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JP Shim
Mississippi State University

Tae-Hwan Kim
West Carolina University

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PERCEPTION OF INTERNET SHOPPING: A STUDY ON THE EXPERIENCED AND INEXPERIENCED INTERNET SHOPPERS FOR COLLEGE STUDENTS

J. P. Shim

Mississippi State University
jshim@cobilan.msstate.edu

Tae-Hwan Kim

Western Carolina University
thkim@wcu.edu

Abstract

Over the past decade, Internet shopping has grown substantially. Although the fast advancing information infrastructure makes the connectivity possible to reach almost anywhere in the world, it does not necessarily ensure a successful development of Internet shopping platform for every Internet shoppers. The important factor that could influence the diffusion of Internet commerce can be the difference of the perception on the Internet shopping. A factor that could influence the perception is the difference in internet shopping experience of internet buyers. To examine the effect of internet shopping experience on the perception for Internet shopping, Internet shoppers from two markedly different groups - experience and inexperienced group - were chosen, and the perception for Internet shopping of experienced Internet shoppers is contrasted with those of inexperienced internet shoppers. Using the variables identified by the literature, this study identified differences in perception on Internet shopping between U.S. and Korean shoppers and also identified the particular variables that facilitate or hinder the Internet shoppers in each country. In order to reach a proper subset of Internet shoppers, more than 100 experienced and inexperienced Internet shoppers in the U.S. colleges were chosen. For the analysis of data, multivariate analysis of variance (MANOVA), analysis of variance (ANOVA), and factor analysis were utilized. The results indicate that the perceptions of Internet shoppers in the two groups are different in some of the variables identified in this study.

Introduction

Internet shopping, which is a form of “business to consumer” (B2C) e-commerce through the Internet, has grown substantially during the last decade. While the term e-commerce refers to all online transactions, B2C applies to any business or organization that sells its products or services to consumers over the Internet for his or her own use (Patton, 2001). A tremendous amount of increase in the number of Internet access around the world has been the main drive force for the growth of Internet shopping. Even though there are numerous researches in the field of Internet shopping, virtually all the studies dealing with Internet shopping have neglected or given cursory attention to the diffusion of Internet shopping.

Nielsen//Net Ratings, the world's fastest growing Internet audience measurement service, released its Global Internet Trends report on Internet access and penetration, finding that 429 million people have Internet access around the world. The report measures 27 countries in North America, Europe, Africa, Asia, and Latin America. The results of the study also showed that the US and Canada still account for the largest proportion of the world's Internet access with 41% of the global audience located in those countries.

The fast advancing global information infrastructure, information technology, computer networks, and telecommunication systems, enables the development of e-commerce for every corner of the world (Cohen, 1999; Agarwal, 1999; Kibati and Krairit, 1999). Although information infrastructure makes the connectivity possible to reach almost anywhere in the world, it does not necessarily ensure a successful development of e-commerce. The challenge will come not only from the technology, but also from the people who do the business through the Internet, and the environment in which the businesses operate.

This study will address the problem regarding the little known perceptions of Internet shopping for two different groups - experienced and inexperienced Internet shoppers - and the variables that influence them. To examine the perception of Internet shopping, Internet shoppers from two different groups were distinguished, and the perception for Internet shopping of Experienced Internet shoppers is contrasted with those of Inexperienced Internet shoppers. Using the variables identified by transaction process model (Liang & Huang, 1998), this study tried to find out the particular variables that facilitate or hinder the Internet shoppers in each group. Based on the criteria developed by Charla Mathwick (Graphics, Visualization & Usability (GVU) Center at Georgia Tech, 1999), experienced Internet shoppers were distinguished and individual characteristics of experienced Internet shoppers, such as Internet use behavior and demographic characteristics were investigated.

Theoretical Background

Internet shopping is defined as the purchase of products and services over the Internet. Since there is a huge difference between a making purchase in traditional markets and in electronic markets, it is very important to know what differences the Internet can offer to the customer that is unavailable through conventional means.

Electronic shopping shares important characteristics with traditional shopping. Some of the components categorized for traditional shopping were merchandise, service, promotion, and convenience (Lindquist, 1974-75). Among these, Arnold et al. (1997) extended their study to convenience component and identified convenient attributes such as a fast checkout and the ease of navigating through the store. Based on these researches, Liang and Huang (1998) developed seven variables, which measure the shopper's perception on the convenience of transaction in Internet shopping (Table 1).

Transaction Process Model

In this research, a model was developed based on the seven-step process model (Figure 1) to find factors that may affect a customer's decision to purchase from electronic stores. The transaction cost is decomposed to seven stage variables to measure the overall transaction in Internet shopping. These variables included: *Convenience of product search (SE)*, *Convenience of product comparison (CP)*, *Convenience of product examination (PE)*, *Convenience of negotiating with vendor (NV)*, *Convenience of order (PO)* and *payment (PA)*, *Convenience of getting delivery (RP)* and *Convenience of getting post purchase service (AS)*.

Table 1. Seven-Step Transaction Process Model

Seven Step Process	Definition
Search	Search for relevant product or service information
Comparison	Compare prices or other attributes
Examination	Examine the products to be purchased
Negotiation	Negotiate terms, e.g., price, delivery time, etc.
Order and Payment	Place an order and pay for it
Delivery	Delivery of products from the seller to the customer
Post-service	Customer service and support

Source: Liang, T., and Huang, J., "An Empirical Study on Consumer Acceptance of Products in Electronic Markets: A Transaction Cost Model, Decision Support Systems No. 24 (1998): 29-43

Diffusion of E-Commerce

The adoption of e-commerce or Internet shopping is not restricted to the developed countries such as the U.S. and Canada. The rapidly advancing global information infrastructure, information technology, computer networks, and telecommunication systems, enables the development of e-commerce for every corner of the world (Cohen, 1999; Agarwal, 1999; Kibati and Krairit, 1999).

As mentioned earlier, the results of the Global Internet Trends report also showed that the US and Canada still account for the largest proportion of the world's Internet access with 41% of the global audience located in those countries. Europe, the Middle East, and Africa have the second highest proportion of access with 27% of the world's Internet population, followed by Asia Pacific with 20% and trailed by Latin America with 4%. However, the latest estimated figures of the number of people online in

each language zone shows that non-English online populations are taking greater part in global Internet society. According to the research by Commerce.Net (2001), 68% of online users will be outside of North America by 2005.

In the Asia Pacific region, South Korea dominates in terms of the number of households with home Internet access, accounting for 45% of the number of households with home-PC access in that region. Together, South Korea, Taiwan, and Australia account for 86% of the total number of people with home PC Internet access in that region (Nielsen//Net Ratings, 2001). South Korea also ranked first in terms of the Internet activity among five Asian developing countries, including Taiwan, Hong Kong, Singapore, and China (NetValue.com, 2001). Multiple reports also have confirmed that South Koreans are the most active and sophisticated Internet users in the world. According to NetValue.com an Internet usage measurement company, Koreans were reported to spend an average of 18.1 hours a month on the web, a user time that ranks them number one in the world. The report also says that users in the UK and the US are the most interested in visiting e-commerce websites with 74.3% and 73.1% of their Internet users shopping online. South Korea follows the U.S. with 66.4%, which is the highest rate among Asian countries.

Conceptual Framework of the Study

A conceptual framework of the study was developed to investigate the behavior of Internet shoppers. The relationships described by the theory of reasoned action (Adjen and Fishbein, 1980) and other studies of information user satisfaction were used to develop the model of the Internet user’s behavior in an Internet shopping environment. The external variables were collected from seven step process model and used in this model as external variables as specified on Figure 1.

Attitude is defined as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (Eagly and Shicken, 1993). Attitude in this model included Internet user’s perception on Internet shopping caused by convenience of transaction in Internet shopping processes.

Subjective norm refers to “the person’s perception that most people who are important to him think he should or should not perform the behavior in question” (Fishbein and Ajzen, 1975). Subjective norm in this model can be distinguished for the Internet shoppers in two different groups –experienced and inexperience Internet shoppers.

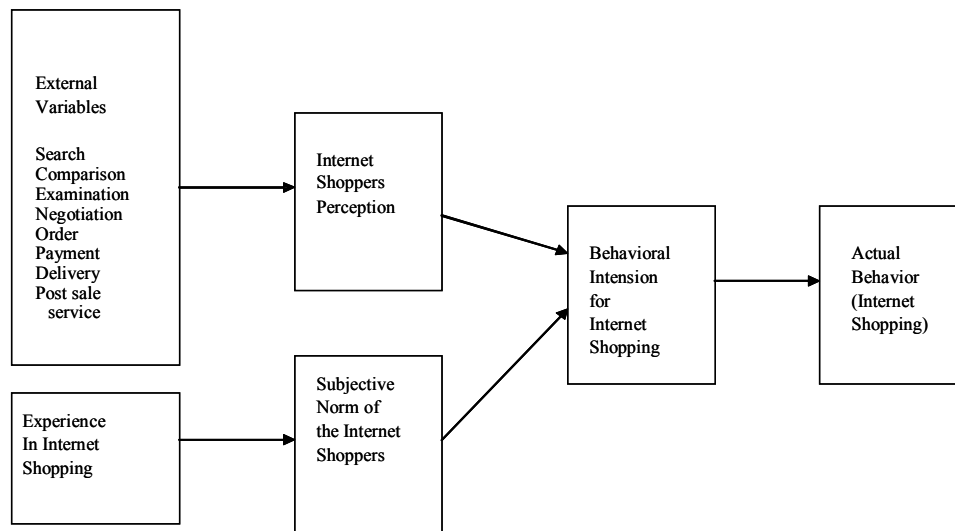


Figure 1. Conceptual Model of the Study

Development of Research Hypotheses

Internet shopping provides consumers with opportunities to search products with relaxed time and without location constraints. Therefore, Internet shopping can have a significant difference with traditional shopping environment. This study tests the differences of perceptions between two different groups of users with more and less Internet shopping experience. The idea of

categorizing shoppers based on their attitudes toward shopping was initially proposed by Stone (1964). By observing 150 females, he suggested that there were four groups of shoppers with different attitudes toward shopping. Based on the method suggested by GVU study, the sample was classified into experienced and inexperienced Internet buyers. The perception of variables in Internet shopping is not expected to be the same for experienced and inexperienced buyers, since the Internet experience may impact the perception of variables in Internet shopping. This may provide the information needed to understand non-frequent Internet buyers who have the potential to be future Internet purchasers.

Based on the idea that experienced Internet shoppers are expected to be different from Inexperienced Internet shoppers on the perception of Internet shopping, seven major hypotheses were developed.

H₁: There are no differences between experienced Internet shoppers and inexperienced Internet shoppers in terms of their perception on the convenience of product search in Internet shopping.

H₂: There are no differences between experienced Internet shoppers and inexperienced Internet shoppers in terms of their perception on the convenience of product comparison in Internet shopping.

H₃: There are no differences between experienced Internet shoppers and inexperienced Internet shoppers in terms of their perception on the convenience of the product examination in Internet shopping.

H₄: There are no differences between experienced Internet shoppers and inexperienced Internet shoppers in terms of their perception on the convenience of negotiating with the vendor in Internet shopping.

H₅: There are no differences between experienced Internet shoppers and inexperienced Internet shoppers in terms of their perception on the convenience of ordering product in Internet shopping.

H₆: There are no differences between experienced Internet shoppers and inexperienced Internet shoppers in terms of their perception on the convenience of paying for the product in Internet shopping.

H₇: There are no differences between experienced Internet shoppers and inexperienced Internet shoppers in terms of their perception on the convenience of receiving a product in Internet shopping.

H₈: There are no differences between experienced Internet shoppers and inexperienced Internet shoppers in terms of their perception on the convenience of getting after sale service in Internet shopping.

Research Methodology

The Sample

Making a survey on the Internet users presents a unique problem. At the heart of the issue is the methodology used to collect responses from individual users. Since there is no central registry of all Internet users, to contact every user of the Internet is neither practical nor feasible financially. As such, surveys attempt to answer questions about all users by selecting a subset of users to participate in the survey.

In order to reach to a proper subset of Internet shoppers, 206 experienced and inexperienced Internet shoppers were chosen from university students in the college of business at southern universities. Selecting sample out of university students were used since it is relatively convenient to collect sample in any classroom environment in both countries. Also, the statistics by GVU Center at Georgia Tech. University suggested that the most experienced Internet users were between 21 and 30 years old, which was the age range of most college students. Subjects were all volunteers who were interested in Internet purchase and they were clearly told that their response to these questions would be kept strictly confidential.

Research Instrument

The questionnaire consisted of three parts. First, the seven questions in the first part were designed to ask users' opinion on the variables in the Internet shopping environment. A five-point Likert scale was employed, with "Strongly disagree" on one extreme

and “Strongly agree” on the other. The second part included the questions for dividing experienced and inexperienced Internet buyers. These questions were modified from the questionnaire developed by Charla Mathwick (GVU Center, 1999). The third part included the questions describing Internet shoppers. It examined Internet shoppers’ characteristics with a semantic differential scale (Appendix).

Data Analysis

Three steps were involved in the data analysis for this study. The first step was for distinguishing experienced and inexperienced Internet shoppers. The respondents who show more than 50% percentile on the questionnaires from GVU study were classified as experienced Internet shoppers and were used for further analysis. Out of the 206 questionnaires collected, 106 usable samples were selected as experienced Internet buyers. The rate for the experienced buyers was 51.4%. In the second step, descriptive statistics for Internet shoppers were analyzed. Demographics of experienced and Inexperienced Internet shoppers (Table2) and Internet usage characteristics of experienced and Inexperienced Internet shoppers (Table 3) were measured.

Demographics of Experienced and Inexperienced Internet Shoppers

Year. The respondents of experienced Internet shoppers were composed of 50 juniors (47.2%) and 54 seniors (50.9%) whereas those of Inexperienced Internet shoppers were composed of 61 juniors (61.0%), and 38 seniors (38.0%). More experienced buyers were found among senior students than junior students.

Gender. Both respondents from experienced and inexperienced groups included a higher percentage of male than female. The respondents of experienced group were composed of 78 men (73.6%) and 28 women (26.4%) whereas those of inexperienced group were composed of 54 men (54.0%) and 46 women (46.0%). Experienced Internet shoppers group showed more percentage of men than those of inexperienced shoppers.

Employment. Among the experienced respondents, 51.8% showed that they are employed by any means whereas 56% of inexperienced respondents were employed by part time or full time. As far as this sample showed, employment is not an important factor for distinguishing experienced and inexperienced groups.

Availability of local retail stores. Twenty six percent (n=28) of the experienced respondents had enough retail stores in their town. In contrast to that, 39% of the inexperienced respondents had enough retail stores around where they live. This result suggest that shoppers don’t be attracted by internet if they have enough local retails shops around where they live.

Internet Usage Characteristics of Experienced Internet Shoppers

Prime Internet access location. Both experienced and inexperienced Internet buyers showed that they mostly did Internet shopping in their home. 77.4% of experienced Internet buyers used their home computers for shopping. In contrast, 49.0% of inexperienced Internet shoppers used their home computers for Internet shopping. Only 8% of experienced participants used their school facility for accessing to the Internet. In contrast to that, 27% of inexperienced Internet shoppers used their school facility to access to the Internet.

Internet access speed for Internet shopping: Significantly more experienced Internet shoppers (63.9%) than inexperienced Internet shoppers subscribed to 56.6K on-line services. Only a small portion of inexperienced Internet shoppers (22.0%) subscribed to the service. Most of inexperienced Internet shoppers did not know what method they use to access to the Internet for shopping.

Years on the Internet: The majority of inexperienced Internet shoppers (82.0%) had been shopping through the Internet less than a year. In contrast to that, almost all of the experienced shoppers (80.1%) had been shopping through the Internet at least for more than a year.

Average number of hours staying on line for shopping: The average number of hours each participant staying on line for Internet shopping was somewhere between “less than an hour” and “one to three hours.” 45.3% of experienced buyers were staying on line for less than an hour and 38% of inexperienced counterparts were staying on line respectively. 43.4% of experienced buyers were staying on line for one to three hours once they get on the Internet, and 41.8% of inexperienced buyers were staying on line.

Table 2. Demographics of Experienced and Inexperienced Internet Shoppers

Demographics	Experienced		Inexperienced	
	Frequency	Percent	Frequency	Percent
Year				
Freshman	1	.9	0	0.0
Sophomore	1	.9	1	1.0
Junior	50	47.2	61	61.0
Senior	54	50.9	38	38.0
Gender				
Female	28	26.4	46	46.0
Male	78	73.6	54	54.0
Employment				
Full Time	10	9.4	3	3.0
Part Time	45	42.4	53	53.0
Not Employed	51	48.2	44	44.0
Availability of Local Retail Outlets				
Yes	28	26.4	39	39.0
No	78	73.6	61	36.0

Average amount of money spent for shopping through Internet: The average amount of money spent by shoppers was between \$10 and \$99 for experienced Internet buyers. 67.9% of experienced buyers and 16% of inexperienced buyers were answered for spending between \$10 and \$99 per transaction. Significantly more percentage of experienced respondents (27.4%) – 4% for inexperienced respondents - were answered that they are spending more than \$100 per shopping.

Factor Analysis

Before comparing the variables explaining the differences of the perceptions of Internet shoppers, factor analysis was utilized. The objective of factor analysis is to determine if the variables could be grouped or reduced to fewer factors. A principal axis factoring with varimax rotation extracted the underlying dimensions of variables. To determine the optimum number of factors, the scree plot test was used.

However, the results of factor analysis tended to show no possible groups in the variables of experienced group and inexperienced group.

Lambda Statistics

The first test performed were the lambda statistics that test whether any of the dependent variables vary significantly according to the groups. The implication of the lambda statistic was that the smaller the value of the lambda statistic, the greater the implied statistical significance between the group centroids. Wilks’ Lamda test, Rao R test, Pillai-Bartlett Trace test, and V agree test with appropriate degrees of freedom and p-level indicated that the null hypothesis of the equality of the group means had been rejected at the 0.05 level of significance (p-value > 0.001). These results of MANOVA indicated that two groups are significantly different in their perception on each variable in the group (Table 4). Experienced and inexperienced Internet shoppers were significantly different in their perception on the convenience of Internet shopping.

ANOVA

Analysis of variance (ANOVA) was used to examine whether there were significant differences between these two groups in terms of their perception on convenience of transaction in Internet shopping. Thus, one-way ANOVA for single non-metric independent variable and two metric dependent variables were performed for those three groups. The two buyer groupss represented the non-metric independent variable, and convenience of transaction variables represented metric dependent variables for each analysis. Each of ANOVA tested the null hypothesis that there were no differences in a perception.

The results of ANOVA tests (Table 5) showed that the null hypothesis of no differences among group means is rejected at the 0.05 level of significance (P-value > 0.0001) for PO, PA, and RP variables. These indicate that there are differences between the Internet shoppers in the two those variables. Compare to inexperienced internet shoppers, experienced Internet shoppers were more likely agree with the idea that ordering, paying, receiving the products on the Internet were easy.

Findings

Internet shopping provides consumers with opportunities to search products with relaxed time and without location constraints. Therefore, Internet shopping can have a significant impact on a traditional shopping environment. The future success of retailing will depend on recognizing the multiplicity of consumer shopping behaviors, as well as identifying methods of satisfying the consumer’s needs in an Internet shopping environment. By analyzing Internet shoppers in two different Internet shopper groups, this study can provide Internet marketers a better understanding of how they are better able to meet consumer’s needs and to develop markets with different cultural backgrounds.

Table 3. Internet Usage Characteristics of Experienced Internet Shoppers

Internet Usage	Experienced		Inexperienced	
	Frequency	Percent (%)	Frequency	Percent (%)
Prime Internet Access Location				
Home	82	77.4	49	49
School	8	7.5	27	27
Work	7	6.6	6	6
Friend’s	5	4.7	5	5
Other	4	3.8	13	13
Access Speed for Internet Shopping				
T1	5	4.8	3	3
T3	5	4.8	4	4
ADSL	1	1.0	0	0
SDSL	0	0	1	1
ISDN	1	1.0	1	1
Cable Modem	8	7.6	7	7
56.6K	67	63.9	22	22
Other	5	4.8	3	3
Don’t Know	13	12.4	59	59
Years on the Internet				
Not At All	1	1.0	57	57
Less than a Year	20	18.9	25	25
1 to 3 Years	77	72.6	18	18
More than 3 Years	8	7.5	0	0
Number of Hours Online				
Don’t Know	4	3.8	47	47
Less than an Hour	48	45.3	38	38
1 to 3 Hours	46	43.4	14	14
More than 3 Hours	8	7.5	1	1
Spending for Internet Shopping				
Zero	1	1.0	66	66
Less than \$10	1	1.0	8	8
\$10-\$99	72	67.9	16	16
\$100-\$499	27	25.5	4	4
\$500 or More	2	1.9	0	0
Don’t Know	3	2.8	6	6

Table 4. Results of the Lambda Statistics

Test	Value	p-level
Wilks' Lambda	.70536	
Rao R	10.28639	.00000
Pillai-Bartlett Trace	.29464	
V	10.28639	.00000

Table 5. ANOVA Results

Dependent Variable	Mean Sqr Effect	Mean Sqr Error	F(DF1, 2)	P-Level
SE	11.62367	1.146238	10.14071	.001678
CP	9.80027	.711549	13.77315	.000266
PE	1.199003	1.118191	1.06424	.303471
NV	3.39315	.953194	3.55977	.060616
PO	28.14874	.547910	51.37479	.000000
PA	33.83917	.745220	45.40829	.000000
RP	18.69944	.654481	28.57140	.000000
AS	8.04342	.576940	13.922225	.000247

Table 6. Summary of Research Findings

Research hypotheses	Expected results	Findings
There are no differences between experience Internet shoppers and inexperienced shoppers in terms of their perception on the <u>convenience of product search</u> in Internet shopping.	Not Supported	Supported
There are no differences between experience Internet shoppers and inexperienced shoppers in terms of their perception on the <u>convenience of product comparison</u> in Internet shopping	Not Supported	Supported
There are no differences between experience Internet shoppers and inexperienced shoppers in terms of their perception on the <u>convenience of the product examination</u> in Internet shopping.	Not Supported	Supported
There are no differences between experience Internet shoppers and inexperienced shoppers in terms of their perception on the <u>convenience of negotiating with the vendor</u> in Internet shopping.	Not Supported	Supported
There are no differences between experience Internet shoppers and inexperienced shoppers in terms of their perception on the <u>convenience of ordering product</u> in Internet shopping.	Not Supported	Not Supported
There are no differences between experience Internet shoppers and inexperienced shoppers in terms of their perception on the <u>convenience of paying for the product</u> in Internet shopping.	Not Supported	Not Supported
There are no differences between experience Internet shoppers and inexperienced shoppers in terms of their perception on the <u>convenience of receiving a product</u> in Internet shopping.	Not Supported	Not Supported
There are no differences between experience Internet shoppers and inexperienced shoppers in terms of their perception on the <u>convenience of getting after sale service</u> in Internet shopping.	Not Supported	Supported

The results of ANOVAs indicated that experienced and inexperienced Internet buyers were significantly different in their perception on three of variables identified – convenience of ordering product, convenience of paying for the product, and convenience of receiving product (Table 6). The F-values on the ANOVA table indicated there were differences between the Internet shoppers in the two groups in those variables. Compared to inexperienced shoppers, experienced Internet shoppers were more likely to agree with the idea that the service such as order process, payment process, and delivery process, performed by internet sellers was quite satisfactory.

However, the services such as negotiating with vendor (NV), and after sale service (AS) did not make any difference in the perception of internet shoppers. Especially, experienced internet shoppers turned out to be less favorable for NV variable. After experiencing internet shopping, shoppers did not find any convenience in negotiating with vendors through internet. Even though experienced internet shoppers showed slightly high favor for three variables such as convenience of product search, convenience of product comparison, and convenience of the product examination, ANOVA showed no differences in the perception of internet shoppers among group means.

Conclusions

The results of the study were expected to show how some of verified variables would affect the user perception in Internet shopping. Therefore, the findings of this study can provide useful insights for both the academic and practitioner community. For the IS research community, this study may suggest several opportunities for further research into the variables which impact Internet user satisfaction. For practitioners, this study can help Internet shopping firms to develop better marketing platforms and strategies, which promote Internet shopping for customers with different cultural backgrounds.

There are several limitations to this study. First, the respondents used might not include the actual Internet shoppers in both countries. Even though GVU study suggested that the most experienced Internet users were between 21 and 30 years old, college students might not include the entire population of Internet shoppers. To fully understand the characteristics of the Internet shoppers, future research is needed to include more variety of age groups.

Second, demographic influences were excluded to predict the Internet shopping behavior. Individual influences, such year, employment, availability of local retail outlets and Internet usage variables are not examined in this study. Year, employment and availability of local retail outlets were significant demographics differentiating Internet shoppers. Compared to U.S. Internet shoppers, Korean shoppers had fewer years in the college, were less employed, and had more available local retail outlets. These demographic differences were predictable since most of Korean state universities were located in urban area unlike state universities in the U.S. These differences could have distorted the results of the study.

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