

# 인터넷 구매 빈도의 영향 요인 분석

## Factors Affecting Internet Purchasers' Buying Frequency

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### <Abstract>

이 연구는 인터넷 소비자들의 행동에 관한 연구의 일부로, 인터넷 구매자들의 구매 빈도와 그들의 인터넷에 대한 태도, 구매 동기, 인터넷 사용, 인구통계적 특성과의 관계를 살펴 보았다. Georgia Institute of Technology의 Graphic, Visualization and Usability Center에서 실시된 설문조사를 통해 수집된 자료를 요인분석과 회귀분석을 이용하여 분석하였다. 분석 결과, 인터넷 쇼핑에 대한 소비자들의 태도(상대적 잇점, 안전성), 인터넷 판매자에 대한 소비자들의 태도(고객 서비스), 인터넷 브라우징 빈도, 소득, 교육이 인터넷 구매자들의 구매 빈도에 유의한 영향을 미치는 것으로 나타났다.

**주제어(Key Words):** Internet, Internet shopping, Internet purchasing frequency

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## I. Introduction

In recent years, Internet shopping, a form of nonstore retailing, has grown substantially. Internet shopping provides convenient access to information that enhances consumer decision-making. It also provides sellers an opportunity to increase market share. Because Internet users are increasing substantially and consumers are using the Internet to make purchases, many companies are engaged in marketing using the Internet as an advertising medium, as well as a promotional, transactional, selling or information tool.

Although many researchers investigated Internet shoppers, their research was focused on finding out who Internet shoppers were in terms of their demographic characteristics, Internet usage and other characteristics. Another area of interest was identifying what factors were affecting consumers' Internet shopping behavior (Cho, Lim, & Lee, 2001; CyberAtlas, 1998; FIND/SVP, 1998; Hong, 2002; IDC, 1998; Miller, 1996, O'Reilly and Associates, 1995, Pitkow & Recker, 1994; Pitkow & Kehoe, 1995). However, the relationship between purchasing frequency and consumers' characteristics is not widely investigated. Therefore, the objective of our study was to examine relationships among consumers' individual characteristics and their Internet purchasing frequency.

## II. Literature Review

### 1. Theoretical Background

Engel, Blackwell, and Miniard's model (1995) of

the consumer decision process is useful for understanding consumers' decision-making in nonstore shopping. From the model two main factors--environmental influences and individual characteristics-- influence the purchase stage. Environmental influences include: a) culture; b) social class; c) personal influence; d) family; and e) situation. Individual characteristics include a) consumer resources; b) motivation/involvement; c) familiarity/knowledge; d) attitudes; e) personality/values/lifestyle; and f) demographics. Although both of these factors have relevance in explaining Internet shoppers' purchasing frequency, we focused on individual differences.

Based on Engel, Blackwell, and Miniard's (1995) model and previous literature, a conceptual framework of individual characteristics and Internet shopping was developed to understand Internet shopper frequency. The four predictors used to explain Internet shopping frequency were: a) attitudes; b) motivations; c) Internet usage; and d) demographics. Attitudes in this model included Internet user attitudes about Internet shopping and Internet retailers. Motivations for using the Internet were convenience and time-saving. Internet usage included the number of years Internet users had used the Internet and their frequency of Internet browsing. Demographics included age, sex, education level, and income of participants.

### 2. Internet Shopping

Electronic shopping includes media such as interactive media (e.g., videotex), television, and online computers. Among these media, the World Wide Web (WWW or Web), an Internet service that organizes information using hypermedia,

emerged to possess the greatest potential for marketing.

The Internet has several positive characteristics for commercial use: (a) the ability to store vast amounts of information inexpensively at different virtual locations; (b) the availability of a powerful and inexpensive means of searching, organizing, and disseminating information; (c) the interactivity and ability to provide information on demand; (d) the ability to serve as a transaction medium which provides efficiency; (e) the ability to serve as a physical distribution medium for certain goods, such as software; (f) relatively low entry and establishment costs for sellers; (g) the ability to provide perceptual experiences that are better than catalogs; and (h) the convenience (Alba, Weitz, Janiszewski, Lutz, Sawyer, & Wood, 1997; Maignan & Lukas, 1997; Metha & Sivadas, 1995; Peterson, 1997; Peterson, Balasubramanian, & Bronnenberg, 1998; Rosen & Howard, 2000). Given these characteristics, especially the visual potential, the Internet may well be the catalog of the future.

However, there are also deterrents to commercial use of Internet: (a) cost of delivery and return; (b) high cost for site construction, site maintenance, advertising, distribution, shipping, and customer service; differentiation of site from other stores; (c) possible channel conflicts with previous distributors; (d) lack of social interaction and physical examination of products; and (e) consumer data privacy issues (Rosen & Howard, 2000).

### **3. Internet Shopper Characteristics and Factors Affecting Internet Shopping Behavior**

Researchers who have examined current

Internet users limited themselves to describing users based primarily on demographic characteristics and their Internet usage. While the demographics of the Internet users are shifting, demographic characteristics of individuals are still correlated with their Internet use. Males are generally more likely than females to use the Internet, people with higher socioeconomic status are likely to use the Internet, and Caucasians are likely to use the Internet (CyberAtlas, 1998; FIND/SVP, 1998; Miller, 1996; Rosen & Howard, 2000).

Researchers have investigated factors affecting Internet shopping behavior in various ways. Lohse and Spiller (1999) identified features that impact store traffic and sales. These were: number of links into the store, hours of promotional ads, number of products, and store navigation. Among these features the user interface was an essential link between the customer and the retail store in Web-based shopping environments. Szymanski and Hise (2000) examined the role that consumer perceptions of online convenience, product offerings and product information, site design, and financial security had on Internet consumers. They found that convenience, site design, and financial security were significant factors in consumers' "e-satisfaction." Li, Kuo, and Russell (1999) found that education, convenience orientation, experience orientation, channel knowledge, perceived distribution utility, and perceived accessibility were predictors of whether individuals were frequent online buyers, occasional online buyers, or non-online buyers. Swaminathan, Lepkowska-White, and Rao (1999) examined factors influencing buying among Internet users. They found that reliability of a vendor, convenience of

placing orders and contacting vendors, price competitiveness and access to information had a positive influence on the number of purchases made using the Internet. However, these characteristics did not influence the amount of money spent on the Internet. Convenience seeking consumers tended to use the Internet to purchase items frequently and they tended to spend high amounts of money. On the other hand, social interaction seeking consumers tended to use the Internet to purchase items less frequently. Consumers who spend using the Internet tend to believe that marketers do not need information about them to market their products.

#### 4. Hypothesis

Based on the literature review, the following hypotheses were postulated:

- H1. There are no relationships between the Internet purchasing frequency and Internet purchasers'
  - H1a. Attitudes about Internet shopping
  - H1b. Attitudes about Internet retailers
- H2. There are no relationships between the Internet purchasing frequency and Internet purchasers'
  - H2a. Convenience motivation
  - H2b. Time-saving motivation
- H3. There are no relationships between the Internet purchasing frequency and Internet purchasers'
  - H3a. Number of years on the Internet
  - H3b. Internet browsing frequency
- H4. There are no relationships between the Internet purchasing frequency and Internet purchasers' demographic characteristics

(income, educational level, age, sex)

### III. Method

#### 1. Sampling and Data Collection

Data were obtained from an Internet survey<sup>1)</sup> conducted by the Graphic, Visualization, & Usability (GVU) Center from Georgia Institute of Technology. Survey was posted on the Internet and participants responded to the survey. In this survey, 2,185 Internet users participated.

Although, the Gvu survey is a convenience sample, participants were solicited by various ways in order to expose the survey to as many Internet users as possible. These were: (a) announcements on Internet-related newsgroups; (b) banners placed on specific pages in high exposure sites; (c) banners randomly rotated through high-exposure sites; (d) announcements made to the WWW-survey mailing list, which is maintained by Gvu's WWW User Surveys and is composed of people interested in these surveys; and (e) announcements made in the popular media (Pitkow & Kehoe, 1997; Rogers, 1998).

First, participants were asked to register with the survey by providing an identifier and by filling out the questionnaire by pointing and clicking on the desired responses. In the survey, participants were asked to complete at least two sections of the questionnaire including general information and Internet usage.

1) This survey, conducted from April 10 to May 10, 1998, was its ninth World Wide Web (WWW) User Survey since 1994.

## 2. Questionnaire

### 1) Instrument

The GVV WWW User Survey was composed of 12 different parts. There was a basic section that included six separate questionnaires concerning general demographics, technology demographics, Web and Internet usage, software filters/content rating, beliefs about society, and privacy. There was an electronic commerce section, including four separate questionnaires concerning Internet shopping (parts I, II), Internet banking, and Web attitudes. The Internet shopping questionnaire was designed to investigate: (a) consumers' opinions about using the WWW for shopping, as compared to other means of shopping, and their opinions about Web-based vendors (retailers), compared to vendors from other forms of shopping; (b) how consumers browse for goods/service offerings; (c) how consumers search for product information; (d) how consumers make online purchases; (e) how consumers interact with Web-based vendors after making purchases; (f) consumers' perceptions concerning security issues; and (g) consumers' perceptions about WWW vendors. There was also a special section, including two separate questionnaires concerning cultural issues in Web design and Webmastering. Out of these 12 parts, participants were asked to complete at least the general information and Web usage items.

Among these 12 questionnaires, the dataset from the Internet shopping questionnaires<sup>2)</sup> (parts I and II) in the electronic commerce section and general demographics, and web and Internet usage questionnaire in a basic section were downloaded from the Internet and were merged into one data file based on subject ID number. All cases where

ID number could not be matched were excluded from the data analysis and the cases having any discrepancies on their responses were also excluded. This process produced 1,055 cases<sup>3)</sup>. Then, only respondents who had purchased on the Internet were included. This process resulted in 899 respondents.

### 2) Measures of Variables

#### (1) Attitudes about Internet shopping.

Internet users' attitudes about Internet shopping were measured with 34 questions (See Table 2). Responses to these questions were recorded on five-point scales ranging from "strongly disagree"(1) to "strongly agree"(5).

#### (2) Attitudes about Internet retailers.

Consumers' attitudes about Internet retailers were measured with 16 questions (see Table 3). Responses were recorded on five-point scales ranging from "strongly disagree"(1) to "strongly agree"(5).

#### (3) Motivations.

The convenience and time-saving motivations were measured with the question, "What are the main reasons you used the Web when purchasing products/services?"<sup>4)</sup> Subjects selected "yes" or "no" to the items of "saving time" and "convenience."

2) Fred Riggins and Sue Rhee from Georgia Institute of Technology developed the electronic commerce questionnaires based on previous research.

3) This is a part of a large study concerning Internet consumers' shopping behavior. Therefore, 1055 cases were used for factor analyses to develop variables for this study. For the regression analysis, 899 cases were used.

4) In the survey, motivations were measured with the question,

## (5) Internet usage.

Years on the Internet was measured with the question, "How long have you been on the Internet?" Browsing frequency was measured with the question, "On average, how often do you casually browse the product of service offerings of Web-based vendors, but without an immediate intent to buy?"

## (6) Demographic characteristics.

Participants' were asked to indicate their age, sex, income, education level, and location

## IV. Data Analysis and Results

### 1. Internet Purchaser Characteristics

The Statistical Package for the Social Sciences (SPSS) was used to analyze the data. Descriptive statistics were used to illustrate characteristics of the sample (See Table 1).

### 2. Preliminary Factor Analysis and Results

#### 1) Attitudes about Internet Shopping

Prior to final data analysis, factor analysis was conducted on attitudes toward Internet shopping and Internet retailers. In order to determine whether factor analysis is appropriate to use, a correlation matrix of all 34 items, a Scree-test plot, Bartlett's test of sphericity<sup>5)</sup>, and Kaiser-Meyer-Olkin's Measure of Sampling Adequacy (MSA)<sup>6)</sup> were performed. Based on the results, it was determined that factor analysis was appropriate.

Principal Axis Factoring, with varimax rotation

<Table 1> Purchasers: Demographic characteristics (n=899)

Characteristics	Frequency	Percent
<b>Age</b>		
Less than 20	52	5.8
21-30	275	30.6
31-40	228	25.4
41-50	190	21.1
51 or more	151	16.8
<b>Sex</b>		
Male	557	62.0
Female	342	38.0
<b>Household Income</b>		
Under \$10,000	46	5.1
\$10,000-\$19,000	65	7.2
\$20,000-\$29,000	77	8.6
\$30,000-\$39,000	118	13.1
\$40,000-\$49,000	112	12.5
\$50,000-\$59,000	109	12.1
\$60,000-\$69,000	80	8.9
\$70,000-\$79,000	69	7.7
\$80,000-\$89,000	53	5.9
\$90,000-\$99,000	23	2.6
over \$100,000	147	16.4
<b>Education</b>		
No college	71	7.9
Some college	303	33.7
College	293	32.6
Post college	225	25.0
<b>Location</b>		
America (USA, Canada, Mexico)	804	89.4
Europe	62	6.9
Other (Asia, Africa, Oceania)	33	3.7
<b>Occupation</b>		
Professional	177	19.7
Computer related	218	24.2
Student	105	11.7
Management	107	11.9
Self-employed	67	7.5
Educator	46	5.1
Administrative support	36	4.0
Homemaker	33	3.7

Note. Total may not be equal to 100% due to non-responses.

"What are the main reasons you used the Web when purchasing products/services?" This question was only directed to Internet purchasers. These Internet purchasers selected "yes"(1) or "no"(0) to the items of "availability of

using the minimum eigenvalue of one as the criterion to control the number of factors extracted, was chosen as the method for estimating the factors. Based on the Scree-test plot, it was determined that five factors were to be extracted. The resulting factors were used as scales, to measure the different components of the participants' attitudes about Internet shopping. Twenty statements were retained comprising five scales. Factor loadings ranged from .50 to .85, the total percentage of variance was 56.55%, and Cronbach's alpha coefficients for the five scales

ranged from .90 to .72. These five attitude scales were labeled as relative advantage, safety, ease,

information from vendors," "access to opinions of other customers," "reviews and recommendations from experts," "saving time," "convenience," "no pressure from sales people," and "personalized information based on customer profile". Among these questions, the convenience and time-saving motivations were included for further analysis.

- 5) A test statistic of 14,604 was obtained and was significant at the .001 level.
- 6) A statistic of .94 was obtained from MSA. Based on the calibration offered by Kaiser and Rice(1974) an MSA over .80 is considered "marvelous."

<Table 2> Factor analysis of Internet users' attitudes about Internet shopping

Factor	Item	Factor loading	Eigenvalue	% of explained variance	Cronbach's alpha
<u>Relative advantage</u>					
	Shopping over the WWW would increase my shopping.	.77	4.35	21.77	.90
	Shopping over the WWW would enhance my effectiveness at shopping.	.75			
	Shopping over the WWW would give me greater control over my shopping.	.72			
	Shopping over the WWW fits into my shopping style.	.66			
	Shopping over the WWW would improve my shopping abilities.	.65			
	Shopping over the WWW would allow me to do my shopping more quickly.	.61			
	Shopping over the WWW would allow me to have better item selection in my shopping.	.54			
	Shopping over the WWW would be compatible with all aspects of the way I shop.	.54			
	Shopping over the WWW would allow me to get better prices.	.50			
<u>Safety</u>					
	Shopping over the WWW would be a safe way to shop.	.80	2.82	14.10	.88
	I would trust online vendors enough to feel safe shopping over the WWW.	.77			
	Shopping over the WWW would be very risky.	-.75			
	I would trust an Internet service provider with transmitting personal information necessary for me to shop over the WWW.	.66			
<u>Ease</u>					
	Overall, I believe that shopping over the WWW would be easy to do.	.69	1.58	7.91	.71
	Shopping over the WWW would be clear and understandable.	.57			
	Learning to shop over the WWW would be easy for me.	.51			
<u>Prestige</u>					
	Shopping over the WWW would improve my image with those around me.	.73	1.35	6.74	.76
	Shopping over the WWW would be compatible with all aspects of the way I shop.	.71			
<u>Observability</u>					
	I have had plenty of opportunity to see others shopping over the WWW.	.85	1.21	6.03	.72
	It is easy for me to observe others shopping over the WWW.	.65			

prestige, and observability (see Table 2). Factor scores were calculated for further analysis.

## 2) Attitudes about Internet Retailers

Factor analysis was used to reduce 16 items into a smaller number of items. In order to determine whether factor analysis was appropriate to use, a correlation matrix of all 16 items, a Scree-test plot, Bartlett's test of sphericity<sup>7)</sup>, and Kaiser-Meyer-Olkin's Measure of Sampling Adequacy (MSA)<sup>8)</sup> were performed. Based on the results, it was determined that factor analysis was appropriate.

Principal Axis Factoring, with varimax rotation using the minimum eigenvalue of one as the criterion to control the number of factors extracted, was used. Based on a Scree-test plot, two factors were determined appropriate for extraction. Twelve items were retained for two scales. Factor loadings ranged from .50 to .74, the total percentage

of variance was 39.62%, and Cronbach's alpha coefficients ranged from .81 to .76. These two attitude scales about Internet retailers were labeled as follows: information and customer service (See Table 3). Factor scores were calculated for further analyses.

## 3. Final Analysis and Results

### 1) Regression analysis

By designating the frequency of Internet purchasing as the dependent variable in a regression equation, the following variables were evaluated: two types of attitudes (five attitude

7) A test statistic of 5,109.88 was obtained and was significant at the .001 level.

8) A statistic of .89 was obtained from MSA. Based on the calibration offered by Kaiser and Rice(1974) an MSA over .80 is considered "meritorious."

<Table 3> Factor analysis of Internet users' attitudes about Internet retailers

Factor	Item	Factor loading	Eigenvalue	% of explained variance	Cronbach's alpha
<b>Information</b>			2.65	22.05	.81
	I can quickly gather information about products and services I wish to purchase from Web-based vendors.	.69			
	I can gather more information from Web-based vendors about an item I want to purchase.	.68			
	It is easier to compare similar items between different Web-based vendors.	.60			
	Web-based vendors are better at providing me with easy access to the attitudes of experts about products I wish to purchase.	.59			
	It is easier to find a Web-based vendor that sells the items I wish to purchase.	.58			
	Web-based vendors are better at providing information about updates on products I've purchased.	.54			
<b>Customer service</b>			2.11	17.57	.76
	Web-based vendors deliver orders/services in a more timely manner.	.70			
	It takes longer to receive items purchased from Web-based vendors.	-.56			
	Web-based vendors provide better customer service and after-sales support.	.54			
	It is easier to place orders with Web-based vendors.	.53			
	Paying for an item purchased is easier with Web-based vendors.	.51			
	Returns and refunds are easier with Web-based vendors.	.50			



scales about Internet shopping, two attitude scales about Internet vendors), two types of Internet usage (years on the Internet, browsing frequency), two types of motivations (convenience, saving time), and four demographic characteristics (sex, income, age, education level).

Regression analysis was used to examine whether the independent variables were predictors of Internet shoppers' purchasing frequency. Because the emphasis of our research was on theory development rather than on theory testing, the stepwise method of regression analysis was used. The criteria were set at PIN (Probability of F-To-Enter) = .05 and POUT (Probability of F-To-Remove) = .1. A Pearson correlation matrix of variables was obtained. Since any large correlations between the independent variables can affect the results of the multiple regression analysis, the matrix was examined for correlations greater than .70. All of the Pearson correlations were less than .50, indicating that there were no predictor variables that were strongly associated with one another; thus, all predictor variables were included in the regression analysis.

2) Results

The multiple regression results are shown in <Table 4>. The coefficient of the multiple correlation (R) for this equation was .395. The square of this correlation coefficient (R<sup>2</sup>) was .156, which indicated that 15.6% of the variation in the dependent variable was explained by the seven predictor variables.

**Hypothesis 1:** Two of the five attitudes about Internet shopping were significant predictors of Internet purchasing frequency. These were relative advantage and safety. Internet purchasers, who

perceived Internet shopping as safe and as having relative advantages purchased frequently on the Internet. Therefore, H1a was partially rejected. One of the two attitudes about Internet vendors was a significant predictors of Internet purchasing frequency. Internet purchasers' attitude about Internet vendors' customer service was significantly related to purchasing frequency. Therefore H1b was partially rejected.

**Hypothesis 2:** In terms of motivation, Internet

<Table 4> Results of multiple regression analysis of Internet shopping frequency.

Coefficient Independent variable	B	Std. Error	Beta	t
<b>Attitudes about Internet Shopping</b>				
Relative advantages	.140	.023	.203	6.05***
Safety	.109	.023	.153	4.83***
Ease			.011	.35
Prestige			.051	1.62
Observability			-.047	-1.52
<b>Attitude about Internet Vendors</b>				
Information			.058	1.65
Customer service	.056	.022	.082	2.51*
<b>Motivations</b>				
Convenience			-.002	-.06
Saving time			.048	1.49
<b>Internet Usage</b>				
Browsing frequency	.081	.014	.190	.94***
Years on the Internet			-.007	-.20
<b>Demographic Characteristics</b>				
Age			.062	1.90
Sex			-.004	-.11
Income	.015	.006	.082	2.59**
Education level	.052	.017	.099	3.09**
(Constant)	.820	.112		7.31***
<b>Model Summary</b>				
R	.395			
R <sup>2</sup>	.156			
Adjusted R <sup>2</sup>	.151			
Standard error of the estimate	.522			

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

users' convenience and time-saving motivations were not significantly related to Internet purchasing frequency. Therefore, hypotheses H2a and H2b were not rejected.

**Hypothesis 3:** In terms of Internet usage, Internet purchasers' number of years of on the Internet was not related to Internet purchasing frequency. Therefore H3a was not rejected. However, Internet purchasers' Internet browsing frequency was positively related to their Internet purchasing frequency. Internet purchasers who browsed the Internet tended to purchase merchandise frequently using the Internet. H3b was rejected.

**Hypothesis 4:** In terms of demographics, Internet purchasers with high incomes purchased items more frequently on the Internet than those with low incomes. Internet purchasers reflecting high education levels purchased items more frequently on the Internet than those reflecting low education levels. Age and sex were not related to Internet purchasing frequency. Therefore, H4 was partially rejected.

Given that these variables were significant, we wanted to determine the best predictor of Internet purchasing frequency. Since the predictor variables in this analysis were not based on the same measurement scale, the regression coefficients could not be compared directly against one another to determine which predictor variable was the best. Beta, which is the coefficient of the independent variables when all variables are expressed in standardized form (Norusis, 1992), was used to assess the relative importance of the variables. Holding the attitude that Internet shopping had relative advantages was the best predictor of Internet purchasers' purchasing frequency, followed by attitudes concerning safety.

## V. Conclusions and Discussion

Of the variables under investigation, there were four that were statistically significant. The first one was Internet users' attitudes about Internet shopping. Particularly important were attitudes concerning Internet shopping as providing relative advantage and as being safe. The second variable was attitudes about Internet vendors. Internet users' attitudes about whether Internet vendors provided better customer service than off-line retailers was related to their frequency of Internet purchases. The third is the Internet usage variable. Browsing frequency and years on the Internet were important in predicting Internet purchasing frequency. Lastly, educational level and income were significant in predicting Internet purchasing frequency. Although these variables were statistically significant, the moderate  $R^2$  implies that there may be additional factors that could be useful in predicting Internet purchasing frequency. Other variables including lifestyle orientation, product involvement, shopping orientation, time poverty, level of satisfaction with local retailers, and level of innovativeness are all potential factors that may influence Internet purchasing frequency.

Because of the existing research and our own personal experience, we expected that one of the important determinants of Internet purchasing frequency would be whether Internet users perceived Internet shopping as safe. Internet users who agreed that Internet shopping was a safe way to shop and who thought that Internet vendors were trustworthy did tend to purchase more frequently over the Internet than users who did not. This finding is consistent with existing reports

recognizing consumers' concerns about the risks involved in using credit cards over the Internet and the risks in purchasing items from unfamiliar Internet vendors (Maigan & Lukas, 1997; Maney & Dugas, 1997; Murphy, 1997; Swaminathan, et al., 1999).

Internet users' attitudes about whether Internet vendors provided better customer service than off-line retailers was related to the frequency of Internet purchases. This is consistent with Kunz' (1998) finding that Internet users valued customer service as a reason for doing Internet shopping. Among the variables examined, Internet users' attitudes Internet shopping were more important in predicting Internet purchasing frequency than demographic characteristics.

Even though educational level and income were significant in predicting Internet purchasing frequency, these effects must be interpreted with caution. Since the demographic characteristics of Internet users are changing rather rapidly, there is the possibility that the usefulness of these characteristics as predictors might change rapidly in the future; therefore, educational level and income may not be good predictors in the long term.

Our research has several limitations. Since we used an existing data set, the personal characteristics we were able to investigate were limited to the individual characteristic variables that were included by those who designed the survey instrument. Other individual characteristics (e.g., involvement, lifestyle) and environmental influence variables (e.g., family, culture) may also be useful in predicting Internet shoppers' purchasing behavior. In terms of sampling, since there was no central registry for Internet users, our data does not represent a random sample.

Therefore, there is the possibility that our sample is not representative of all Internet users. In addition, the sample we utilized consists of individuals who visited the GVU Internet survey site and filled out the Internet survey questionnaire. Therefore, the individuals in this sample may be more active Internet users than general Internet users.

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