Likelihood to abort an online transaction: influences from cognitive evaluations, attitudes, and behavioral variables

Jinsook Cho*

Department of Marketing, University of Wisconsin-Madison, 975 University Avenue, Madison, WI 53706-1323, USA

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Abstract

This study identifies evaluative, attitudinal, and behavioral factors that enhance or reduce the likelihood of consumers aborting intended online transactions (transaction abort likelihood). Path analyses show that risk perceptions associated with e-shopping have direct influence on the transaction abort likelihood, whereas benefit perceptions do not. In addition, consumers who have favorable attitudes toward e-shopping, purchasing experiences from the Internet, and high purchasing frequencies from catalogs are less likely to abort intended transactions. The results also show that attitude toward e-shopping mediate relationships between the transaction abort likelihood and other predictors (i.e., effort saving, product offering, control in the information search, and time spent on the Internet per visit).

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1. Introduction

Consumers’ shopping activities on the Internet are becoming more significant every year. In 2001, business-to-consumer (B2C) e-commerce generated US$ 32 billion, an increase of 19.3% from 2000. E-commerce sales for the first quarter of 2003 were around US$ 11.9 billion, up about 25.9% from the first quarter of 2002 [34]. Despite the impressive expansion of e-commerce, it is interesting to note that e-commerce still accounts for only a small portion of total US retail activities. For instance, the retail sales generated by e-commerce in the first quarter of 2002 were less than 1.5% of total retail sales of the same quarter. Statistics indicate that although almost 95% of Internet users visit online retail sites, most of them do so without the intention of actually making a transaction. More importantly, even when consumers visit Internet shops intending to make a purchase, many of them do not complete the transaction and abandon their intention just prior to checkout [26].

E-retailers spend substantial money and effort to entice consumers to visit their retail sites. Their websites have all the necessary ingredients to generate a positive shopping experience, such as usability, aesthetic design, ease of navigation, and transaction security. Yet, consumers who visit Internet shops with the intention of making a purchase frequently end up abandoning their shopping carts. Questions arise as to why. Despite numerous studies of the Internet retailing
In terms of website design (efficiency, affects, values, trust, etc.), little attention has been paid to understanding this aspect. Examining this issue is important, since consumers leaving an online transaction without buying represent potentially significant lost sales for e-retailers. On average, for every complete online transaction, nearly four times as many transactions are abandoned. If this trend continues, Datamonitor forecasts a cumulative loss of more than US$ 175 billion in potentially salvageable sales over the next 5 years [28]. Understanding the reasons that online consumers abandon their shopping carts and identifying consumer segments that are less prone to exhibit such behavior can provide vital information to e-retailers. The current study examines these aspects. In particular, this study attempts to identify factors influencing the likelihood of consumers to abort an online transaction using a multi-attribute attitude model based on the theory of reason action (TRA).

2. Predicting the intention to abort an online transaction

TRA suggests that an individual's intention of performing a certain act is heavily influenced by an overall affective evaluation of performing that act (attitude) and that such an evaluation is made based on one's cognitive evaluation of consequences of that act [1,33]. When consumers evaluate consequences of product usage, they evaluate not only those outcomes that are immediate, direct, and tangible (functional consequences), but also those that are rather internal, personal, and abstract (psychological consequences). Such evaluations of usage consequences often take the form of possible benefits and potential risks that usage of a certain product might entail.

2.1. Benefit and risk perceptions associated with e-shopping

Shopping efficiency is one of the most significant functional benefits that consumers obtain from any form of direct retailing [12,31]. In particular, consumers achieve convenience, flexibility, and reduction of time and effort invested in shopping. Because of its interactive nature, Internet retailing provides even more efficiency than conventional direct retailing, particularly when consumers search for information [5,17,18,32]. In addition, the ability of Internet retailing to provide a wide range of product assortment, better economic value, and unique product offerings has been identified as another important positive functional consequence directly related to e-shopping [11].

Although consumers enjoy several benefits by shopping through the Internet, they may also perceive it to have a high level of risk, particularly due to the lack of opportunity to physically examine their purchases. Since consumers do not receive and use the product immediately upon completing the transaction, they may be concerned about whether the product will look, perform, or fit as expected [19,29]. Psychological anxieties are also involved in the delivery process of direct retailing, such as frustration with waiting for delivery, anxiety about products getting lost, receiving the wrong products, and so on. Security and privacy issues with regard to giving out personal and financial information over the web have also been identified as a significant risk of e-shopping [23].

When consumers evaluate the consequences of an act, they assess not only the nature of benefit or risk expected but also the extent to which a particular benefit or risk is important to them. Identifying the relative significance of benefit and risk perceptions is useful since it can provide useful strategic implications of what needs to be done to motivate or discourage a certain behavior. The first objective of this paper is to identify salient benefit and risk perceptions in evaluating e-shopping. It is then hypothesized that these evaluations predict the likelihood to abort an online transaction directly or indirectly through the mediation of the attitude toward e-shopping. Allowing for both direct and indirect influences will reveal whether the effects of cognitive evaluations can be sufficiently reflected by attitudes toward e-shopping, as TRA suggests, or whether they work as separate entities directly influencing the likelihood to abort.

2.2. Other attitudinal variables related to online purchasing

The transaction abort likelihood can be affected by other attitudinal variables in addition to attitudes...
toward e-shopping. Quelch and Takeuchi, for instance, suggested that consumers would be reluctant to shop in non-store channels as long as the experience was inferior to that of shopping in a conventional store [30]. Direct retailing typically does not provide the same levels of sensory stimulation (through touch, smell, music, etc.) and interpersonal/social interaction. Consumers who value such aspects have more favorable attitudes toward physical shopping centers [20]. Those who had positive attitudes toward physical stores would therefore be less likely to give them up by clicking the buy button online, although they might visit and surf retail sites for information.

Attitudes toward catalog retailing can also influence attitudes and behavioral intention toward e-shopping, given the commonalities shared by Internet retailing and catalogs as direct retailing. Previous studies, for instance, indicated that consumers with favorable attitudes toward direct marketing also held more favorable attitudes toward advertisements on the Internet [9]. It is expected that consumers who favorably evaluate purchasing from catalogs will have positive attitudes toward e-shopping and be less likely to abort an online transaction.

### 2.3. Past behavioral variables

When consumers evaluate the consequences of product usage, they also experience varying degrees of uncertainty regarding how accurately their cognitive evaluation will correspond to the actual consequences of product usage. Consumers are more likely to block or abort a task when they are relatively uncertain about their evaluation. One key factor that can reduce such uncertainty is past behavioral experiences. Indeed, studies have indicated that a behavioral history positively influences the probability of the act being performed again [10]. It is therefore expected that consumers who have purchased anything from the Internet at least once will be less likely to abort a transaction.

Previous studies have also indicated that general aspects of Internet usage behavior, in addition to shopping activities, have significant impacts on Internet shopping behavior. Lohse et al. for instance, reported that length of time as an Internet user as well as frequency and amount of time using the Internet per visit were positively related to intention of online purchasing [25]. Longer-term Internet usage, a higher frequency of Internet visits, and longer time spent per visit could be indirect indications that a consumer has had more chances to visit and explore retail sites. A larger degree of such exposure can enhance a person’s familiarity and knowledge about what is involved in purchasing through the Internet, which in turn can reduce uncertainty in evaluating e-shopping.

Behavioral patterns regarding catalog retailing, such as frequency and recency of purchases from catalogs and amount of money spent on catalog purchases, are also important. Since catalog retailing has a basic set of characteristics that are the same as those of Internet retailing, it is reasonable to expect that behavioral patterns with regard to catalogs are important. Lohse et al. for instance, found that the number of catalog orders placed in the last 6 months was one of the significant variables in predicting who would buy online. We thus expect that consumers who have a greater degree of past experience completing purchases through catalogs (higher frequencies of purchase and larger dollar amounts) are less likely to abort an intended online transaction.

Fig. 1 summarizes how the variables are assumed to influence the likelihood of aborting an online transaction. As depicted, the model predicts that attitudes toward e-shopping will mediate the effects of perceived benefits/risks associated with e-shopping on the likelihood to abort an intended transaction. Such benefits and risks, however, directly influence the likelihood to abort an intended transaction. In addition, attitudes toward traditional shopping centers and those toward catalog retailing are expected to have direct effects on both attitudes toward e-shopping and the likelihood to abort an intended transaction on the Internet. Past behavior variables regarding general Internet usage, experience of Internet purchasing, and purchasing history from catalogs are also expected to directly predict attitudes toward e-shopping and the likelihood to abort an intended transaction on the Internet.

### 3. Research methodology

#### 3.1. Questionnaire development

Because consumers’ perceptions and attitudes toward Internet retailing vary with the underlying
product classes, this study confines its attention only to apparel, for that is one of the most significant product categories sold through direct retailing [8]. In fact, recent industry surveys indicated that apparel is one of the most frequently purchased items through the Internet, along with books, software, and computers [7]. Clothing also has sufficient variation and uncertainty in product characteristics so as to facilitate identification of the benefit and risk perceptions associated with Internet retailing.

Measurement items employed were based on past studies in similar contexts, although slight modifications were needed to tailor them to our study content. However, since no previous study has examined the likelihood to abort a transaction (even in the traditional retail shopping context), we needed to construct measurement items for our main dependent variable. First, we consulted three experts in experimental design and asked each to compose a scenario in which consumers contemplate the completion of an intended online transaction of clothing purchasing. The shopping scenario each expert composed was reviewed by the other two for its validity and clarity, and minor changes were made accordingly. Next, three different sections of focus group interviews were conducted with five to seven individuals whose ages ranged from 18 to 55. Each individual in each session was asked to rank the three different scenarios in terms of accuracy and clarity. The scenario for the main data collection was made based on these results.

The focus group interviews were also used to confirm and modify items measuring benefit and risk perceptions associated with e-shopping. Before the main survey, the questionnaire was pretested with 116 respondents not included in the final sample. Minor modifications were made to the questionnaire based on the pretest results. Specific items employed to measure attitudinal and behavioral variables used are presented in Appendix A. All the measurement items in the questionnaire were measured on a 7-point Likert scale, ranging from strongly disagree (1) to strongly agree (7).

3.2. Sample

For the main survey, a questionnaire was initially sent to 1000 people whose names and addresses
were purchased from a commercial listing company (randomly selected from the general US population). The cover letter explained the purpose of the study and asked respondents not to fill out the questionnaire if they did not have access to the Internet or never used it. To increase the response rate, additional mailings were implemented: after 3 weeks, another questionnaire was sent to those who had not responded to the first mailing; 2 weeks after the second mailing, a reminder postcard was sent to individuals who had still not responded. Of 1000 initial mailings, 92 questionnaires were returned as undeliverable. Of the remaining pool of 908, a total of 308 responses were received after two follow-up mailings, a response rate of 34%. Among these, 14 respondents were excluded for incomplete and irrelevant data. Thus, data analyses were conducted using a final sample size of 294 respondents. About 54% of the respondents were female, 53% were in the age range of 25–45, and 41% were married. Approximately 50% had education levels of college or junior college. About 40% had annual incomes ranging from US$ 20,000 to 60,000.

3.3. Non-response bias

Prior to the main survey, the data were examined for a non-response bias. To estimate its magnitude, the respondents were assumed to be like the average respondents up to the second mailing and the non-respondents were like the respondents who replied to surveys after the last mailing [3]. Descriptive statistics, t-test, $\chi^2$, correlations, and regression analysis were used to detect the possible existence of group differences in the demographics and key measures (benefit and risk perceptions, attitude toward Internet retailing, likelihood to abort an intended transaction before checkout, etc.) between respondents and projected non-respondents. The results showed no statistically significant group differences, implying no significant non-response bias in the data set.

4. Data analysis and results

The main data analysis was conducted following the two-step approach suggested by Anderson and Gerbing [2], where: (1) a confirmatory measurement model first assesses whether measurement items for benefit and risk perceptions have the appropriate properties to represent each construct, and then (2) a structural equation modeling examines the construct validity of the model. Both the confirmatory factor analysis and a structural equation model were assessed using LISREL with the maximum likelihood method [16]. To evaluate the model fit for both the measurement model and path analysis, the comparative fit index (CFI), the incremental fit index (IFI), the goodness-of-fit index (GFI), the root mean square error of approximation (RMSEA) were employed in addition to the $\chi^2$ test. In general, model fit is considered to be adequate if CFI, IFI, and GFI are larger than 0.90 and RMSEA is smaller than 0.08 [15]. The t-test, magnitudes and standard errors of factor loading, and modification indices were used to check the significance of a particular path.

4.1. Measurement model

4.1.1. Construct validity and reliability of the measure

The relationships of the items to their respective constructs were represented by a multiple-indicator measurement model in which each estimated construct was defined by at least three indicators and each indicator was intended to estimate only one construct. Items that did not have significant factor loadings for both product categories and those significant on more than one latent variable in one product category were eliminated. One loading for each factor was also arbitrarily fixed to unity to identify the model and to set a scale for the factors. All coefficients in the variance–covariance matrix (PH) were set free. The variance of each item (i.e., the diagonal values of the TD matrix) was set free, but the covariance of each item was fixed at 0. Detailed information about the remaining items and the results from the confirmatory factor analysis are presented in Table 1.

For these items, all the factor loadings were for only one latent variable and were significant. The $\chi^2$ of the final measurement model was 833.79 with 454 d.f. As indicated, the overall fit statistics (CFI = 0.93, IFI = 0.93, GFI = 0.90, and RMSEA = 0.053) strongly suggested that the measurement model had...
a good fit. All the factor loadings to their respected constructs were higher than 0.60. All composite reliability (all greater than 0.80) and average variance extracted (AVE all greater than 0.58) indicate that items employed had good reliability [4,14]. Thus, we concluded that all indicators demonstrate that items in the measurement model had good construct validity and reliability.

4.1.2. Discriminant validity of measures
We examined discriminant validity by comparing the measurement model to the one with a constraint in the covariance matrix [6]. First, a model comparison was made between the finalized measurement model and a model with the covariance of the latent factors set to 1. The fit of the alternative model became significantly worse with the enactment of such
restrictions ($\chi^2_{\text{diff}}(36) = 105.61, P = 0.000$). Additional procedures were conducted to establish discriminate validity for a set of two constructs related to each other. For this test, we compared the final measurement model with the one that constrained the covariance of the two factors to 1. We then examined the $\chi^2$ difference between the two models to determine whether they were significantly different. We applied this procedure to those constructs whose factor correlations appeared to be high (e.g., flexibility in shopping and effort saving, core operation and site designs, product uncertainty and lack of physical examination, etc.). The results indicated that covariance constraint on flexibility in shopping and effort saving significantly deteriorated the model fit ($\chi^2_{\text{diff}}(1) = 15.61, P = 0.00$), indicating that the two factors represented considerably different entities. The same indication was found with regard to product uncertainty and lack of physical examination ($\chi^2_{\text{diff}}(1) = 6.76, P = 0.01$). We repeated this procedure for other sets of two constructs representing similar constructs. The results of the data analyses clearly showed that a covariance constraint of any two constructs in the measurement model significantly worsened the model fit. We thus concluded that our measurement model had satisfactory psychometric properties.

4.2. Path analysis on the likelihood to abort an online transaction

To test the structural relationships in the model, we employed the path analysis using LISREL with maximum likelihood. In the base model, attitude toward e-shopping and transaction abort likelihood were set as two endogenous latent variables. The rest of the variables were defined as exogenous latent variables. The finalized model is presented in Fig. 2. All the paths and values of the modification indices were carefully examined, and $t$-test and modification indices suggested that freeing or fixing any additional paths would not significantly improve the model. The $\chi^2$ of the final model was 41.78 with 36 d.f. ($P = 0.23$), which indicated that the model mirrored the pattern of covariances of the raw data. All other indices also consistently indicated that the final model had a good fit (GFI = 0.97, IFI = 0.99, CFI = 0.99, RMSEA = 0.046). All the paths with $t$-values higher than 1.98 ($P$-value lower than 0.05) were included.

Fig. 2. LISREL results on likelihood to abort an intended online transaction (completely standardized factor loadings with $t$-values).

<table>
<thead>
<tr>
<th>Attitude toward Catalog Retailing</th>
<th>Effort Saving</th>
<th>Time Spent on Internet per Visit</th>
<th>Control in the Information Search</th>
<th>Product Offering</th>
<th>Concerns over Delivery &amp; Return</th>
<th>Lack of Physical Examination</th>
<th>Frequency of Purchasing from Catalogs</th>
<th>Purchasing experience from Internet</th>
<th>Likelihood to Abort an Intended Transaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>.24 ($t = 3.79$)</td>
<td>.39 ($t = 6.89$)</td>
<td>.20 ($t = 3.41$)</td>
<td>.16 ($t = 3.24$)</td>
<td>.20 ($t = 2.98$)</td>
<td>-.18 ($t = 3.42$)</td>
<td>.11 ($t = 2.03$)</td>
<td>.24 ($t = 3.79$)</td>
<td>.18 ($t = 3.42$)</td>
<td>-.14 ($t = 2.93$)</td>
</tr>
</tbody>
</table>

Model Fit:
Chi-square = 41.78 with 36 d.f. ($P = 0.23$)
GFI = 0.97; IFI = 0.99; CFI = 0.99; RMSEA = 0.046
The most significant path in the final model was the path from attitude toward e-shopping to intention to abort an online transaction ($\beta = 0.52$, $t = 9.63$), which indicates that individuals who have favorable attitudes toward e-shopping will be less likely to abort transactions on the Internet. Specific to attitudes toward e-shopping, we found significantly positive influences of attitudes toward catalog retailing ($\beta = 0.39$, $t = 6.89$) on attitudes toward e-shopping. The results also indicated that product offering ($\beta = 0.20$, $t = 2.98$), control in the information search ($\beta = 0.24$, $t = 3.79$), and effort saving ($\beta = 0.16$, $t = 3.24$) were positively and significantly related to attitudes toward e-shopping. Among behavioral variables regarding Internet usage for general purposes, only the average time spent on the Internet per visit ($\beta = 0.20$, $t = 3.41$) was found to be related to attitudes toward e-shopping. Although we could not find any significant direct influences of these variables on the likelihood to abort an online transaction, indirect influences via attitudes toward e-shopping on the likelihood to abort were all negatively significant, confirming the mediating role of attitudes on intention. However, attitudes toward traditional shopping centers were not significantly related, either directly or indirectly, to the likelihood to abort an online transaction.

We found that lack of physical examination had a significant positive influence upon the likelihood to abort transactions ($\beta = 0.11$, $t = 2.03$). In addition, concerns over delivery and return processes had a significant and positive effect ($\beta = 0.18$, $t = 3.42$) on the likelihood to abort an online transaction. We also looked into the interaction effect of these two variables on the likelihood to abort a transaction, to see if a significant negative effect from concerns about delivery was reinforced by lack of physical examination. The results indicated a significant and positive interaction effect ($\beta = 0.17$, $t = 2.98$). It is important to note that interaction effects were evaluated post hoc (i.e., the decision regarding which interaction effects would be examined was based on the results from main effects). When examining interaction effects, it was common to have multicollinearity between main variables and interaction terms. As a way to cope with this, we adopted the residual-centering method suggested by Lance [22]. This uses the residuals from regressing the interaction variable ($a \times b$) on the main variables ($a$ and $b$) to represent the interaction effects. Such rescaling lessens the multicollinearity problem without affecting the interpretation of the coefficients of the main variables.

Other significant direct paths to the likelihood to abort included those from frequency of purchasing from catalogs ($\beta = -0.14$, $t = 2.93$) and purchasing experience from the Internet ($\beta = -0.23$, $t = 2.75$). We also examined whether these behavioral variables interact with two significant risk perceptions. The results indicated that both frequency of purchasing from catalogs and purchasing experience from the Internet significantly reduced concerns over delivery, thereby reducing the likelihood to abort an online transaction ($\beta = -0.516$, $t = 4.57$; $\beta = -0.458$, $t = 3.65$, respectively).

5. Discussion and implications

Many consumers who go on the Internet intending to buy something leave the sites without completing their intended transaction. Our study has examined who is most likely to abort an intended online transaction, and why. The results of the study yield the following implications.

First, the results indicate that people who have positive attitudes toward Internet purchasing are less likely to abort an intended online transaction, confirming a significant path between attitude and behavioral intention. The results also show that attitudes toward e-shopping mediate the effects of some benefit factors on the intention to abort. The benefit factors found to evoke positive attitudes include better product and value offerings, control in information search, and effort saving. The significant negative relationship between positive attitude and likelihood to abort a transaction indicates that consumers who value such benefit aspects are less likely to abort online transactions, although such effects are indirect.

Second, consumers who have higher levels of concern over lack of physical examination and uncertainty in the delivery and return process (extra costs and uncertainties associated with deliveries and returns) are more likely to abort intended online transactions. Unlike the benefit perceptions, these risk perceptions have direct effects on the likelihood to abort
a transaction. Such risk variables can significantly discourage consumers with favorable attitudes toward e-shopping from completing a transaction. The results also indicate that concerns over the delivery and return process can reinforce (or lessen) the effect of the lack of physical examination on the transaction abort intention. This could imply that Internet retailers who offer secure delivery and generous return policies can significantly attenuate the concern associated with the lack of physical examination (the aspect over which retailers have little control), thereby reducing the chance for consumers to abort intended transactions.

Interestingly, we do not find that security concerns have a statistically significant influence on the likelihood to abort a transaction. This may be due to the fact that many retailers now offer ways to reduce security concerns with Internet purchasing (e.g., encrypted credit card transactions, insurance against fraud, alternative ways to pay for merchandise using third parties, money orders, checks, etc.). Or, it may due to US consumers perception that, while a security issue can pose a serious risk, the chances of it being an actual problem is far less than that associated with purchasing an unwanted product due to the lack of physical examination. It is therefore not the risk of security breach, but rather the prospect of having to return a product that appears to make consumers reluctant to complete Internet transactions.

Our study also reveals that a positive attitude toward physical retail outlets does not significantly increase the likelihood to abort an online transaction. This result implies that even those customers strongly attached to shopping at physical outlets would not necessarily shy away from making transactions online. The result also indicates that most behavioral variables of Internet usage (frequency of Internet visits for general purposes, length of time being an Internet user, and total time spent on the Internet per week) are found to have no significant influence, either directly or indirectly, on the likelihood to abort Internet transactions (although average time spent per Internet visit is related to positive attitude toward e-shopping). These results strongly imply that heavy Internet usage does not necessarily lead to a high likelihood of completing a transaction on the Internet, thus raising a caveat to the approach that attempts to predict Internet purchasing behavior based on general Internet usage behavior.

Meanwhile, we found that consumers who had at least one prior purchasing experience from the Internet are indeed less likely to abort intended online transactions than those without such an experience. In addition, the results indicated that consumers with favorable attitudes toward catalogs and those who made frequent purchases from catalogs are far less likely to abort intended online transactions. These findings clearly suggest that catalog shoppers, along with repeat online customers, are an important target segment for Internet retailing. In addition, we have examined how consumers’ perceptions with regard to the two main risk factors (concerns over delivery and return, lack of physical examination) might differ in terms of these two significant past purchasing behaviors (frequency of catalog purchasing and past experience with online purchasing). The results indicate that consumers who made frequent purchases from catalogs and purchased anything from the Internet in the past have significantly lower levels of concern regarding delivery and return and, thus, have a lower likelihood to abort intended transactions than those without such experiences. By contrast, a consumer’s risk perception regarding lack of physical examination is not significantly influenced by these two behavioral factors. These findings again emphasize the importance of lowering risk perceptions associated with delivery and return as a means of persuading consumers with little or no purchasing history from catalogs or the Internet to complete online transactions.

One should be aware of some limitations of this study when generalizing the results. This study was conducted in the context of purchasing clothing products, which may limit the applicability of our results to product categories that do not share similar characteristics. Consumers’ likelihood to abort may differ for highly standardized products, such as books, CDs, or computer software. It would be interesting to see how the results vary across different products with different degrees of product involvement, etc.

Appendix A. Measures of constructs

Attitudes toward e-shopping (ATT): The measure of consumer attitudes toward Internet retailing was adapted from the measure of attitude toward a specific behavior developed by Ajzen and Fishbein [1].
Purchasing a piece of clothing through the Internet is as follows.

ATT1: bad idea/good idea.
ATT2: favorable/unfavorable.
ATT3: unenjoyable enjoyable.
ATT4: unpleasant/pleasant.
ATT5: unattractive/attractive.
ATT6: unappealing/appealing.
ATT7: interesting/uninteresting.

Attitudes toward shopping centers (ATS): The measure of attitudes toward shopping centers was developed from the items used by Gehrt and Carter [12] and Reynolds [31].

ATS1: I enjoy shopping and walking through malls.
ATS2: shopping centers are the best places to shop.
ATS3: I do not mind spending time browsing through stores.
ATS4: I enjoy traveling to stores for shopping.
ATS5: I enjoy learning about products by going to stores.

Attitudes toward catalog retailing (ATC): The measure of attitudes toward catalog retailing was developed from the items used by Gehrt and Carter [12] and Mehta and Sivadas [27].

ATC1: I enjoy buying things through catalogs.
ATC2: I prefer shopping by mail rather than through retail stores.
ATC3: I am not interested in most of the catalogs I receive.
ATC4: I do not mind receiving catalogs at home.
ATC5: I enjoy browsing through catalogs even though I may not make a purchase.

Likelihood to abort an intended transaction (LIT): The measure of this construct was constructed through the process described in the methodology section. The specific scenario and items used to measure this construct follow:

You need to buy new clothing for the upcoming season. You decided to shop for it over the Internet. You visited several websites and checked out several styles. After some searching, you found a piece of clothing that you are looking for. You read the price and details, and all the descriptions sound good. So you put it in the shopping cart and you are contemplating the purchase of it over the Internet.

In such a situation, how likely would you be to exit the retail site without completing a transaction or abandon the shopping cart just before checkout?

LIT1: likely/unlikely.
LIT2: not at all/definitely.
LIT3: possible/not possible.
LIT4: certain/uncertain.
LIT5: existent/not existent.
LIT6: probable/not probable.

Perceived benefits and risks associated with e-shopping: Items for perceived benefits and risks are adopted from measures used by Donthu and Garcia [9], Gehrt and Carter [12], and Korgaonkar [20]. In addition, three different sections of focus group interviews were conducted to confirm and modify the items to our study context.

Product offerings (PROD): Internet shopping:

PROD 1: offers wide variety of products.
PROD 2: offers unique and unusual products.
PROD 3: offers a large assortment of products.
PROD 4: has less out-of-stock situations.
PROD 5: offers the same products at relatively lower prices.
PROD 6: offers better value for my money.

Flexibility in shopping (FLEX): when shopping through the Internet:

FLEX1: I can shop whenever I want.
FLEX2: I can shop even when stores are closed.
FLEX3: I do not need to worry about driving and parking situations.
FLEX4: shopping can be done at my convenience.

Effort saving (EFFT): when shopping through the Internet, it is:

EFFT1: easier to visit different retail stores.
EFFT2: easier to compare alternatives.
EFFT3: easier to check the availability of merchandise.
EFFT4: easier to pay for the merchandise.
Control in information search (INFO): when shopping through the Internet, I am:
INFO1: better able to find only the products or retail sites that I am interested in.
INFO2: better able to collect and sort only the information and products that I need.
INFO3: better able to control and manage the depth and amount of information that I desire.

Time saving (TIME): shopping through the Internet:
TIME1: takes less time for making purchases.
TIME2: takes less time for visiting different retail stores.
TIME3: takes less time for browsing through alternatives.

Concerns over the delivery and return process (DELV): when shopping through the Internet:
DELV1: I worry that it might be difficult to return or exchange.
DELV2: I worry that it might be difficult to get my money back when I return.
DELV3: Worry that it will cost extra money and effort if I want to return the products.
DELV4: Worry that the items I purchase may be lost in delivery.
DELV5: Worry that retailers might not send the products even after I pay for it.

Product uncertainty (UNCT): when shopping through the Internet:
UNCT1: I worry that the product I receive will not perform the way I expected.
UNCT2: I worry that the product I receive is inferior in quality to the product advertised on the site.
UNCT3: I worry that the product I receive might not fit well.
UNCT4: I worry that the product I receive through the mail may not be the one I ordered.

Lack of physical examination (LACK): Internet shopping is risky because:
LACK1: I cannot judge quality of product by actually examining it.
LACK2: I cannot detect the product defects before buying it.
LACK3: I cannot touch and feel the product before buying it.

Concerns over web privacy and security (PVSC): when shopping through the Internet:
PVSC1: I worry that my personal information that I provide over the Internet can get into the wrong hands.
PVSC2: I worry that my personal information that I provide over the Internet will be sold or disseminated to other retailers or advertisers.
PVSC3: I do not feel comfortable giving out credit card information to make a transaction over the Internet.

Behavioral variables: Respondents were asked to specify the length of time as an Internet user, frequency of getting online per week, the approximate amount of time they spend on the Internet per week, and average amount of time spent on the Internet per visit for general purposes. Respondents were also asked if they had purchased any products from the Internet last year, and if so, how often and what kinds of products they purchased. In addition, respondents were also asked to specify the number of purchases they made from catalogs during the last 12 months, approximate date of the last purchase, and the amount of money they spent on catalog purchases.

References


Jinsook Cho is a visiting assistant professor in the School of Business at the University of Wisconsin-Madison, where she received her PhD. Prior to joining the university as a faculty member, she was an assistant professor at Washington State University. Her research interests include e-commerce, information system, international business, and consumer behavior. Her articles have appeared in several academic journals. The present paper is her first publication in Information and Management.