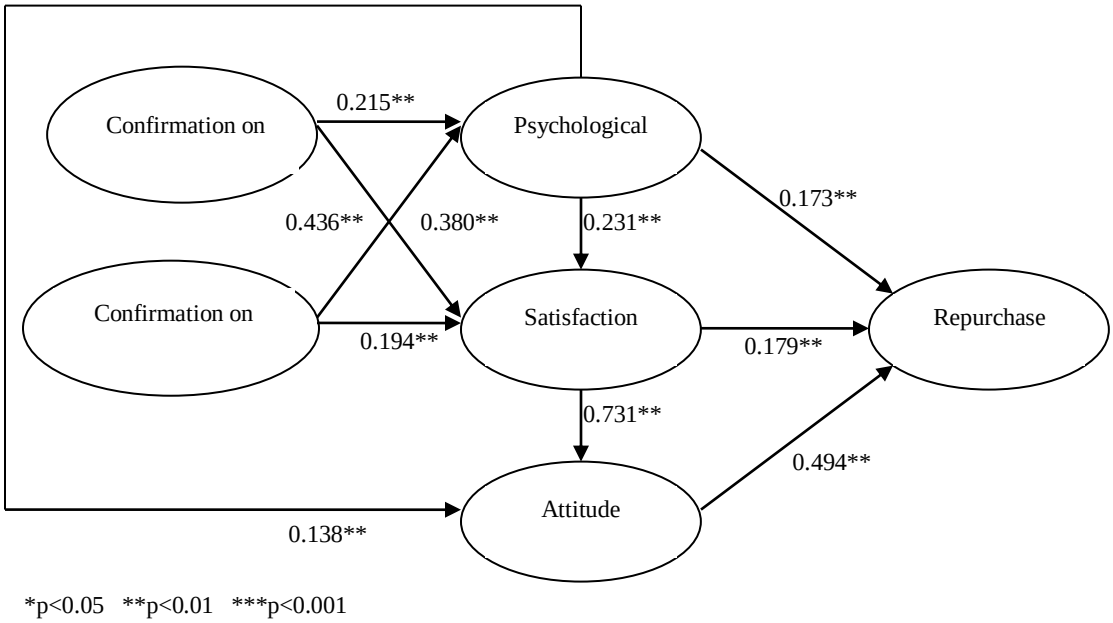

Fig. 1. Path diagram for research model

As shown in Fig. 1, 31.2% of the variance in psychological contract fulfilment was explained by confirmation on product quality (β = 0.215, t = 2.904) and confirmation on post-sales service (β = 0.380, t = 5.552), providing support to Hypotheses 1 and 2. Satisfaction, in turn, was predicted

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by confirmation on product quality (β = 0.436, t = 4.982), confirmation on post-sales service (β = 0.194, t = 2.454), and psychological contract fulfilment (β = 0.231, t = 4.534), providing support to Hypotheses 3, 4, and 6 respectively. These two factors 55.6% of the variance in consumer satisfaction was explained. Moreover, 66.4% of the variance in attitude was explained by satisfaction (β = 0.731, t = 16.541) and psychological contract fulfilment (β = 0.138, t = 2.996), providing support to Hypotheses 5 and 7. Consumers' repurchase intention was significantly explained by psychological contract fulfilment (β = 0.173, t = 2.871), consumer satisfaction (β = 0.179, t = 2.344), and attitude (β = 0.494, t = 6.591). These three factors explained 57.6% of the variance in repurchase intention, thereby demonstrating support for H7, H8, and H9 respectively.

Table 4. Hypothesis testing results

Hypothesis	Path	Path coefficient	t-value	Result
H1	Quality -> psychological contract	0.215	2.904	Supported
H2	Quality -> satisfaction	0.436	4.982	Supported
H3	Service -> psychological contract	0.380	5.552	Supported
H4	Service -> satisfaction	0.194	2.464	Supported
H5	Psychological contract -> attitude	0.138	2.996	Supported
H6	Psychological contract -> satisfaction	0.231	4.534	Supported
H7	Satisfaction -> Attitude	0.731	16.541	Supported
H8	Psychological contract -> intention	0.173	2.871	Supported
H9	Satisfaction -> Intention	0.179	2.461	Supported
H10	Attitude -> Intention	0.494	6.591	Supported

Notes: Psychological contract fulfillment R^2: 0.312; Satisfaction R^2: 0.556; Attitude R^2: 0.664 ;
Repurchase intention R^2: 0.576.

6. Discussion

As Bhattacherjee's (2001) model is promising, its explanatory ability has been demonstrated across different IT contexts, such as e-learning systems, the Web portal or World Wide Web, virtual communities systems, and e-negotiation systems. However, like most theoretical models, it is not without debates. First, this model is relatively parsimonious, so its applicability to continued behavior in a complex IT environment is limited. Specifically, this model that identified three user perceptions when interacting with IT—satisfaction with IT usage, confirmation of expectation from IT usage, and perceived usefulness of continued IT usage—as the antecedents of IT continuance intention may not effectively predict continued decision in an

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online shopping channel where consumers not only interact with traditional IT interface (the Web interface) but also communicate with the actual e-vendor. Next, in consumer behavior literature, users' expectation is often confirmed as a result of the congruence between the observed performance and their desired product attributes rather than the overall product level. However, in Bhattacherjee's (2001) model, confirmation is assessed in terms of expectation-performance congruence under the assumption that IT performance can be judged uniformly across various users using the overall criteria (users' overall experience of IT usage). Such confirmation level may fail to capture how confirmed the users' real expectation is, and is, therefore, more likely to explain a misleading variance in its succeeding constructs (e.g., satisfaction) than is confirmation that is measured using attribute-level criteria.

Taking these debates into account, we amend Bhattacherjee's (2001) model for its theoretical extension across the context of online shopping. We argue that user perceptions emerging in the period of the Web interface usage (i.e., satisfaction with the Web interface usage, confirmation of expectation from the Web interface usage, and perceived usefulness of continued Web interface usage) seem to be somewhat incapable of explaining continued online shopping intention, since their explanatory ability may diminish as other subsequent consumer cognitions appear during the course of buyer-seller contact and become more effective in influencing consumers' online purchase decision. Thus, instead of using these extant user perceptions, we posit constructs, representing consumers' psychological state or cognitive response subsequent to their dialog with the Web vendor, as the core drivers of continuance intention unique to the online shopping environments. Further, we assert that the measurement of perceived confirmation on some key attributes can help understand what sorts of confirmation in consumers' mind really influence their continued purchase behavior and, therefore, provides significant improvement in explanation over the measurement of perceived confirmation on overall purchasing experience. Hence, we incorporate two different confirmation constructs into the online shopping continuance model, respectively representing various yet important consumers' perceptions of the expectation-performance congruence when communicating with the actual Web vendor. In short, Bhattacherjee's (2001) model views IT continuance simply as a consequence of users' interaction with IT interface as well as ignores that overall-level confirmation may not effectively catch users' real experience with IT usage, and is, accordingly, of limited assistance in unraveling the continued behavior in relatively complex IT usage environments such as online shopping channels. The current study addresses the above gaps in this well-known IT continuance model by identifying consumers' perceptions when connecting with the Web vendor, subdividing perceived confirmation into two different constructs, and presenting an adapted yet refined theoretical model that can help inform our understanding of the "acceptance-discontinuance anomaly" (Bhattacherjee, 2001, p. 352) in the context of online shopping.

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