

Consumer patronage and risk perceptions in Internet shopping

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Abstract

Internet shopping has become the fastest-growing use of the Internet; most online consumers, however, use information gathered online to make purchases off-line. A number of authors have attributed consumers' reluctance to purchase online to apparent barriers; however, such barriers have not been examined within a theoretical context. This study examined the nature of perceived risks associated with Internet shopping and the relationship between types of risk perceived by Internet shoppers and their online patronage behaviors within a perceived risk theoretical framework. The research examined four types of perceived risk that were of concern to Internet shoppers and browsers — financial, product performance, psychological, and time/convenience loss risk, the relationship between the types of risk perceived and selected demographics, and the effect of perceived risks on Internet patronage behaviors. Findings suggest that perceived risk is a useful context to explain barriers to online shopping. A model for examining Internet patronage behavior from a perceived risk framework is proposed; management implications and propositions for future research are also presented.

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1. Introduction

The rapid diffusion of the Internet as a commercial medium has been widely documented (Hoffman and Novak, 1996; Jones and Biasiotto, 1999; Radosevich and Tweney, 1999). Shopping has become the fastest-growing use of the Internet, with about 53% of Internet users reporting shopping as a primary use of the Web (GVU's WWW 9th User Surveys, 1998). Internet-generated revenue is projected to reach US\$226 billion in 2000 and US\$1234 billion in 2002, according to projections by ActivMedia (1999). Although Internet shopping is becoming an accepted way to purchase many kinds of products and services (Donthu and Garcia, 1999), most online consumers are still "window shoppers" in that they use information gathered online to make purchases off-line (eStats, 1998; GVU's 10th WWW User Surveys, 1998). Several authors (Hoffmam et al., 1999; Jacobs, 1997) have attributed consumers' reluctance to purchase online to apparent barriers (e.g., credit card issues, privacy issues). Despite the potential usefulness of this information for improving Internet retailing, such barriers have not been examined within a theoretical context. Thus, the nature of

these barriers and their potential impact on consumers' online patronage behavior are unclear.

Much of the existing literature has focused on the advantages and disadvantages of Internet marketing (e.g., Pallab, 1996). Industry and academic studies have investigated Internet users and shoppers (Henrichs, 1995; Mehta and Sivadas, 1995; Donthu and Garcia, 1999). Still other research has addressed consumers' concerns over privacy and credit card security problems that could result from Internet transactions (Hoffmam et al., 1999; Jacobs, 1997). Two recent studies (Donthu and Garcia, 1999; Tan, 1999) have examined risk aversion among Internet users, but no published study has examined the types of perceived risk associated with Internet shopping. The concept of perceived risk, or a consumer's "subjectively determined expectation of loss" (Mitchell, 1999, p. 168), has been used to explain traditional shopping behavior, in-home shopping behavior (i.e., catalogue shopping) and the risks associated with each media. Surprisingly, perceived risk has not been applied to examinations of online purchasing behavior; but this construct may provide a useful context in which to identify and explain barriers to online shopping. The goal of this exploratory study was to better understand the nature of consumer's perceptions of risks associated with online shopping and the relationship between perceived risk and online patronage behavior.

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Given the rapid growth of the Internet as a new retail medium and the lack of empirical research addressing perceived risk associated with Internet shopping, a number of unanswered questions remain. What types of risk are perceived by Internet shoppers who have bought product/service online, and by browsers who have browsed for but not purchased product/service online to be potential barriers to making purchases on the Internet? Compared with browsers, will Internet shoppers sense different types of risk? How will the types of risks perceived by Internet shoppers influence their Internet patronage? Answers to these questions are necessary to identify consumers' specific concerns about conducting transactions over the Internet and the potential impact of these concerns on their Internet patronage behavior. This exploratory study examined (1) the types of risk perceived in Internet shopping by Internet shoppers and Internet browsers, (2) the relationship between selected demographics and the types of risk perceived, and (3) the impact of perceived risks and demographics on Internet shopping patronage. The following conceptual model (Fig. 1) of the relationship between demographic characteristics, types of perceived risk, and online shopping behavior were used to guide the investigation.

2. Internet shopping and perceived risk

This section examines extant literature on Internet shopping and provides an overview of the perceived risk construct and the types of perceived risk as they currently apply to traditional retailing and as they may be applied to online retailing.

2.1. Internet shopping

The Internet, a well-known and extensive information superhighway, is defined as “a network of computer networks, which is capable of providing virtually instant access

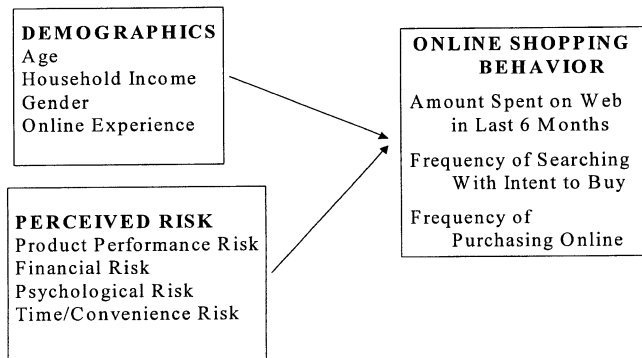


Fig. 1. Conceptual model for effect of types of risk and demographics on online shopping behavior.

to a vast storehouse of information spanning the globe” (Henrichs, 1995, p. 4). The Internet offers consumers not only access to a vast amount of information but also an alternative way of making purchases at home. However, research has found that consumers are doing more information search on the Internet than actual purchasing. Nearly two-thirds of Internet users have used the Internet to research purchases online, but they have yet to buy over the Internet (One-Third of Internet Users Have Made Online Purchases, 1999).

2.1.1. Internet users

Traditionally, Internet users have been well-educated and wealthy men. However, the changing demographics among Internet users suggest that this group is moving from elite to mainstream. With respect to gender, although still male dominated, over 40% of Internet users are women (Caswell, 2000), and women comprise half or more than half of the new users (Weber, 1998; ActivMedia, 1999). Traditionally, about 43% of adult Web users were reported as having a college degree. By comparison, only 29% of adult newcomers to the Web had a college degree or higher (Weber, 1998), indicating increasing Web usage across education levels. Although Web users tend to be wealthier, the trend is toward greater usage by middle-income individuals (Weber, 1998).

2.1.2. Shoppers vs. browsers

Internet users may be classified into Internet shoppers (those who have made purchases on the Internet) and Internet browsers (those who have browsed online for product/service but not made purchases on the Internet). Previous findings have suggested that characteristics of typical Internet shoppers were similar to general Internet users (The Lifestyles of the Online Shoppers, 1999). Online browsing may be defined as viewing online a retail Web site’s merchandise for information and/or recreational purposes without an immediate intent to buy. Store browsing has been found to be related to product interest, product knowledge, product expenditure, purchase satisfaction, and to serve informational, social, and recreational functions (Bloch, Sherrell and Ridgway, 1986; Bellenger and Korgaonkar, 1980). Internet shoppers tend to be well educated and have high levels of income (Donthu and Garcia, 1999). The demographics of Internet browsers are directionally the same as Internet shoppers, but tend to be more mainstream than Internet shoppers (The Lifestyles of the Online Shoppers, 1999).

2.1.3. Benefits of The internet to consumers

The Internet, as the potential shopping mall of tomorrow provides consumers with a number of benefits over traditional retail channels. The Internet stores vast amount of information, serves as a transaction medium, and provides better perceptual experiences than catalogs (Maignan and Lukas, 1997; Peterson, 1997; Peterson et al., 1998).

The Internet allows consumers to browse product/service extensively, collect data, locate information, download information, compare prices, buy products, place/change orders, and receive feedback without travelling to a shopping mall. Consumers can browse or shop online 24 hours a day, 7 days a week, from office or at home. Convenience has been reported as the primary reason for shoppers to shop on the Internet (Wolhandler, 1999). Additional factors such as saving money and time, no transportation cost, more choice, no waiting lines and no pressure from the sales people were also reported to contribute to a more enjoyable shopping experience on the Internet (Wolhandler, 1999; GVU's WWW 9th User Surveys, 1998). Despite the apparent benefits of online shopping, many consumers are still reluctant to shop online. This reluctance may be due to the risks associated with online shopping.

2.2. Perceived risk

Since the 1960s, the theory of perceived risk has been used to explain consumers' behavior. Considerable research has examined the impact of risk on traditional consumer decision making (Taylor, 1974). Consumers are apprehensive when they cannot be sure that purchases will allow them to achieve their buying goals (Cox and Rich, 1964). Perceived risk thus can be considered a function of the uncertainty about the potential outcomes of a behavior and the possible unpleasantness of these outcomes. It represents consumer uncertainty about loss or gain in a particular transaction (Murray, 1991). Cox and Rich (1964) conceptualized perceived risk as "the nature and amount of risk perceived by a consumer in contemplating a particular purchase decision" (p. 33). We define perceived risk in Internet shopping as the subjectively determined expectation of loss by an Internet shopper in contemplating a particular online purchase.

Perceived risk is associated not only with what is acquired but also how or where it is acquired (Hisrich et al., 1972). Consumers perceive risks in most store purchase decisions (Cox, 1967), and higher risk in in-home shopping such as ordering by the telephone or mail (Akaah and Korgaonkar, 1988). Cox and Rich (1964) found the most commonly stated reason for not shopping by telephone was "a fear of not getting what was wanted". Other researchers have found that in-home shopping was considered a high-risk strategy for the following reasons: (1) lack of opportunity to examine products prior to a purchase; (2) difficulties in returning faulty merchandise; and (3) frequent suspicion of business ethics of certain mail-order operations (Spence et al., 1970; Gillett, 1970). Likewise, consumers perceive Internet shopping to have higher risk than in-store shopping (Tan, 1999; Donthu and Garcia, 1999), perhaps for many of the same reasons that have applied to other modes of in-home shopping. To date, there is little empirical evidence to suggest what types of risks are perceived by Internet shoppers or what potential

impact of these risk perceptions have on Internet patronage behavior.

2.2.1. Types of perceived risk

Six components or types of perceived risk have been identified: financial, product performance, social, psychological, physical, and time/convenience loss (e.g., Brooker 1984; Jacoby and Kaplan, 1972; Peter and Tarpey, 1975; Garner, 1986; Mitchell, 1992; Schiffman and Kanuk, 1994). The present research investigated the four types of risk — financial, product performance, psychological, and time/convenience loss that were identified as most prevalent among Internet shoppers (GVU's 10th WWW User Surveys, 1998).

Financial risk is defined as a net loss of money to a customer (Horton, 1976; Derbaix, 1983; Sweeney et al., 1999), and includes the possibility that one's credit card information may be misused. Thus, consumers' apparent sense of insecurity regarding online credit card usage stems primarily from a concern about financial risk. Consumers' unwillingness to provide their credit card information over the Web has been cited as a major obstacle to online purchases (Maignan and Lukas, 1997). Many consumers believe that it is too easy to have a credit card stolen online (Caswell, 2000).

Product performance risk is defined as the loss incurred when a brand or product does not perform as expected (Horton, 1976). Product performance risk may result from a poor product choice due to the shoppers' inability to accurately judge the quality of the product online. The ability to judge product/service quality online may be limited by barriers to touching, feeling, and trying the product or service, inaccurate product colors and insufficient information on quality attributes relevant to the consumer resulting in increased product performance risk.

Psychological risk may refer to disappointment, frustration, and shame experienced if one's personal information is disclosed. The Internet is often perceived as likely to violate users' privacy, a major concern of many Internet users (Maignan and Lukas, 1997; Jacobs, 1997; Benassi, 1999). The feeling of lack of control over the access others may have to their personal information during the online navigation process is a psychological risk that prevents many consumers from providing information to Web providers in exchange for access to information offered onsite (Jacobs, 1997; Hoffmam et al., 1999).

Time/convenience risk may refer to the loss of time and inconvenience incurred due to difficulty of navigation and/or submitting order, finding appropriate Web sites, or delays receiving products. Two leading causes of dissatisfying online experiences that may be thought of as a time/convenience risk include a disorganized or confusing Web site and pages that are too slow to download (GVU's 9th WWW User Survey, 1998). Additionally, potential delays or difficulties in receiving ordered merchandise are a concern for some online shoppers.

3. Methodology

To identify the types of risk perceived by Internet users when considering an online purchase and online patronage behaviors, we examined a data set from a survey by the Graphic, Visualization, and Usability (GVU) Center from Georgia Institute of Technology. The 10th GVV survey collected information over the Web from October 10, 1998 through December 15, 1998 (GVU's 10th WWW User Surveys, 1998). Among the nine questionnaires in the 10th GVV WWW User Survey, two (General Demographics and Finding Product Information and Purchasing) contained questions that can be used to address the research questions in this study. There were over 5000 participants in the first questionnaire and 645 participants in the second questionnaire. The population of this study was Internet users who have access to the World Wide Web. The two data sets were merged into one data file based on subject ID number. ID numbers that could not be matched, or other discrepancies in responses for the two data sets, were excluded from the data analysis, resulting in 641 cases. Regression analysis was run for the two shopper groups to examine the impact of type of risk perceived and demographics on selected online shopping behaviors. We examined the relationship between consumer demographics (gender, age, income, and online experience), types of risk perceived by Internet users (shoppers and browsers) and selected online patronage behaviors (total amount spent, frequency of searching with intent to buy, and frequency of purchasing online).

3.1. Types of perceived risk

When shopping online, consumers express more than one concern related to each type of risk. For example, consumers may perceive difficulty in placing orders online or potential delays receiving merchandise from Internet orders, but both concerns are related to perceived time/convenience loss. For the purposes of this study, we selected one item that best represents each of the types of perceived risk examined in the study. The following four items, corresponding to the four types of perceived risk under investigation, were used to identify the perceived risks that potentially hinder Internet users from purchasing online:

1. Do not trust that my credit card number will be secure (perceived financial risk).
2. Difficult to judge quality of a product/service (perceived product performance risk).
3. Do not trust that my personal information will be kept private (perceived psychological risk).
4. Faster/easier to purchase locally (perceived time/convenience loss risk).
5. Respondents indicated whether each of the above was a factor in their Internet behavior with yes or no.

3.1.1. Shoppers vs. browsers

Respondents were categorized as browsers, heavy shoppers, or moderate shoppers based on their response to the following question about their shopping experiences: (1) Once you have decided to purchase a product/service, what percentage of the time do you place your order on the Web (i.e. by filling out a form on the Web)? Respondents indicating that they placed an order on the Web all or most of the time were defined as heavy shoppers ($n=230$); those who placed an order half of the time or less often were defined as moderate shoppers ($n=322$); and those who did not place orders on the Web were defined as browsers ($n=70$). Subsequently, 21 browsers were excluded because of inconsistent responses resulting in 49 respondents being classified as browsers.

3.1.2. Online patronage behaviors

Three online patronage behaviors, *amount spent on the Web*, *frequency of searching with intent to buy*, and *frequency of purchasing online*, were examined. Amount spent on the Web was determined by response to the following question: "What is the TOTAL amount you spent on purchases through vendors on the World Wide Web during the past six months?" Frequency of searching with intent to buy was determined by responses to: "On average, how often do you search for information from Web-based vendors about products or services you have an intention to buy at some point in the near future?" Frequency of purchasing online was determined by response to, "On average, how often do you make online purchases from Web-based vendors?"

3.1.3. Demographics

Variables previously found to be related to some online purchase behaviors, age, gender, household income, and online experience (less than 1 year, 1–3 years, and 4 years or more) were examined (Increases Seen in Internet Shopping, 1999; Women Taking the Internet Lead, 1999; Lee, 1999).

4. Results and discussion

4.1. Description of sample

A total of 641 respondents answered all pertinent questions on both surveys — General Demographics and Finding Product Information and Purchasing. Respondents were categorized by gender, age group, income, and years of online experience (Table 1). Majority of the respondents were men (68%), between 26 and 50 years of age (65%) and were experienced Internet users (62%, i.e., had 4 or more years of online experience). Only 7% of the sample was new (less than 1 year) Internet users. The sample income levels were well distributed except for the lower-income level (less than US\$30,000), which was underrepresented. Overall, the

Table 1
Demographic characteristics

| Characteristics | Percent of all respondents (<i>n</i> = 641) | Percent of heavy shoppers (<i>n</i> = 230) | Percent of moderate shoppers (<i>n</i> = 322) | Percent of browsers (<i>n</i> = 49) |
|-------------------------|--|---|--|--------------------------------------|
| <i>Age</i> | | | | |
| 11–20 | 4.2 | 3.5 | 2.5 | 16.3 |
| 21–25 | 11.8 | 10.4 | 13.7 | 8.2 |
| 26–50 | 65.3 | 66.1 | 65.8 | 65.3 |
| 50+ | 17.0 | 19.1 | 16.8 | 8.2 |
| <i>Gender</i> | | | | |
| Female | 31.2 | 27.0 | 33.2 | 36.7 |
| Male | 68.4 | 73.0 | 66.8 | 63.3 |
| <i>Experience</i> | | | | |
| < 1 Year | 7.2 | 3.5 | 7.1 | 12.2 |
| 1–3 Years | 30.2 | 27.4 | 29.8 | 36.7 |
| > 4 Years | 62.1 | 69.1 | 63.0 | 51.0 |
| <i>Household income</i> | | | | |
| Under US\$30,000 | 8.9 | 11.7 | 11.8 | 24.5 |
| US\$30,000–49,000 | 24.9 | 25.6 | 24.5 | 18.4 |
| US\$50,000–74,000 | 22.6 | 20.9 | 24.5 | 20.4 |
| Over US\$74,000 | 26.5 | 32.6 | 25.8 | 16.4 |

Total may not be equal to 100% due to nonresponses.

sample characteristics were consistent with the characteristics of the 5000 respondents to the 10th GVU survey in that they showed a bias in the experience and intensity of usage of the users, but not in the core demographics.

An examination of the profiles of the three online user groups showed that compared to moderate shoppers or browsers, heavy shoppers tended to be older (over 50), more experienced online users (4 or more years of experience), wealthier (income over US\$75,000), and were somewhat more likely to be men. Internet browsers, by contrast, tended to be younger (ages 11–20), new Internet users (less than 1 year of experience), and have lower incomes (less than US\$30,000). Moderate Internet shoppers tended to fall between the heavy shopper and browser groups with respect to these characteristics.

These findings suggest that older Internet users are more likely to be shoppers, whereas younger Internet users, particularly those in the 11–20 age category, are more likely to be browsers than shoppers. These findings are consistent with reports that Internet shoppers tend to be older and have high levels of income (Internet Shopping, 1998; Donthu and Garcia, 1999) and may reflect the fact that younger users often do not have credit cards and thus are unable to purchase online (Thompson, 1999). Men were slightly more likely than women to be heavy shoppers, providing limited support for Caswell's (2000) conclusion that women lag behind men in online shopping. To date, little has been published about the relationship between amount of Internet experience and likelihood of purchase; however, the current findings show that Internet users with more Internet experience are more likely to purchase online.

4.2. Types of risks perceived by shopper groups

Objective 1 was to identify the types of risks perceived by Internet shoppers and Internet browsers when contemplating on a particular online purchase. Of 18 potential risks that might prevent Internet users from shopping online, 39% of the respondents mentioned product performance risks (i.e., difficulty in judging quality online); 23% mentioned financial risk (i.e., risk regarding loss form online credit card usage); 32% cited psychological risks (i.e., privacy concerns); and 20% mentioned concerns regarding time/convenience risk (i.e., faster/easier locally). Other online shopping concerns identified in the survey included unfamiliar vendor (23% of responses), not enough information (18% of responses), prefer to deal with people (10% of responses), no receipt/documentation (13% of responses), and too complicated to place order (6% of responses).

Browsers perceived considerably more financial risks, time/convenience risks and psychological risks than did either of the two shopper groups (Fig. 2). Heavy shoppers, by contrast, perceived fewer risks than browsers or moderate shoppers in all risk categories. Moderate shoppers were more likely to perceive product performance risk than the other two groups.

4.3. Types of risk perceived and selected demographics

Objective 2 was to examine the relationship between the types of risks perceived and selected demographics. The aim was to determine whether the four types of perceived risk are relevant across shoppers or only for certain groups of Internet shoppers (Table 2). Overall, difficulty of judging

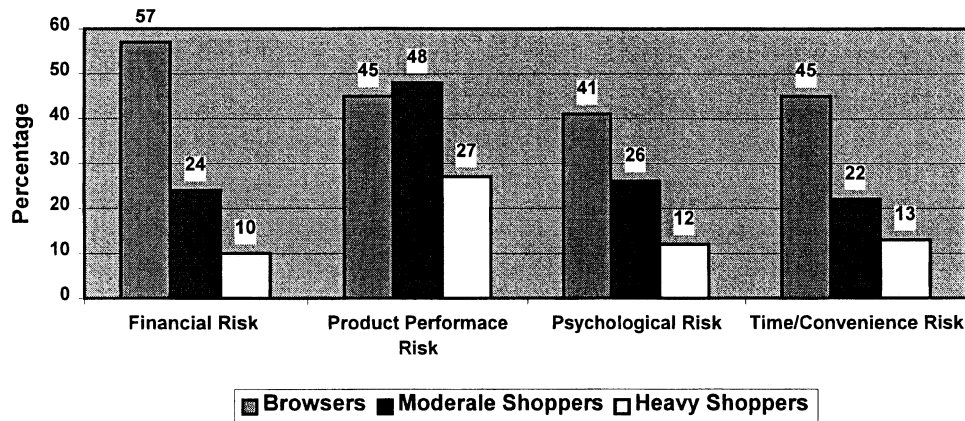


Fig. 2. Perceived risk by type of online shopping behavior.

quality (a product performance risk) was most frequently cited by Internet users as a reason for not purchasing online. All groups were likely to perceive product performance risk with the exception of the youngest age group (11–20 years), which was less likely to be concerned with product performance risk.

The likelihood of perception of financial risk markedly decreased as years of online experience increased. That is, new online shoppers perceived more financial risks than those who had been shopping online more than 1 year. Women perceived somewhat more financial risks than men, whereas the youngest shoppers (age 11–20) perceived considerably fewer financial risks than other age groups. (Although more research would be necessary to elaborate this notion, it may be that parents were often paying for their children's purchases.) Perception of psychological risk was more likely among older respondents and for those who had less online experience, especially for those who had online

experience of less than 1 year. The likelihood for consumers to perceive time/convenience risk was lower for older respondents, particularly those over 50 years, and those with less online experience.

4.4. Types of perceived risk and online patronage behaviors

Objective 3 was to examine the relationship between the types of risk perceived by Internet shoppers and three online patronage behaviors (amount spent on the Web, frequency of searching with intent to buy, and frequency of purchasing online). Multiple regression analysis was used to examine whether the independent variables (four types of perceived risk — financial, product performance, psychological, time/convenience loss — and the demographic variables of age, gender, income, and Internet experience) were predictors of the three online behaviors. Only respondents who had purchased on the Internet (heavy shoppers and moderate

Table 2
Perceived risks by demographic characteristics

| Demographics | Financial risk (%) | Product performance risk (%) | Psychological risk (%) | Time/convenience risk (%) |
|--------------------------|--------------------|------------------------------|------------------------|---------------------------|
| <i>Age</i> | | | | |
| 11–20 | 11 | 22 | 11 | 26 |
| 21–25 | 25 | 45 | 17 | 25 |
| 26–50 | 23 | 41 | 23 | 21 |
| 50+ | 23 | 37 | 25 | 8 |
| <i>Gender</i> | | | | |
| Female | 28 | 42 | 25 | 18 |
| Male | 21 | 38 | 22 | 21 |
| <i>Online experience</i> | | | | |
| <1 Year | 59 | 44 | 46 | 7 |
| 1–3 Year | 25 | 40 | 23 | 16 |
| >4 Year | 18 | 39 | 20 | 23 |
| <i>Household income</i> | | | | |
| Under US\$30,000 | 26 | 31 | 22 | 19 |
| US\$30,000–49,000 | 23 | 44 | 21 | 24 |
| US\$50,000–74,000 | 23 | 39 | 26 | 19 |
| Over US\$74,000 | 21 | 42 | 18 | 18 |

Table 3
Results of multiple regression analysis of Internet shopping behavior

| Dependent variable | Independent variable | Coefficients | | | |
|---|-------------------------|--------------|----------------|-----------|-----------|
| | | B | Standard error | β | t |
| Amount spent on Web in the last 6 months | Internet shopping | | | | |
| | Heavy Internet shoppers | 0.432 | 0.133 | 0.218 | 3.246*** |
| | Perceived risks | | | | |
| | Product performance | −0.306 | 0.093 | −0.032 | −0.680 |
| | Financial | | 0.133 | −0.120 | −2.298** |
| | Psychological | −0.158 | 0.126 | 0.018 | 0.345 |
| | Time/convenience | | 0.111 | −0.062 | −1.432 |
| | Demographics | | | | |
| | Age | 0.242 | 0.063 | 0.161 | 3.821**** |
| | Household income | | 0.017 | 0.066 | 1.563 |
| | Online experience | | 0.070 | 0.060 | 1.425 |
| Gender (female) | | 0.141 | 0.019 | 0.284 | |
| (Constant) | 1.962 | 0.310 | | 6.327**** | |
| Model: $F=8.358$ **** | | | | | |
| Frequency of searching with intent to buy | Internet shopping | | | | |
| | Heavy Internet shoppers | 0.344 | 0.181 | 0.132 | 1.901* |
| | Perceived risks | | | | |
| | Product performance | | 0.127 | −0.016 | −0.333 |
| | Financial | −0.357 | 0.180 | −0.106 | −1.980** |
| | Psychological | | 0.172 | 0.020 | 0.381 |
| | Time/convenience | −0.398 | 0.150 | −0.118 | −2.659*** |
| | Demographics | | | | |
| | Age | | 0.086 | 0.026 | 0.604 |
| | Household income | | 0.023 | 0.091 | 2.078** |
| | Online experience | | 0.095 | 0.029 | 0.666 |
| Gender (female) | 0.248 | 0.191 | 0.089 | 1.299 | |
| (Constant) | 3.208 | 0.423 | | 7.562**** | |
| Model: $F=3.303$ ** | | | | | |
| Frequency of purchasing online | Internet shopping | | | | |
| | Heavy Internet shoppers | 0.608 | 0.121 | 0.324 | 5.026**** |
| | Perceived risks | | | | |
| | Product performance | −0.141 | 0.084 | −0.075 | −1.674* |
| | Financial | −0.307 | 0.120 | −0.127 | −2.547** |
| | Psychological | | 0.115 | 0.004 | 0.085 |
| | Time/convenience | −0.174 | 0.100 | −0.072 | −1.742* |
| | Demographics | | | | |
| | Age | | 0.058 | 0.046 | 1.138 |
| | Household income | | 0.016 | 0.072 | 1.782* |
| | Online experience | 0.123 | 0.063 | 0.079 | 1.944* |
| Gender (female) | | 0.128 | 0.030 | 0.475 | |
| (Constant) | 1.951 | 0.283 | | 6.901**** | |
| Model: $F=13.303$ **** | | | | | |

* $P < .10$.

** $P < .05$.

*** $P < .01$.

**** $P < .001$.

shoppers) were included because browsers, by definition, would not have online purchasing behaviors. Table 3 shows the results of multiple regression analysis for moderate and heavy online purchasers. Multiple regression analyses were run to examine the effect of the independent variables on each of the three online patronage behaviors. All three models were significant ($\alpha < .01$), suggesting a good fit for these models.

Overall, perceived financial risk was the most consistent predictor of Internet patronage behavior. Perceived financial

risk (potential for monetary loss due to credit card misuse) was a significant predictor for frequency of searching with intent to buy, amount spent on the Web and frequency of purchasing online. In each case, there was a negative relationship between the perceived risk and the online shopping behavior, providing support for the proposition of perceived risk theory that increased uncertainty about the outcome of a purchase will lead to increased reluctance to engage in purchase activities. The findings suggest that financial risk is likely to deter Internet shoppers from initiating the Internet

shopping process or cause them to be more selective regarding the Web sites they do patronize. Additionally, perceived financial risk may prevent heavy shoppers from spending as much online as they might otherwise spend if they were not concerned with financial risk.

Time/convenience risk was a significant predictor for frequency of searching with intent to buy and frequency of purchasing online but was not related to amount spent on the Web. This finding suggests that some Internet shoppers may hesitate to shop on the Internet due to concerns about inconvenience or delays in receiving merchandise. These results provide additional support for the usefulness of perceived risk theory in examining online shopping behavior.

Overall, product performance risk was most frequently cited as the reason for not purchasing online; however, it was a significant predictor in only one model — frequency of purchasing online. It did not significantly affect any other Internet shopping behavior. The limited effect of product performance risk on shopping behaviors suggests that concerns regarding product performance may be less of a deterrent to Internet patronage behavior among current Internet shoppers than previously thought.

Although privacy concerns, a psychological risk, was a frequently cited reason for not purchasing online, it did not significantly influence any of the Internet shopping behaviors examined. Given the extensive literature regarding invasion of privacy as a major concern of many Internet users (Maignan and Lukas, 1997; Jacobs, 1997; Benassi, 1999), it is surprising that this risk did not significantly predict any of the Internet shopping behaviors examined and suggest that privacy concerns may not deter shopping among current Internet shoppers.

Heavy Internet shoppers were much more likely to have spent more on the Web, to purchase online more frequently, and somewhat more likely to search with intent to buy. The overall effectiveness of demographic variables in predicting Internet shopping behavior was limited and somewhat mixed. Age was a predictor of amount spent on the Web, but did not predict other shopping behaviors. Household income predicted frequency of search with intent to buy and frequency of purchasing online, but not amount spent on the Web. Gender was not a significant predictor of any of the dependent variables. Online experience was a significant predictor only for frequency of purchasing online. Although these demographic characteristics have been identified as potentially impacting Internet shopping behavior, they appear to have little consistent impact on the Internet shopping behaviors examined in this study.

5. Conclusions and implications

The Internet represents a fundamentally different environment for retailing than do traditional retailing media. This study contributes to the understanding of patronage behavior

in Internet shopping by providing preliminary information regarding types of risks perceived by Internet shoppers and browsers and the relationship between those risks and online patronage. In addition, a contribution of this exploratory study is the proposal of a conceptual model as a framework to guide the investigation of Internet patronage behavior. Additional research is necessary to explore the merits of perceived risk and its abilities to explain online shopping behavior. This study examined Internet patronage behavior based on the construct of perceived risk as a predictor of Internet shopping behavior. Each of the models tested was supported by the data, suggesting that perceived risk provides a useful framework for examining Internet patronage behaviors.

Findings of this exploratory study suggests that although Internet shoppers perceive several risks in Internet shopping, these perceived risks may not significantly influence Internet patronage behaviors among current Internet shoppers in an extensive and systematic way. Thus, the extent to which the perceived risks examined actually deter online shopping among current online shoppers may be more modest than would be expected. Nevertheless, perceived risk was significant in explaining some online shopping behaviors among current Internet shoppers. Internet browsers appear to be much more sensitive than shoppers to the risks associated with Internet shopping in that risk perception was much greater among browsers than shoppers in this study. Hence, perceived risk is likely to have a greater impact on potential patronage behaviors of Internet browsers than on current shoppers. The present study examined the impact of perceived risks on shoppers only, as browsers did not participate in the shopping behaviors examined. Future studies may find it productive to examine the impact of perceived risk on shopping intentions of browsers and the role perceived risk plays in the adoption of the Internet as new medium of purchase.

It is important for Internet marketers to understand the characteristics and patronage behaviors of this new market to better meet consumers' needs. In 1971, Roselius suggested that sellers should first determine the kind of risks perceived by their customers and then address these risks in their marketing strategy. This advice appears particularly apropos when evaluating a new form of retailing such as the Internet. The information presented here provides Internet marketers with a picture of the target market for Internet sites and the relationship between perceived risks and patronage behavior. The model presented suggests that if online marketers desire to increase patronage, they should develop marketing strategies to better address the perceived risks that may prevent current browsers from shopping online and current online shoppers from increased patronage.

The results of this research need to be interpreted with caution. Due to the uniqueness of Internet surveying, GVV surveys employ nonprobabilistic sampling. Since random sampling techniques are not employed consistently throughout the methodology, the ability of the collected data to generalize to the entire population is reduced, because certain

members of the Web user community may not have had an equal chance to participate. Thus, the characteristics of all Internet users may differ from those users who participated in the GVV survey. Compared to other surveys of WWW users, the GVV survey shows a bias exists in the experience, intensity of usage, and skill sets of the users, but not the core demographics of users (GVV's 10th WWW User Surveys, 1999). This bias would be expected as GVV surveys are completed by online users while online, whereas respondents to other surveys may claim to use the Internet or have used it at some point, but not be regular Internet users. The data obtained in this study are data from actual users online.

Due to limitations of the data set used, some variables in this study were not precisely operationalized. For instance, the types of perceived risk were measured by a single item. Future research investigating Internet patronage behavior may find that more precise measures (e.g., validated perceived risk scales) will result in stronger links among the variables.

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