

ONLINE SHOPPING ACCEPTANCE MODEL — A CRITICAL SURVEY OF CONSUMER FACTORS IN ONLINE SHOPPING

Lina Zhou

Department of Information Systems, University of Maryland Baltimore County
zhoul@umbc.edu

Liwei Dai

Department of Information Systems, University of Maryland Baltimore County
liweid1@umbc.edu

Dongsong Zhang

Department of Information Systems, University of Maryland Baltimore County
zhangd@umbc.edu

ABSTRACT

Since the late 1990s, online shopping has taken off as an increasing number of consumers purchase increasingly diversified products on the Internet. Given that how to attract and retain consumers is critical to the success of online retailers, research on the antecedents of consumer acceptance of online shopping has attracted widespread attention. There has yet to be a holistic view of online shopping acceptance from the perspective of consumers. In this research, we conducted an extensive survey of extant related studies and synthesized their findings into a reference model called OSAM (Online Shopping Acceptance Model) to explain consumer acceptance of online shopping. Our literature survey reveals that a myriad of factors have been examined in the context of online shopping and mixed results on those factors have been reported. The proposed model helps reconcile conflicting findings, discover recent trends in this line of research, and shed light on future research directions.

Keywords: online shopping, acceptance, consumer behavior, shopping intention, e-commerce.

1. A Consumer-oriented View of Online Shopping

Online shopping is becoming increasingly popular. Online retail sales are estimated to grow from \$172 billion in 2005 to \$329 billion in 2010 [Johnson 2005]. There are 32 countries worldwide with the Internet penetration rate higher than 50% (<http://www.internetworldstats.com>). As of April 2006, 73% of American adults are Internet users (<http://www.pewinternet.org>). Moreover, Internet users' ability to shop online has significantly improved from 16% to 32% since March 2001. The potential benefits of online shopping for consumers include convenience, various selection, low price, original services, personal attention, and easy access to information, among others.

The proliferation of online shopping has stimulated widespread research aimed at attracting and retaining consumers from either a consumer- or a technology-oriented view [Jarvenpaa and Todd 1997]. The consumer-oriented view focuses on consumers' salient beliefs about online shopping. Such beliefs may influence purchase channel selection. For example, online consumer behavior has been examined from the perspectives of consumer demographics [Brown et al. 2003; Chau et al. 2002; Korgaonkar et al. 2004; Li et al. 1999; O'Keefe et al. 2000; Park and Jun 2003; Park et al. 2004; Stafford et al. 2004], cognitive/psychological characteristics [Hoffman and Novak 1996; Huang 2003; Lynch and Beck 2001; Novak et al. 2000; Wolfinbarger and Gilly 2001; Xia 2002], perceptions of risks and benefits toward online shopping [Bhatnagar and Ghose 2004a; Bhatnagar and Ghose 2004b; Bhatnagar et al. 2000; Featherman and Pavlou 2003; Garbarino and Strabilevitz 2004; Huang et al. 2004; Jarvenpaa and Todd 1997; Jarvenpaa and Tractinsky 1999; Jarvenpaa et al. 1999; Joines et al. 2003; Kolsaker et al. 2004; Liang and Jin-Shiang 1998; Liao and Cheung 2001; Park et al. 2004; Pavlou 2003; Pires et al. 2004; Solomon 1999], shopping motivation [Childers et al. 2001; Johnson et al. 2004; Novak et al. 2000; Wolfinbarger and Gilly 2001], and shopping orientation [Donthu and Garcia 1999; Korgaonkar and Wolin 1999; Li et al. 1999; Swaminathan et al. 1999]. The technology-oriented view, on the other hand, explains and predicts consumer acceptance of online shopping by examining technical specifications of an online store. These specifications include user interface features, Web site content and design, and system usability. The above two views do not contradict but rather reinforce each other. Because the success of an electronic market largely depends on consumers' willingness to accept it, we adopt the

consumer-oriented view of online shopping in this study.

As the competition in e-commerce is intensified, it becomes more important for online retailers to understand the antecedents of consumer acceptance of online shopping. Such knowledge is essential to customer relationship management, which has been recognized as an effective business strategy to achieve success in the electronic market. Despite a host of studies on online shopping, there is lack of a coherent model for understanding mixed findings on consumer acceptance. In this research, we synthesized the findings of the state-of-the-art research into a reference model called OSAM (Online Shopping Acceptance Model) to predict consumer acceptance of online shopping. This work extends the reference model [Chang et al. 2005] and provides an in-depth analysis of consumer factors associated with online shopping acceptance. Moreover, a holistic customer-oriented view provides OSAM with a unique edge and focus that facilitate the organization of related literature. Product characteristics and different operationalizations of constructs are drawn upon to explain and reconcile conflicting findings. Further, by incorporating the latest research findings into the survey, we were able to reveal recent trends in this line of research and shed light on some future research directions.

While complete coverage of all potential factors and issues is not feasible, we have attempted to include as many empirical findings about influential consumer factors in online shopping acceptance as possible. Our initial sample of empirical studies was drawn from articles in information system journals that aimed to explain intended or actual online shopping behavior. Marketing journal articles were also selected to broaden our understanding of consumer behavior. Additional articles of interest were identified from the bibliographies of the selected journals. During the literature search in databases such as Business Source Premier, Science Direct (Elsevier), and JSTOR, we used various keywords and their synonyms such as online shopping, Internet purchasing, online retailing, consumer behavior, and e-commerce, to search for articles dating back as far as 1998. The resulting 64 articles reviewed came from 36 different journals (See Appendix A for the distribution of studies across journals).

The rest of the paper is organized as follows. First, we review and analyze consumer factors that influence online shopping acceptance in Section 2. Then, we develop OSAM to explain consumer acceptance of online shopping, and present research methodologies for testing OSAM in Section 3. In Section 4, we discuss future research issues and managerial implications enlightened by the OSAM.

2. Consumer Factors in Online Shopping Acceptance

Drawing upon the extant literature, we summarize individual factors and their impact on consumer online shopping in Table 1. In particular, we identified nine types of consumer factors, including demographics, Internet experience, normative beliefs, shopping orientation, shopping motivation, personal traits, online experience, psychological perception, and online shopping experience. Among them, demographics were the focus of early studies, while psychological perception and online experience (e.g., emotion) have been examined in more recent studies. It is not surprising that some consumer factors were found to have consistent effects across different studies, while others were found to have mixed or even contradictory impacts. To enable better understanding of the results, we provide alternative explanations for some of the mixed findings. In addition, we analyze how the importance of the nine factors evolves over time.

Table 1: A Summary of Consumer Factors related to Online Shopping

Factor Types	Individual Factors	Surveyed Studies	Major Findings
Demographics	Gender	[Alreck and Settle 2002; Brown et al. 2003; Donthu and Garcia 1999; Korgaonkar and Wolin 1999; Levy 1999; Li et al. 1999; ; Rodgers and Harris 2003; Slyke et al. 2002; Stafford et al. 2004]	Male consumers make more online purchases and spend more money online than females; they are equally or more likely to shop online in the future, and are equally or more favorable of online shopping. Women have a higher-level of web apprehensiveness and are more skeptical of e-business than men.

	Age	[Bellman et al. 1999; Bhatnagar and Ghose 2004b; Bhatnagar et al. 2000; Donthu and Garcia 1999; Joines et al. 2003; Korgaonkar and Wolin 1999; Li et al. 1999; Rohm and Swaminathan 2004; Stafford et al. 2004]	There are mixed findings on the relationship between age and online shopping intention.
	Income	[Bagchi and Mahmood 2004; Donthu and Garcia 1999; Korgaonkar and Wolin 1999; Li et al. 1999; Susskind 2004]	Income is positively related to online shopping tendency.
	Education	[Bagchi and Mahmood 2004; Bellman et al. 1999; Donthu and Garcia 1999; Li et al. 1999; Liao and Cheung 2001; Susskind 2004]	Education level produces mixed effects ranging from no effect to a positive effect on online shopping.
	Culture	[Chau et al. 2002; O'Keefe et al. 2000; Park and Jun 2003; Park et al. 2004; Shiu and Dawson 2002; Stafford et al. 2004]	Consumers from an individualistic culture are more likely to use the Internet for e-commerce than those from a collectivistic culture A more masculine society has more predominant male shoppers and is more involved in online shopping.
Internet experience	WWW apprehensiveness (WA)	[Susskind 2004]	General WA is moderately related to WA relative to purchasing, and is negatively related to the amount of time spent online.
	Frequency of Internet usage	[Bhatnagar and Ghose 2004b; Bhatnagar et al. 2000; Cho 2004; Citrin et al. 2000; Jarvenpaa and Todd 1997; Jarvenpaa and Tractinsky 1999; Liao and Cheung 2001; Nysveen and Pedersen 2004; Park 2002]	There are mixed results for the effects of Internet usage on online shopping intention. Internet usage is negatively related to perceived product risk.
	Comfort with the Internet	[Mauldin and Arunachalam 2002]	Comfort level has a positive relationship with online shopping tendency.
Normative beliefs		[Foucault and Scheufele 2002; Limayem et al. 2000]	The influence of friends, family, and media recommendations on the tendency for online shopping is mixed.
Shopping orientation		[Donthu and Garcia 1999; Korgaonkar and Wolin 1999; Li et al. 1999; Swaminathan et al. 1999]	Online consumers tend to be convenience-oriented, and recreational and economic shoppers appear to become dominant recently. Consumers' proclivity to purchase products online is not found to vary across different online shopping orientations.
Shopping motivation		[Childers et al. 2001; Joines et al. 2003; Johnson et al. 2004; Novak et al. 2000; Solomon 1999; Wolfinbarger and Gilly 2001]	Motivational factors play a key role in determining time spent on product searching and online shopping. Experiential (hedonic) shoppers always find more enjoyment in interactive environments than in pure text environments.

Personal traits	Innovativeness	[Citrin et al. 2000; Donthu and Garcia 1999; Goldsmith 2001; Goldsmith 2002; Limayem et al. 2000; Sin and Tse 2002]	Personal innovativeness has both direct and indirect effects on online shopping intention, the indirect effects being mediated by attitude.
Online experience	Emotion	[Huang 2003; Lynch and Beck 2001; Wolfinbarger and Gilly 2001; Xia 2002]	Positive emotions have positive influence on online shopping intention in some countries.
	Flow	[Hoffman and Novak 1996; Mathwick and Rigdon 2004; Novak et al. 2000]	There are mixed results on the influences of flow on positive subjective experience and greater exploratory behavior.
Psychological perception	Risk perception	[Bhatnagar and Ghose 2004a; Bhatnagar and Ghose 2004b; Bhatnagar et al. 2000; Featherman and Pavlou 2003; Garbarino and Strabilevitz 2004; Huang et al. 2004; Jarvenpaa and Todd 1997; Jarvenpaa and Tractinsky 1999; Jarvenpaa et al. 1999; Joines et al. 2003; Kolsaker et al. 2004; Liang and Jin-Shiang 1998; Liao and Cheung 2001; Park et al. 2004; Pavlou 2003; Pires et al. 2004]	Perceived risk is negatively related to online shopping intention.
	Benefit perception	[Chen et al. 2002; Limayem et al. 2000; Pavlou 2003]	Perceived usefulness is positively related to the intention to purchase online.
	WWW purchasing apprehensiveness	[Susskind 2004]	WWW purchasing apprehensiveness is negatively related to the amount of money spent online
Online Shopping experience	Frequency of online purchases	[Brown et al. 2003; Cho 2004; Foucault and Scheufele 2002; Moe and Pader 2004; Park and Jun 2003; Yang and Lester 2004]	Frequency of purchases is positively related to online shopping tendency and negatively related to the likelihood to abort an online transaction.
	Satisfactory levels about past online transactions	[Cho 2004; Devaraj et al. 2002; Foucault and Scheufele 2002; Koivumi 2001; Pires et al. 2004]	Previous satisfaction has a positive relationship with online shopping tendency.

Based on the analysis of similarities between the consumer factors listed in Table 1, we organized them along two dimensions: online and shopping. Accordingly, consumer factors can be grouped into four quadrants, as shown in Table 2. Type I consumer factors (e.g., demographic information and personal traits) are independent of both online and shopping. Type II factors are only related to online and Type III are only related to shopping. Type IV factors are involved with online shopping (e.g., perceived risk). The classification of consumer factors may help build a theoretical model to explain consumer acceptance of online shopping. The model will be introduced in Section 3. The taxonomy of consumer factors may also contribute to other related research. For example, research on other types of online behavior may consider adopting Type II factors, and research on shopping behavior in other emerging media may consider Type III factors. If the four types of factors are placed along the dimension of generality, Type I factors lie at the generic end while Type IV factors lie at the specific end. The latter requires adaptation to specific problem contexts.

Table 2. Classification of consumer factors examined in online shopping acceptance research

		Shopping	
		Not Related	Related
Online	Not Related	Type I (e.g., Demographic information)	Type III (e.g., Shopping orientation)
	Related	Type II (e.g., Internet experience)	Type IV (e.g., Perceived risk)

2.1 Type-I Consumer Factors – General

Consumer demographics is among the most frequently studied factors in on online shopping research. The effects of gender, age, income, education, and culture of consumers on online shopping behavior have been examined since late 1990s [Bellman et al. 1999; Jarvenpaa and Tractinsky 1999; Li et al. 1999; Swaminathan et al. 1999].

2.1.1 Gender

Traditionally, shopping is an activity more favored by women. It is women who are usually in charge of household shopping and hold more positive attitudes towards the traditional store and catalogue shopping than their male counterparts [Alreck and Settle 2002]. However, the new shopping channel provided by the Internet seems to result in a different, if not opposite, gender pattern. Although there was no significant difference between online shoppers and non-shoppers in terms of gender [Donthu and Garcia 1999], men were found to make more purchases [Li et al. 1999; Stafford et al. 2004] and spend more money online [Susskind 2004] than women. Men's perceptions of online shopping were approximately the same as [Alreck and Settle 2002] or even more favorable than [Slyke et al. 2002] those of female consumers.

Such a change of gender pattern in the online shopping environment has been explained using different models or factors, including shopping orientation [Rodgers and Harris 2003; Swaminathan et al. 1999], information technology acceptance and resistance [Rodgers and Harris 2003; Susskind 2004], product involvement [Slyke et al. 2002], product properties [Citrin et al. 2003], and perceived risks [Garbarino and Strabilevitz 2004]. First, shopping orientation was found to influence consumers' shopping activities, interests, and opinions. Men and women were found to have different shopping orientations—men were more convenience-oriented and less motivated by social interaction, while women were just the opposite [Swaminathan et al. 1999]. The function of shopping online as a social activity is weak compared with shopping in traditional stores. This is due to the lack of face-to-face interaction with sales associates online. Women did not find online shopping “as practical and convenient as their male counterparts” ([Rodgers and Harris 2003], page 540). Another reason lies in the technology associated with online shopping. Information systems studies have shown that there are gender differences in the context of individual adoption and sustained usage of technology [Venkatesh and Morris 2000]. Women were reported to have a higher level of web apprehensiveness (i.e., individual's resistance to or fear of the WWW as a channel for context-free online information seeking and communication) [Susskind 2004]. Being more skeptical about e-business than their male counterparts; women were emotionally less satisfied with online shopping and made fewer online purchases than men [Rodgers and Harris 2003].

Second, the products that male and female consumers are interested in buying are different. For example, male consumers are more interested in hardware, software, and electronics, while females are more interested in food, beverages, and clothing. In the early stage of e-commerce, the types of products available online used to be male-oriented [Slyke et al. 2002]. Women did not shop online because they could not find products that interested them.

Third, women demonstrate a stronger need for tactile input in product evaluation than men [Citrin et al. 2003]. The inability to touch or try on products, a shortcoming of online purchasing, might also result in fewer female online shoppers. This characteristic affects online purchase negatively, particularly for those products that require more tactile cues for their evaluation (e.g., shoes).

2.1.2 Age

From the inauguration of Internet till late 1990s, Internet users were primarily middle-aged and younger and unfortunately had less purchasing power than those who were older. As a result, early research showed either no significant age difference among online shoppers [Bellman et al. 1999; Li et al. 1999] or that online shoppers were older than traditional store shoppers [Bhatnagar et al. 2000; Donthu and Garcia 1999; Korgaonkar and Wolin 1999].

Nowadays the age gap between online and non-online consumers is diminishing, but the effect of age on consumers' intention to purchase online remains unclear. For example, some studies identified a positive relationship between consumers' age and their likelihood to purchase products online [Stafford et al. 2004], whereas others reported a negative relationship [Joines et al. 2003] or no relationship [Li et al. 1999; Rohm and Swaminathan 2004]. Such a discrepancy in research findings might be caused by different criteria for defining age groups in different

studies. For example, the above studies used a 10-year span [Li et al. 1999; Stafford et al. 2004], 15-year span [Donthu and Garcia 1999], 20-year span [Rohm and Swaminathan 2004], respectively. Broader ranges may lessen the effect of age. Therefore, a standard age categorization scheme should be adopted in future studies to make cross-study comparisons feasible.

2.1.3 Income and education

It is not surprising that online shoppers tend to earn more money than traditional store shoppers [Bagchi and Mahmood 2004; Donthu and Garcia 1999; Korgaonkar and Wolin 1999; Li et al. 1999; Mahmood et al. 2004; Susskind 2004], considering that the most popular items purchased online, including books, CDs, holiday and leisure travel, PC hardware, and software, are all “normal goods”—those for which demand increases as income increases. On the other hand, online shoppers are not necessarily more educated. Some studies identified a positive relationship between education and the time and money consumers spent online [Li et al. 1999; Liao and Cheung 2001; Susskind 2004], while others did not [Bagchi and Mahmood 2004; Bellman et al. 1999; Donthu and Garcia 1999; Mahmood et al. 2004]. This may be explained by the fact that online shopping is a relatively easy task, which does not require higher education.

2.1.4 Culture

Culture represents a shared set of values that influence societal perceptions, attitudes, preferences, and responses. According to Hofstede’s culture model, cultural differences (normally typified by country) are categorized into five dimensions, including power distance, individualism-collectivism, masculinity-femininity, uncertainty avoidance, and long-term orientation [Hofstede 1984; Hofstede 1991]. Among these five dimensions, individualism-collectivism and masculinity-femininity have been used to predict online consumer behavior.

Collectivism-individualism refers to the extent to which members of a culture tend to have an interdependent versus independent construal of the self [Hofstede 1984]. Western and eastern cultures differ dramatically in this dimension, which leads to different online shopping behavior [Chau et al. 2002; Huang 2003; O’Keefe et al. 2000; Park and Jun 2003; Park et al. 2004]. In an individualistic culture (e.g., U.S. and Australia), the ties between individuals are loose. People tend to use the Internet mainly for personal purposes such as e-commerce and information searching [Chau et al. 2002; O’Keefe et al. 2000; Park and Jun 2003]. In a collectivistic culture (e.g., China, Singapore, and Mexico), people are integrated into strong, cohesive groups. They use the Internet mainly for social communication and hobbies, such as sending/receiving e-mails, accessing/downloading software, and conducting work-related research [Wee and Ramachandra 2000]. Thus, the difference in the individualism-collectivism dimension can lead to different shopping orientations. It has been shown that entertainment shopping orientations drive the online buying intention of collectivistic consumers [Park 2002]; whereas convenience and variety seeking are important constructs for individualistic consumers [Joines et al. 2003]. The individualism-collectivism dimension also influences the perceived risk of online shopping. Although collectivists normally perceive higher risk associated with online shopping than individualists [Park and Jun 2003; Park et al. 2004], they do not consider risk as a significant decision factor. In addition, a collectivistic culture protects people throughout their lives. Hence, collectivists do not need to bear all the consequences of risk and thus tend to be less risk-averse [Weber and Hsee 1998].

Masculinity refers to the extent of the distinction of social gender roles in a society [Hofstede 1984]. In a masculine culture, social gender roles are clearly distinct. In contrast, social gender roles overlap in a feminine culture. A society with more masculinity (e.g., Britain) tends to have a greater gender divide, predominantly male shoppers, than a less masculine society (e.g., Taiwan) [Shiu and Dawson 2002]. Stafford et al. [Stafford et al. 2004] compared the online shopping behavior of consumers in the U.S., Turkey, and Finland. The masculinity scores, according to Hofstede’s [1984] index, were high for the US, low for Turkey, and Finland had the lowest of the three countries. The results show that consumers from less masculine societies (e.g., Finland) are less involved in online shopping than those from more masculine societies (e.g., Turkey), which is consistent with the findings of gender pattern in online shopping.

However, no significant difference was found between the consumers in Turkey and the U.S., suggesting that there are other factors in addition to masculinity that may account for the difference in online shopping behavior between consumers from different countries. For example, the quality of online shopping sites, consumer trust, and positive affect towards the online shopping site are three factors that can influence purchase intentions of consumers from different countries [Lynch et al. 2001]. Trust can positively influence the intention of online shopping in both North and South America, but such a significant effect does not exist in Western Europe. The diminishment of the concern for site quality and trust in Western Europe may be attributed to the fact that the quality and trust provided by Western European online shopping sites are already very high. This speculation requires verification in future studies.

2.1.5 Normative beliefs

Normative beliefs refer to “the perceived behavioral expectations of such important referent individuals or groups

as the person's spouse, family, friends, and—depending on the population and behavior studied—teacher, doctor, supervisor, and coworkers” ([Ajzen 1991], page 412). Normative beliefs can influence behavioral intention through “subjective norms” (e.g., the perceived social pressure to engage or not to engage in a behavior) based on the theory of planned behavior [Ajzen 1991].

Referent influence [Foucault and Scheufele 2002; Limayem et al. 2000] is an important antecedence of online shopping intention. Females are more influenced by recommendations than males [Garbarino and Strabilevitz 2004]. There are mixed findings on the impact of friends. For example, family influence was found much lower than media influence on online shopping intention and friends’ influence was not found to be significant in [Limayem et al. 2000]. However, friends’ influence was found to be significant in a study of online textbook purchases [Foucault and Scheufele 2002]. These results suggest that referent influence may be subject to different product factors.

2.1.6 Personal traits

Personal traits play a role in innovation adoption [Agarwal and Prasad 1998]. Innovativeness measures how fast and to what extent an individual adopts new innovations [Rogers 1995]. Innovativeness is related to online shopping because shopping online can be treated as an innovative behavior in relation to shopping in traditional physical stores. Innovativeness about specific products is measured by domain specific innovativeness [Goldsmith 2001].

The results on the effect of innovativeness were mixed. Innovativeness was found to have a positive impact on the intention to shop online in some studies [Donthu and Garcia 1999; Limayem et al. 2000] but not in others [Citrin et al. 2000; Sin and Tse 2002]. On the other hand, domain specific innovativeness was consistently shown to have positive effects on both the intention of and actual behavior of online shopping [Citrin et al. 2000; Goldsmith 2001; Goldsmith 2002]. Therefore, as suggested by Chang et al. [Chang et al. 2005], domain specific innovativeness is a better predictor of online shopping behavior than general innovativeness.

2.2 Type II Consumer Factors – Online Only

2.2.1 Internet experience

Consumers’ general experience with the Internet does not necessarily influence their online shopping behavior. Although a positive relationship between Internet usage and online shopping intention was detected in some studies [Bhatnagar et al. 2000; Citrin et al. 2000; Liao and Cheung 2001; Park 2002], the relationship was not found to be significant in some of the later studies [Cho 2004; Nysveen and Pedersen 2004]. The increasing penetration of the Internet into our daily life, and the tremendous increase in the Internet population may have led to the diminishing effect of Internet experience in recent years.

2.2.2 Online experience

We use online experience to represent the feelings and affect that users experience while performing online activities. Emotions can influence whether or not product navigation can be converted into purchasing [Huang 2003; Lynch et al. 2001; Xia 2002]. Emotions are related to consumers’ interpretation of their feelings given different online purposes [Wolfenbarger and Gilly 2001; Xia 2002]. Positive affect will lead to shorter browsing time and less detailed information processing when the purpose of online shopping is task-oriented rather than pure entertainment. Negative affect works in an opposite way [Xia 2002]. Different emotional experiences during a shopping process are cherished by consumers with different shopping motivations. Environmental psychology studies have identified arousal, pleasure, and dominance as the three dimensions of emotions that can affect an individual’s decision to approach or avoid an environment [Huang 2003]. Goal-oriented online shoppers are found to lack of “impulsive” but enjoy the “freedom and control”, while the experiential online shoppers enjoy the surprise and excitement of the shopping experience [Wolfenbarger and Gilly 2001].

The influence of emotion in online shopping could vary with product categories and consumer experiences. An investigation of the effect of emotion on purchasing intention and loyalty of consumers from 12 countries in three regions (North America, Western Europe, and South America) [Lynch et al. 2001] showed that positive emotions had positive influence on online shopping intention of consumers in Western Europe and South America, but not on consumers in North America. Consumers in North America could be less prone to emotions in purchasing a CD player because of their previous experiences with online media. From a product perspective, low-touch, standardized goods may be less subject to the influence of the positive affect from the shopping experience than high-touch, experiential products.

Flow is the feeling of complete and energized focus in an activity, with a high level of enjoyment and fulfillment [Csikszentmihalyi 1990]. In other words, flow is the process of optimal experience preceded by a set of antecedent conditions necessary for the experience to be achieved and followed by a set of consequences that occur as a result of the process [Hoffman and Novak 1996; Novak et al. 2000]. Flow has been used to model online consumer behavior [Hoffman and Novak 1996]. In such a model, the antecedents of flow are proposed as consumer attention to the interaction and perceived balance between consumers’ skills and challenges of the interaction. The consequences of flow include increased learning, exploratory and participatory behavior, positive subjective experiences, and a

perceived sense of control over the interaction.

An empirical study [Novak et al. 2000] showed that better skills in using the web, higher perceived control during online interaction, more challenges and arousal, greater telepresence and time distortion all correspond to greater flow online. Greater flow, however, did not seem to result in greater exploratory behavior and positive affect as expected [Novak et al. 2000]. The lack of positive effect might be due to the different effects of flow on consumers with different purchasing motivations. Flow and exploratory behavior is more frequent for experiential and novice shoppers than for goal-oriented and experienced shoppers. In another more recent study of flow in the context of online searching [Mathwick and Rigdon 2004], flow appeared to enhance consumers' attitude toward online retailers and the brands they offered. The different effects of flow may be attributed to different items selected to measure flow, with the latter study adopting multi-item scales instead of single-item scales as used in the former study.

2.3 Type III Consumer Factors – Shopping Only

2.3.1 Shopping Orientation

Shopping orientations are related to general predisposition of consumers toward the act of shopping [Brown et al. 2003; Li et al. 1999]. They are “conceptualized as a specific dimension of the lifestyle and operationalized on the basis of activities, interests, and opinion statements pertaining to acts of shopping [Li et al. 1999, p.3]”. Shopping orientations have been studied for at least half a century in traditional retailing and marketing literature [Stephenson and Willett 1969; Stone 1954].

There are different shopping orientations in the online environment [Joines et al. 2003; McKinney 2004; Rohm and Swaminathan 2004]. Shopping orientation is operationalized as a construct measured from multiple dimensions in empirical studies (e.g., [Brown et al. 2003]). Existing categories of shopping orientations include economic, personalizing, ethical, apathetic [Stone 1954], recreational, convenience-oriented [Stephenson and Willett 1969], highly-involved [Shim and Kotsiopulos 1993], and psych-socializing [Ajzen 1991] or community-oriented shoppers [Brown et al. 2003]. Economic shoppers are price-oriented consumers who are concerned with buying products at the lowest price or getting the best value for the money they pay. Personalizing shoppers tend to value their relationships with store personnel. Ethical shoppers are those who are loyal to a specific store or a brand. Apathetic shoppers are inactive consumers. Recreational shoppers enjoy the act of shopping regardless of whether a purchase is made or not, mostly out of personal motivation (e.g., self-satisfaction and learning about new trends). Convenience-oriented shoppers always take time, space, and effort into consideration. Highly-involved shoppers are the opposite of apathetic shoppers, and psych-socializing (or community-oriented) consumers often shop because of social motives (e.g., social experiences outside the home and pleasure of bargaining).

There is repeated empirical evidence showing that consumers tend to be convenience-oriented [Donthu and Garcia 1999; Korgaonkar and Wolin 1999; Li et al. 1999; 2004; Swaminathan et al. 1999]. The unprecedented convenience, the possibility of anytime, anywhere shopping, the powerful search engines and convenient price comparisons seem to be the main characteristics of online shopping [Korgaonkar and Wolin 1999; Schaupp and Bélanger 2005; Swaminathan et al. 1999]. Consumers value convenience in shopping more as their frequency of online shopping increases [Li et al. 1999].

Online shoppers are also innovative, variety-seeking, brand- or price-nonsensitive, and less risk averse than non-shoppers [Donthu and Garcia 1999]. For example, variety seekers and balanced buyers represent the majority of online grocery shoppers, and convenience and balanced buyers have the highest online grocery propensity [Rohm and Swaminathan 2004]. In contrast, consumers who value social interactions (psych-socializing shoppers) [Swaminathan et al. 1999] and experience (recreational shoppers) [Li et al. 1999] are less interested in online shopping. Nonetheless, recreational and economic shoppers were found to be dominant in another study [Brown et al. 2003]. The different findings of these studies may be attributed to their different research designs. For example, product types could be a moderating factor. Only grocery shopping was studied in [Rohm and Swaminathan 2004], which is more task-oriented than recreational and thus is price-insensitive. In contrast, a diverse set of products were studied in [Brown et al. 2003], including physical products and services (e.g., clothing and insurance services), large and small goods (e.g., automobiles and clothing), and products with different degrees of search, experience, and credence attributes (e.g., entertainment tickets and sporting equipment). Additionally, the gender distribution of online consumers in [Rohm and Swaminathan 2004] was about 72% females, which differed greatly from 31% females as reported in [Brown et al. 2003].

Consumers' proclivity to purchase products online was not found to vary significantly across consumers with different shopping orientations [Brown et al. 2003]. More and more e-commerce environments are offering social and virtual experiences to online shoppers. As a result, the difference in the adoption of online shopping between shoppers with different orientations is expected to dwindle.

2.3.2 Shopping motivation

Shopping motivation is another “old” factor inherited from traditional consumer studies, which continues to show its effects on consumer shopping behavior in the online environment. In particular, motivational factors were found to play a key role in determining time spent on online product searching and shopping [Joines et al. 2003].

In traditional retail stores, consumers shop differently, depending on whether their motivations for shopping are hedonic or utilitarian [Babin et al. 1994; Childers et al. 2001; Hirschman and Holbrook 1982]. Utilitarian consumers (also called goal-oriented shoppers) are concerned with purchasing products in an efficient and timely manner to achieve their goals with minimum irritation; while hedonic consumers (also called experiential shoppers) are equivalent to brick-and-mortar window shoppers for whom the shopping experience is for entertainment and enjoyment [Childers et al. 2001]. In an online shopping environment, the utilitarian motivation has been studied extensively [Bhatnagar and Ghose 2004a; Bhatnagar and Ghose 2004b; Bhatnagar et al. 2000; Brengman et al. 2005; Kolsaker et al. 2004] and considered to be more important than the hedonic motivation [Bhatnagar and Ghose 2004b; Bhatnagar et al. 2000]. This was also echoed in the marketing research in the late 90s [Solomon 1999] where the utilitarian shoppers accounted for two-thirds to four-fifths of online buyers. The reasons for such high numbers of utilitarian shoppers may be found in several factors, time-starvation [Bellman et al. 1999], emphasis of freedom and control for early adopters, and the attributes of online shopping—convenience, accessibility, selection, and availability of information [Wolfinger and Gilly 2001].

Hedonic (or experiential) shoppers were found to exist in the online environment for information gathering purposes such as ongoing hobby-type searches, involvement with a product category, positive sociality and surprise, and bargain hunting [Wolfinger and Gilly 2001]. They were more attracted to well-designed online shopping sites that were easy-to-navigate and visually appealing. Such Web sites offer great relationship building tools to establish a sense of community for consumers. The degree of interactivity that a Web site offers is a strong factor in support of establishing this relationship, because experiential shoppers usually find more enjoyment in interactive environments than in pure text environments [Childers et al. 2001]. In addition, consumers who are novice Web users are more likely to go online for experiential activities; while experienced Web users are more likely to use an online channel for task-oriented activities [Johnson et al. 2004; Novak et al. 2000]. For experiential shoppers, a retailer can inform and influence their choices, because they do not have a specific goal in mind when visiting an online shopping site. Therefore, the design of a website to attract experiential shoppers merits special attention to insure the conversion of shoppers’ product navigation into purchases.

2.4 Type IV Consumer Factors – Shopping and Online

2.4.1 Online shopping experience

Experience with online shopping is found to correlate positively with consumers’ likelihood to shop online. The more experienced consumers are with online shopping and the more satisfied they are with past online transaction experiences, the higher their purchases amounts and the more likely they are to be repeated purchasers [Brown et al. 2003; Devaraj et al. 2002; Foucault and Scheufele 2002; Koivumi 2001; Moe and Pader 2004; Park and Jun 2003; Pires et al. 2004; Yang and Lester 2004] and the lower likelihood of them aborting an intended online transaction [Cho 2004]. This is supported by the extended Technology Acceptance Model, which suggests that increased user experience has positive effect on users’ attitudes toward technology and the mastering of that technology [Venkatesh and Morris 2000].

2.4.2 Benefit perception

The perceived benefits of online shopping in relation to traditional store shopping are one of the driving forces in the adoption. Along with the widespread adoption of the Technology Acceptance Model (TAM) in information systems research, perceived usefulness has been used to explain consumer acceptance of online shopping [Chen et al. 2002; Pavlou 2003]. Perceived usefulness refers to “the degree to which a person believes that using a particular system (e.g., an online shopping site) would enhance his or her job performance ([Davis 1989], p.320)”. It affects online shopping intention both directly and indirectly through shopper attitude. Attitude is defined as the degree to which the outcome of online purchasing behavior is positively or negatively valued [Ajzen 1991]. Perceived consequence was also found to significantly influence attitude and intention to shop online [Limayem et al. 2000].

2.4.3 Risk perception

Perceived risk is defined as the consumers’ subjective belief of suffering a loss in pursuit of a desired outcome [Pavlou 2003]. It has a stronger correlation with willingness to shop online than convenience [Kolsaker et al. 2004]. The distribution and impersonal nature of e-commerce leads to greater information asymmetry and higher risks than the traditional shopping environment. Perceived risk has been shown to negatively influence consumers’ intention to shop online, both for products [Bhatnagar et al. 2000; Featherman and Pavlou 2003; Jarvenpaa et al. 1999; Joines et al. 2003; Kolsaker et al. 2004; Liang and Jin-Shiang 1998; Liao and Cheung 2001; Park et al. 2004; Pavlou 2003] and e-services [Ruyter et al. 2001]. Such a negative correlation was found to influence both experienced and novice consumers [Liang and Jin-Shiang 1998].

In the context of online shopping, risk can be divided into two predominant types—behavioral risk and environmental risk [Park et al. 2004]. Behavioral risk arises from online retailers who have a chance to behave in an opportunistic manner by taking advantage of the distance and impersonal nature of e-commerce and the government's inability to monitor all transactions adequately. It includes product risks, psychological risks, and seller performance risks. Environmental risk is caused by the unpredictable nature of the purchasing medium—Internet, which is beyond the control of online retailers and consumers. It includes financial risks and privacy risks.

Perceived risk can be affected or moderated by a variety of factors, including consumer demographics, Internet experience, product characteristics, and attributes of a Web site, among others. The perceived product risk varies with the age and Internet experience of consumers [Bhatnagar and Ghose 2004b]. As consumers get older, their accumulated experience and knowledge make their shopping more targeted at certain brands and make them more confident, which can reduce product risk and the need for conducting pre-purchase information searches. Similarly, increased Internet experience of online consumers improves their product search efficiency and reduces the perceived product risk. However, increased online shopping experience did not seem to lessen the perceived risk, even though it did not increase it [Jarvenpaa and Todd 1997; Jarvenpaa and Tractinsky 1999; Pires et al. 2004]. Both a U.S. study [Jarvenpaa and Todd 1997] and a cross-country study involving Israel, Australia, and Finland [Jarvenpaa and Tractinsky 1999] suggested that greater experience with online shopping was associated with lower trust and higher risk for a particular merchant. It seems that as consumers gain experience with online shopping, their awareness of competitive merchants increases and they might become more risk-averse to a specific merchant. The perceived risk was also found to differ between genders [Garbarino and Strabilevitz 2004]. In comparison to male consumers, female consumers perceived the likelihood and consequences of negative outcomes as a result of purchasing online to be greater, and their concerns regarding the severity of the consequences of privacy loss during online shopping were stronger [Garbarino and Strabilevitz 2004].

The effect of perceived risk may be subject to product characteristics. The risk is generally higher for high-involvement products that require the initiation of problem-solving behavior and have some degree of personal importance than for low-involvement products [Pires et al. 2004]. Consumers' satisfaction with past online purchases was found to be negatively associated with the perceived risk when purchasing low-involvement products online [Pires et al. 2004]. Online retailers of low-involvement products may have greater success in retaining buyers than those of high-involvement products, if the former can provide an appealing shopping experience. Other attributes of products also matter to perceived risk [Bhatnagar and Ghose 2004b; Bhatnagar et al. 2000; Pires et al. 2004]. For example, the risk was perceived lower for product categories that are high in search attributes [Bhatnagar and Ghose 2004b], but higher for categories associated with higher expenditure levels, more ego-satisfying characteristics, and feeling and touching before purchasing [Bhatnagar et al. 2000]. A detailed review of Web site attributes that are associated with perceived risk can be found in [Chang et al. 2005; Nah and Davis 2002].

3. A Reference Model for Consumer Acceptance of Online Shopping

Based on the detailed review of extant literature on consumer factors that have influence on online shopping acceptance and the relationships among those factors, we develop a reference model called Online Shopping Acceptance Model (OSAM) by synthesizing the identified factors and presenting a holistic view of antecedents of consumer acceptance of online shopping. OSAM extends the TAM [Chen et al. 2002; Davis 1989] by taking specific characteristics of online shopping environments into consideration.

3.1 Technology Acceptance Model (TAM)

The classic theory of reasoned action (TRA) [Ajzen and Fishbein 1980], the theory of planned behavior (TPB) [Ajzen 1991], and TAM have been extensively adopted for explaining and predicting user behavior in an online shopping environment (e.g., [Pavlou 2003]). TAM posits that actual system use is determined by users' behavioral intention to use, which is in turn influenced by their attitude toward usage. Attitude is directly affected by users' belief about a system, which consist of perceived usefulness and ease of use [Davis 1986]. TAM has been extended to include subjective norms to explain perceived usefulness and usage intentions in terms of social influence and cognitive instrumental processes [Venkatesh and Morris 2000].

This belief-affect-intention-behavior causality has proven valid in the online shopping environment [Chen et al. 2002; Limayem et al. 2000], although the TAM's goodness of fit varies across different studies. For example, behavioral intention was reported to have a very strong effect on users' actual shopping behavior with a path coefficient of 0.82 in [Chen et al. 2002], but was only 0.35 in [Limayem et al. 2000]. Similarly, the effect of attitude on behavioral intention had a path coefficient of 0.77 in [Chen et al. 2002], but only 0.35 in [Limayem et al. 2000]. Such a discrepancy may be due to different definitions of constructs used in these studies. For example, attitude was treated as a cognitive evaluation (e.g., pros and cons of the behavior) in [Chen et al. 2002], but as an affection (e.g., feelings toward the behavior) in [Limayem et al. 2000]. Actual behavior was also measured differently. In [Chen et al. 2002],

online shopping behavior included both product purchasing and product information seeking, while in [Limayem et al. 2000], only online purchasing behavior was considered.

3.2 Online Shopping Acceptance Model (OSAM)

Although TAM has been widely used to study online shopping environments, it does not capture the characteristics that are specific to online shopping. For example, the ultimate goal of an online shopping environment is to entice consumers to shop online, not to just be a generic information system. Thus, we incorporated consumer factors from traditional retailing and marketing theories to develop the OSAM model. In addition, those factors inherited from TAM need to be re-examined in the context of online shopping. We developed OSAM to predict and to explain consumer acceptance of online shopping by extending the belief-attitude-intention-behavior relationship in TAM from the following perspectives:

- Perceived usefulness was replaced by perceived outcome to cover both potential benefits and risks of online shopping.
- Three new factors were added as antecedents of online shopping intention. Two of them, namely shopping orientation [Stephenson and Willett 1969; Stone 1954] and shopping motivation [Babin et al. 1994; Childers et al. 2001; Hirschman and Holbrook 1982], are identified from traditional retailing and marketing literature, and the third one, online experience, is derived from the results of empirical studies [Huang 2003; Lynch et al. 2001; Xia 2002].
- Satisfaction was a new mediating factor between behavior and shopping intention to account for repeated online shopping.
- Consumer demographics, Internet and online shopping experience, and normative belief and their direct or indirect effects on online shopping intention are incorporated.

The above extensions and changes are described in detail next. In Figure 1, dotted lines denote causality relationships that have received mixed findings in existing studies. The direct and indirect effects of consumer demographics on online shopping intention are further illustrated in Figure 2.

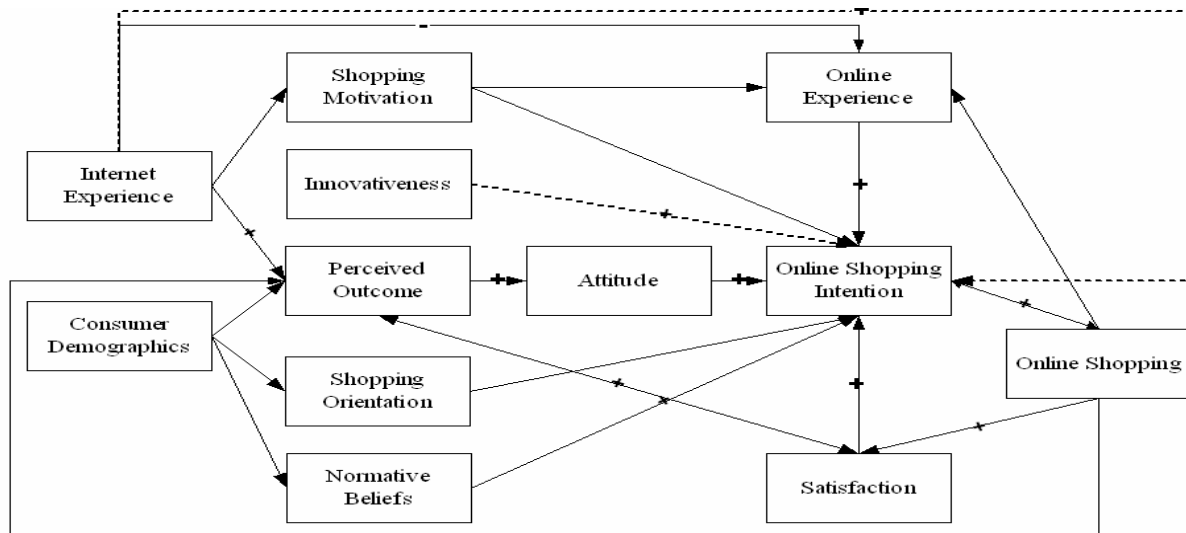


Figure 1. Online Shopping Acceptance Model (OSAM)

Perceived outcome. In OSAM, perceived outcome refers to the perception of possible outcomes (positive or negative) of certain behavior [Limayem et al. 2000]. It can also be considered as a cognitive behavioral belief similar to “the subjective probability that the behavior will produce a given outcome [Ajzen 1991]”. On the one hand, online shopping brings benefits to consumers in terms of convenience, searchability, and rich product information. On the other hand, perceived risk of shopping online has been found to be an important antecedent of online shopping intention [Bhatnagar and Ghose 2004a; Bhatnagar and Ghose 2004b; Bhatnagar et al. 2000; Featherman and Pavlou 2003; Garbarino and Strabilevitz 2004; Huang et al. 2004; Jarvenpaa and Todd 1997; Jarvenpaa and Tractinsky 1999; Jarvenpaa et al. 1999; Joines et al. 2003; Kolsaker et al. 2004; Liang and Jin-Shiang 1998; Liao and Cheung 2001; Park et al. 2004; Pavlou 2003; Pires et al. 2004]. Demographic characteristics of consumers, such as culture [Park and Jun 2003; Park et al. 2004], gender [Garbarino and Strabilevitz 2004], age [Bhatnagar and Ghose 2004b; Garbarino and Strabilevitz 2004], as well as Internet experience [Bhatnagar and Ghose 2004b; Garbarino and Strabilevitz 2004]

and product types [Bhatnagar and Ghose 2004b; Bhatnagar et al. 2000; Pires et al. 2004], have all been shown to have impact on perceived risk. Based on TPB [Ajzen 1991], an individual chooses online shopping indirectly based on the probability that it will produce a given outcome.

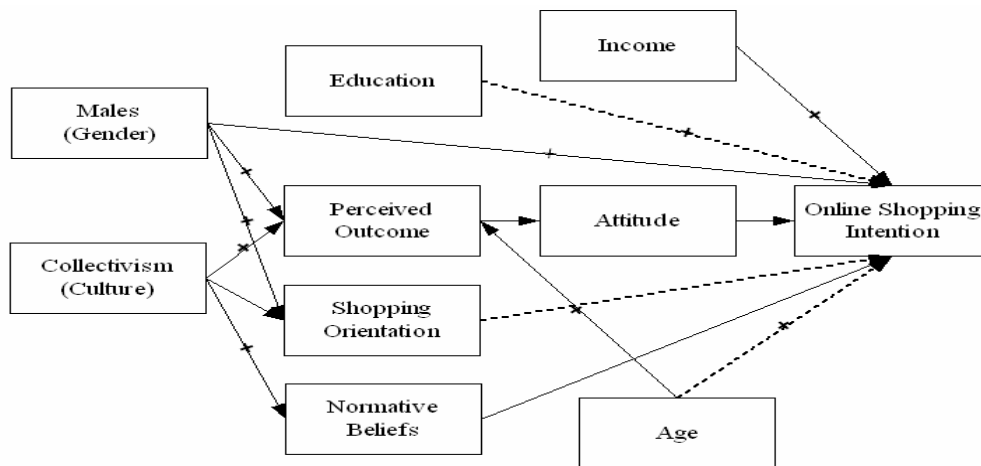


Figure 2. Effects of Consumer Demographic Factors on Online Shopping Intention

Shopping orientation. Shopping orientation, a new construct in OSAM, has significant impact on online shopping intention [Donthu and Garcia 1999; Korgaonkar and Wolin 1999; Li et al. 1999; Swaminathan et al. 1999]. Shopping orientation, a specific dimension of consumer lifestyle, is influenced by consumers’ normative beliefs or recommendations from others [Foucault and Scheufele 2002; Limayem et al. 2000]. In addition, consumer gender has an impact on shopping orientation [Rodgers and Harris 2003; Swaminathan et al. 1999]. However, the interaction between shopping orientation and other factors still remains unclear and needs further investigation.

Online experience. Online experience is unique in that it is formed during the navigation of online shopping sites rather than before or after shopping. Navigation of an online shopping site is only the first step toward shopping online and it does not guarantee an online transaction because consumers may abandon an intended purchase. It was reported that the number of aborted online transactions amounts to nearly four times as many as the number of complete transactions [Cho 2004]. The online shopping experience along with product type can influence consumer’s emotion online [Huang 2003]. Online experience (e.g., affection [Huang 2003; Lynch et al. 2001; Xia 2002]) and flow [Hoffman and Novak 1996; Novak et al. 2000] play an important role in the online navigation process and help determine whether a transaction will be finally carried out or not.

Shopping motivation. In TAM, the pre-assumed usefulness of an information system is to “enhance job performance” [Davis 1986], which emphasizes the pure utilitarian motivation for using a system. However, shopping, which has both utilitarian and hedonic motivations [Babin et al. 1994; Childers et al. 2001; Hirschman and Holbrook 1982], is different. Shopping motivation has both a direct and an indirect effect on online shopping intention through online experience, and affect in particular [Wolfenbarger and Gilly 2001; Xia 2002]. Internet experience influences consumers’ motivations for online shopping [Johnson et al. 2004; Novak et al. 2000].

Satisfaction. Satisfaction is users’ general feelings about past online shopping experience [Bhattacharjee 2001; Delone and Mclean 1992]. It is a stronger predictor of continuance (i.e., continue to use) intention than perceived usefulness because the effect of the latter decreases over time [Bhattacharjee 2001; Devaraj et al. 2003]. Since retaining consumers is becoming increasingly important as more and more consumers go online, consumers’ continuance intention is at least as important as, if not more than, their intention to choose online shopping. Satisfaction is predicted primarily according to consumer confirmation of expectations based on their experiences and secondarily by the perceived usefulness from the initial use of an information system [Chang et al. 2005]. Confirmation is a cognitive belief derived from prior experience [Bhattacharjee 2001]. It is of great importance to online retailers to gain better understanding of factors impacting online consumer satisfaction [McKinney et al. 2002]. Satisfaction is incorporated into OSAM as an extension to address the long-term continuance of online shopping. Satisfaction is an attitude construct that affects consumers’ behavioral intention [Devaraj et al. 2002]. Compared with pre-acceptance attitude construct, satisfaction reflects users’ post-acceptance attitude established during various stages of online shopping.

Consumer demographics. Consumer demographics (e.g., [Alreck and Settle 2002; Donthu and Garcia 1999; Korgaonkar and Wolin 1999; Levy 1999; Li et al. 1999; Slyke et al. 2002; Stafford et al. 2004; Susskind 2004]) can

affect online shopping intention both directly and indirectly through the aforementioned factors (i.e., perceived outcomes, shopping orientation, and shopping motivation) (see Figure 2). However, findings on the direct effects of age, education, and Internet experience on consumers' intention to shop online are mixed (denoted by dotted lines in Figure 1 and Figure 2) [Joines et al. 2003; Rohm and Swaminathan 2004; Stafford et al. 2004]. Since the population of online consumers and the pervasiveness of e-commerce have increased dramatically in the 21st century, the effects of demographic factors may require reexamination.

Based on the preceding discussion, a list of research questions and potential hypotheses that are predicted by the research model are listed in Appendix B.

3.3 Research Methodology for Testing OSAM

We must address some methodology issues to test OSAM. In this section, we first summarize research methodologies applied in previous studies at a macro level. Then, we discuss them at a micro level by highlighting important issues and suggesting possible solutions.

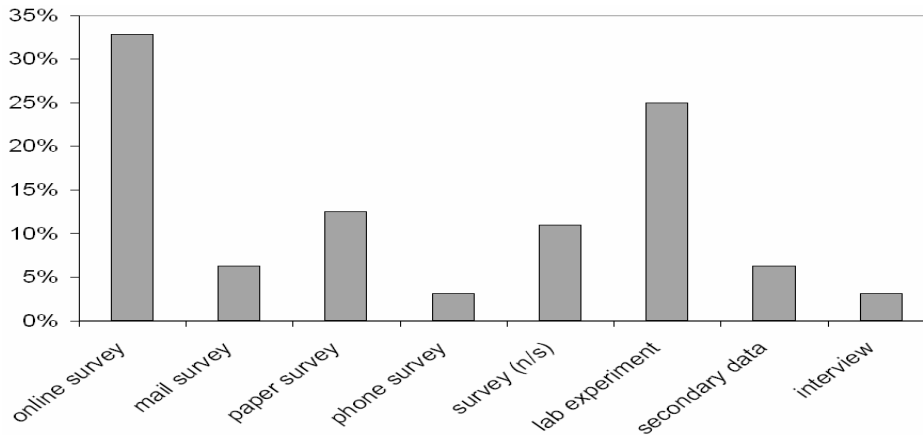


Figure 3. Percentage Distribution of Research Methods

As shown in Figure 3, survey is the most commonly used research method, accounting for over 65 percent of the surveyed studies. Since the research of online consumer behavior is exploratory by nature, most variables measured by survey questions deal with consumers' perception, attitude, and intention. Among various survey channels, web (online) is the most popular one, followed by paper (face-to-face), and then by mail and telephone.

Online surveys offer some advantages over traditional mail surveys, including greater turnaround time and less cost associated with postage and printing [Andrews et al. 2003]. Their format fits the nature of the shopping venue (i.e., online shopping stores) and online consumers. Theoretically, the Internet makes it possible to distribute surveys to the entire online population. One can easily conduct an online survey from anywhere, at anytime. There are two forms of online surveys, an asynchronous email survey and a synchronous Web-based survey. An email survey, using a "push" approach, has the advantage of allowing researchers to communicate with prospective respondents directly. A Web-based survey is superior due to its ability to automatically verify and store survey responses using database technology [Schwarz 1999]. Just like other types of surveys; however, an online survey suffers from the problems of self-selection and self-reporting [Schwarz 1999]. Self-reported data in any survey is subject to the fallibility of people's memories, idiosyncratic scale use, and even deliberate alteration through social desirability biases. Self-selection leads to non-probability sampling errors or bias in collecting data. In addition, it is more difficult to conduct probabilistic sampling in an online survey than in traditional surveys; and the low response rate problem can be further exacerbated when potential respondents encounter technical difficulties.

A hybrid approach that combines both email and Web-based surveys is recommended [Schwarz 1999]. Using hybrid approaches (e.g., any kind of combinations of observations, focus groups, individual interviews, email, Web-based, postal, and random digital dial telephone surveys) to collecting behavioral data has demonstrated advantages over a single approach, including improved quality of results and sample representativeness [Andrews et al. 2003]. However, research costs, the access to subjects, the scope of the research, and the nature of behavior under study may make hybrid approaches impractical or financially infeasible. One promising solution is to conduct small-scaled supplementary data collection in addition to a large-scaled survey.

Aside from survey methods, 25 percent of the studies that we have reviewed conducted controlled laboratory experiments. Such experiments can result in high internal validity, but the generalizability of the findings might be limited.

Therefore, given no time or economic limitations, an online survey, supplemented with other qualitative (e.g., interview) or quantitative methods (e.g. phone survey), seems to be appropriate for validating OSAM, assuming that several methodological issues (i.e., survey design, subject privacy and confidentiality, sampling and subject solicitation, distribution methods, and survey piloting) are properly addressed.

4. Discussion

As discussed above, consumer factors and their effects on online shopping intention and behavior have been studied from a variety of perspectives, and related research findings have greatly improved online retailing practice. As a relatively new research field, there are still a lot of research questions that remain unsolved. In this section, we identify some research issues and trends that merit further investigation. In addition, we discuss several research design issues that are of significance to future empirical studies. The research trends identified in this study also highlight a few managerial issues that should be appealing to online retailers.

4.1 Research Issues and Trends

Several research issues related to consumer online shopping emerged from the current study.

Hedonic motivation of online shopping. Our understanding of the hedonic aspect of online shopping and potential benefits obtained from experiential online shopping is limited. Experiential online shopping differs from goal-directed online shopping behavior in six aspects [Hoffman and Novak 1996]: (1) intrinsic vs. extrinsic motivation, (2) ritualized vs. instrumental orientation, (3) enduring vs. situational involvement, (4) hedonic vs. utilitarian benefits, (5) non-directed vs. directed search, and (6) navigational vs. goal-directed choice. The intrinsic motivation and long-term involvement in online shopping make experiential consumers more likely to be loyal than goal-directed consumers. In addition, since experiential consumers tend to navigate the web without specific searching goals, they are more impulsive and tend to make more purchases [Bellenger and Korgaonkar 1980].

However, the motivation for experiential online shopping has not been fully studied. The motivation and its antecedents and influences on online shopping behavior remain unknown. Along this direction, there are some interesting research questions that are worth to explore. For example, are females more likely to shop online for hedonic reasons than males, given the fact that they are more emotionally involved in shopping? Will cultural difference have any effect on consumers' intention of experiential online shopping? Will collectivistic consumers be more easily converted into experiential consumers than individualistic ones? Do experiential consumers favor certain product types? Experiential shoppers browse online mainly for auctions, ongoing hobby-type searches, and bargain hunting [Wolfenbarger and Gilly 2001]. They are likely to be interested in price-sensitive, expensive, or high-involvement products. The propositions need to be evaluated in future empirical studies.

Shift in shopping orientations. Despite different consumer clusters identified in different studies, there is a clear trend that the shopping orientations of online consumers have expanded beyond convenience and variety-seeking. Recreational, economic, and even social-oriented consumers can all be active online shoppers. The traditional search and experiential attributes of products are changed in an online shopping environment. For example, computer software and CDs are no longer considered as experience products but as search products because of the multimedia properties of the Internet, and apparel becomes experience products. Therefore, it is important for us to understand how to provide more recreational, experiencing, and socializing functions to meet the needs of diversified online consumers. Chat rooms, personal assistants, show-rooms, and virtual fitting rooms are possible options. What are temporal patterns of shopping orientations? It would be helpful to treat shopping orientation as a multi-dimensional rather than a simple factor.

Minimization of risks with online shopping. The scarcity of studies on how to reduce online shopping risks does not meet the demand of increasing awareness of risks associated with online shopping. Consumers were more concerned about attributes of Web sites associated with perceived risks (e.g., security of information and vendor reliability) than those associated with perceived gains (e.g., convenience) [Bhatnagar and Ghose 2004a], which underlies the importance of reducing online shopping uncertainty and risks. One of the approaches that have been explored is to provide Web assurance—a third-party service that improves the reliability of specific information provided on a web site to help instill consumer confidence in an online retailer, and to ultimately increase consumers' intention of purchasing online. However, a higher level of purchasing intention was only generated for consumers when they did not observe retailer disclosures and their familiarity with products was low [Mauldin and Arunachalam 2002]. The second alternative is by manipulating product brand names [Huang et al. 2004]. Improving organizational reputation is a third alternative, which is able to trade off the effect of perceived risks on consumer shopping attitude and behavior [Ruyter et al. 2001]. When an online retailer has a good reputation, even if risks are high, consumers still have confidence in online transactions [Ruyter et al. 2001]. However, it may take a long time for the above approach to become effective. Therefore, other effective approaches should be explored in future research. For example, will

“word of mouth”, the assurance from families, friends, or online social networks, reduce the perceived risks of online consumers? Trust [Torkzadeh and Dhillon 2002], which measures the willingness to undertake risks, has been investigated in recent studies of online shopping adoption (e.g., [Chang et al. 2005]).

Providing positive online experience. Online experience, a relatively new human factor identified in this research field, has rarely been examined in terms of its effect on online shopping behavior. Online experience during a shopping event is an important determinant of whether the online navigation will lead to a successful purchase transaction. The effect is moderated by consumers’ motivation to shop online [Wolfenbarger and Gilly 2001; Xia 2002]. However, the antecedents of either a positive or a negative online experience are not clear yet.

Lynch et al. [2001] accredited the lack of support for the positive relationship between emotion and intention to purchase a CD player online by North American to their past experience and the lack of experiential attributes of purchased products. Since online experience is not a well-established factor in the traditional TAM, it is insufficient to deduce its effect theoretically. Exploratory empirical studies on how online experience affects consumer online shopping behavior should be conducted. Moreover, the assumed moderating effects of consumer experience and purchased products on the relationship between online experience and online shopping acceptance should be investigated. Furthermore, some studies employ self-reported measures and others use stimuli to trigger certain online experiences. How to appropriately measure online experience is difficult and should be carefully designed in future studies.

Consumer acceptance of e-services. In the extant literature, e-services have been studied either exclusively [Featherman and Pavlou 2003; Ruyter et al. 2001] or along with other product types [Brown et al. 2003; Pires et al. 2004]. Given the common characteristics shared between e-services and online goods, the OSAM model proposed in this study can be extended to e-services. However, the unique features of e-services in relation to online goods should not be overlooked. For example, the decision for consumers to adopt e-services is more complex and consumers perceive more risks with purchasing e-services than purchasing online goods [Featherman and Pavlou 2003]. The relative importance of the risk components varies between different buying situations [Pires et al. 2004]. For example, financial risks are ranked the highest for online goods purchasing, and psychological risks are ranked the highest for online service purchasing. With more traditional services available online (e.g., online banking and legal consulting), consumer acceptance and usage of e-services require separate studies.

Consumer loyalty. The importance of consumer loyalty to online shopping is receiving better recognition as the population of online consumers increases. The importance of consumer loyalty has been long recognized in traditional businesses by the fact that increasing the consumer retention rate by 5% can increase profits by anywhere from 25% to 95% [Reichheld and Schefer 2000b]. This classic loyalty economics pattern—early losses, followed by rising profits, is even more exaggerated for e-commerce [Reichheld and Schefer 2000a], because online consumers tend to consolidate their purchases with one primary online retailer. However, few antecedents of the online consumer loyalty have been discovered so far. Loyal online consumers not only purchase more, but also frequently refer new consumers to the preferred online retailers (a subjective norm construct). This is an important antecedent of consumers’ intention to adopt online shopping [Limayem et al. 2000]. These new consumers are a major source of future loyal consumers [Reichheld and Schefer 2000b]. Referrals and recommendations are lucrative to traditional commerce. The Internet amplifies the referral/recommendation effect because word spreads faster via the Internet than traditional word of mouth. Such a virtuous cycle makes consumer loyalty more important for e-business than ever before.

Contrary to the argument that low switching costs lead to low loyalty to online stores, it has been found that consumer loyalty toward online shopping and online stores was significantly higher than their loyalty toward conventional shopping and stores [Devaraj et al. 2003]. The measurement of repurchase intention increased the chance of repeated purchases and shortened the time elapse before the first repeated purchase, but the effects decayed rapidly after 3 months [Chandon et al. 2004]. Consumers’ time preferences and relative costs are determining factors for their lock-in with providers [Zauberman 2003]. That being said, there are still a lot of questions about online consumer loyalty. For example, besides satisfaction, measurement, and cost, what are other factors that may improve online consumer loyalty? Will facilitating referral or extending product range broaden and deepen consumer-retailer relationships? How to improve the perceived outcome of online shopping for experienced online consumers?

Mobile commerce. The rapid growth of mobile commerce is associated with an increasing level of consumer experience with mobile devices. As mobile commerce grows to be an alternative shopping channel to traditional e-commerce, the effects of consumer factors included in OSAM may change accordingly.

Evolution of consumer acceptance of online shopping. Some trends in consumer online behavior evolution were revealed in this study by comparing the findings of different studies conducted over different periods of time. Given the rapidly changing online shopping environment, longitudinal studies can provide better insights into the involvement of consumer online shopping behavior over time. Some research issues such as consumer loyalty can only be empirically studied via longitudinal studies. However, so far, there exist only a few longitudinal studies on

consumer online behavior. For example, in a three-month study by [Limayem et al. 2000], consumer's online shopping intention was measured with an up-front survey and their real online shopping behavior (i.e., the number of purchases through the Web) during the period was collected through a follow-up survey. That study showed the causality of consumers' online shopping intention and actual behavior, but did not clearly explain the change of intention and behavior over time and the antecedents of the changes. The effects of trust, economic conditions, education, and technical savvy on online shopping behavior over time were investigated in another study [Bagchi and Mahmood 2004] by using secondary data gathered by TNS Interactive between the years of 2000 and 2002. The TNS data was collected from a macro perspective, in which online shopping behavior was defined as the ratio of online shoppers to the total population of a nation, and the economic condition was measured with GDP per capita. Thus, the data did not permit the study [Bagchi and Mahmood 2004] to reveal online shopping intention, behavior, or their antecedents, which are important to online retailers whose motivation is to increase their profits.

Resource constraint. In the current OSAM model, we ignore resource constraints. It is suggested that, if there are constraints on the available resources, spontaneously evoked affective reactions rather than cognitions tend to have a greater impact on choice [Shiv and Fredorikhin 1999]". Thus, in predicting consumer decisions about whether to shop online, the relative effects of perceived outcome and online experience could be moderated by the amount of resources that are available to consumers.

Product characteristics. Consumer acceptance of online shopping may vary when shopping for different products [Zhou et al. 2004]. For example, consumers perceived different risks with different products [Bhatnagar and Ghose 2004b; Bhatnagar et al. 2000; Pires et al. 2004]. As discussed earlier, consumer shopping orientation and the effect of consumer innovativeness may vary with specific products. The effect of online experience on online shopping intention is also contingent upon product types. Unfortunately, product characteristics [Ba et al. 2005; Liang and Jin-Shiang 1998] have not received enough attention in the extant research on online shopping. Most of the past studies either dealt with a single product type for the sake of simplicity and controllability or failed to examine the moderating effect of product type when more than one product type was used. These studies used different criteria for selecting products, consequently their findings are incomparable. Therefore, a new classification taxonomy of online products should be developed in order to standardize and systematically categorize studies on online shopping behavior that involve different products. Researchers should always bear the possible moderating effect of product type in mind while studying online shopping behavior.

Age. Age factor should be further studied not only in terms of its effect on online shopping intention, but on shopping motivation, orientation, and behavior as well. For example, do people of different age groups shop online for different purposes? How will the effects of age evolve as the Internet population grows?

4.2 Managerial issues

OSAM can not only guide further research on online consumer research but also suggest online marketing strategies and principles. For online retailers, the knowledge about the factors that may influence consumers' online shopping intention and acceptance can help them develop appropriate online marketing strategies to entice new consumers and to retain existing consumers.

Personalization. Online consumers are becoming increasingly diversified. It is shown in this study that various consumer factors influence online shopping. Accordingly, the requirements for information content and presentation format provided by online retailers may differ. Personalization of an online shopping environment includes the personalization of information content and presentation, transactions, online help, and consumer services. Personalized online shopping environments can potentially improve the online experience and enhance consumer loyalty. For example, a pleasant and visually-appealing online shopping environment that also provides a sense of online community and interactivity may boost the exploration and impulsive shopping of experiential shoppers; and an easy and controllable online shopping environment might fit goal-oriented shoppers. Therefore, an optimal online marketing strategy is to personalize shopping environments to meet the needs and preferences of different consumers (e.g., goal-oriented or experiential, and novice or experienced).

A big challenge with personalization is how to collect personal information. Currently, there are three popular approaches—direct consumer solicitation, explicit feedback (collecting personal information during online registration), and implicit approach (identifying personal interests by mining consumers' web browsing behavior recorded in web logs). The first two approaches can better predict consumer online shopping behavior than click-streams, but they can be intrusive and time/labor-consuming. It has been reported by NetIQ Web Trends Inc. that 35 percent of online consumers are kept away from online shopping sites because they are requested to provide too much information by the site. Privacy protection and concision are the two most important criteria in consumer solicitation and online registration. In comparison, the implicit approach can overcome the above constraints but requires advanced intelligent technologies to infer consumer preferences.

Targeting at female consumers. Although women shop online less than men at present, they represent greater

growth potential particularly given the fact that women account for over 70% of all purchases made in traditional stores. Females have great potential to dominate the future of online shopping. In fact, American women are already responsible for the majority of Internet traffic—51.4 percent by September 2003 (www.Hitwise.com), and are predicted to account for 52 percent of total e-commerce revenue in 2007 (www.Jupiter.com). Therefore, improving online shopping environments to attract female consumers should be a top priority for online retailers. Specific marketing strategies targeting female consumers should be carefully designed to achieve this goal.

Improving interpersonal communication by providing online forums, chat rooms, and incentives for consumers to share their experiences with their friends and by facilitating online referrals might entice more females to shop online, as females have been shown to be more social-prone than their male counterparts. They are more influenced by normative beliefs. For example, an online shopping site recommended by a friend can lead to both a greater reduction in perceived risks and a stronger increase in willingness to buy online for women than for men [Garbarino and Strabilevitz 2004].

Lack of tactile feedback is a big disadvantage of shopping of experiential products online, especially for female consumers. Online retailers should try to provide better description and display of online products by adopting new information technologies such as 3D animation and virtual showrooms.

4.3 Limitations and Future Research

While we have mainly focused on consumer factors in online shopping research, there are other system-, product/service-, and vendor-related factors that could be important predictors of consumer acceptance of online shopping. In addition, trust is a complex construct that has been widely studied in online shopping acceptance research (e.g., [Pavlou 2003]). Also we only focused on the related journals in IS and marketing possibly leaving out related literature from other fields such as psychology.

This study shed light on some future research issues. There is a need for a better understanding of how to improve consumer loyalty. Learning about the influential factors for retaining consumers might be one of the best long-term strategies for online retailers. In addition, a meta analysis to handle similar and contradictory results of surveyed studies could be carried out in future. Further, there is a need for testing and elaborating on the OSAM model proposed in this paper. There is much more to be learned about consumer online shopping acceptance through rigorous empirical studies. The model and related research issues can serve as a road map for both research and practice online shopping.

ACKNOWLEDGMENTS

The authors would like to thank three anonymous reviewers for their valuable comments on this paper, and thank Robert Nolker for his help in proofreading the paper.

REFERENCES

- Agarwal, R. and Prasad, J., "a Conceptual and Operational Definition of Personal Innovativeness in the Domain of Information Technology," *Information Systems Research* Vol. 9, No. 2: 204–215, 1998.
- Ajzen, I., "the Theory of Planned Behavior," *Organizational Behavior and Human Decision Processes* Vol. 50, 179-211, 1991.
- Ajzen, I. and Fishbein, M., *Understanding Attitude and Predicting Social Behavior*. Prentice-Hall, Englewood Cliffs, NJ, 1980.
- Alreck, P. and Settle, R. B., "Gender Effects on Internet, Catalogue and Store Shopping," *Journal of Database Marketing* Vol. 9, No. 2:150-162, 2002.
- Andrews, D., Nonnecke, B. and Preece, J., "Electronic Survey Methodology: a Case Study in Reaching Hard To Involve Internet Users," *International Journal of Human-Computer Interaction* Vol. 16, No. 2:185-210, 2003.
- Ba, S., Stallaert, J., Whinston, A. B. and Zhang, H., "Choice of Transaction Channels: The Effects of Product Characteristics on Market Evolution," *Journal of Management Information Systems* Vol. 21, No. 4:173-198, 2005.
- Babin, B. J., Darden, W. R. and Griffin, M., "Work and/or Fun: Measuring Hedonic and Utilitarian Shopping Value," *Journal of Consumer Research* Vol. 20, No. 4: 644-656, 1994.
- Bagchi, K. and Mahmood, M. A., "a Longitudinal Study of Business Model of On-Line Shopping Behavior Using a Latent Growth Curve Approach." Proceedings of the Tenth Americas Conference on Information Systems, New York, NY, 2004.
- Bellenger, D. N. and Korgaonkar, P. K., "Profiling the Recreational Shopper," *Journal of Retailing* Vol. 56, 77-92, 1980.
- Bellman, S., Lohse, G. L. and Johnson, E. J., "Predictors of Online Buying Behavior," *Communications of the ACM* Vol. 42, No. 12 32-38, 1999.

- Bhatnagar, A. and Ghose, S., "A Latent Class Segmentation Analysis of E-Shoppers," *Journal of Business Research* Vol. 57, 758-767, 2004a.
- Bhatnagar, A. and Ghose, S., "Segmenting Consumers Based on the Benefits and Risks of Internet Shopping," *Journal of Business Research* Vol. 57, 1352-1360, 2004b.
- Bhatnagar, A., Misra, S. and Rao, H. R., "on Risk, Convenience, and Internet Shopping Behavior," *Communications of the ACM* Vol. 43, No. 11: 98-105, 2000.
- Bhattacharjee, A., "Understanding Information Systems Continuance: An Expectation-Confirmation Model," *MIS Quarterly* Vol. 25, No. 3: 351-370, 2001.
- Brengman, M., Geuens, M., Wijters, B., Smith, S. M. and Swinyard, W. R., "Segmenting Internet Shoppers Based on Their Web-Usage-Related Lifestyle: a Cross-Cultural Validation," *Journal of Business Research* Vol. 58, 79-88, 2005.
- Brown, M., Pope, N. and Voges, K., "Buying or Browsing? An Exploration of Shopping Orientations and Online Purchase Intention," *European Journal of Marketing* Vol. 37, No. 11/12: 1666-1685, 2003.
- Chandon, P., Morwitz, V. G. and Reinartz, W. J., "The Short- and Long-Term Affects of Measuring Intent to Repurchase," *Journal of Consumer Research* Vol. 31, 566-572, 2004.
- Chang, M. K., Cheung, W. and Lai, V. S., "Literature Derived Reference Models for the Adoption of Online Shopping," *Information & Management* Vol. 42, 543-559, 2005.
- Chau, P. Y. K., Cole, M., 45, A. P. M., Montoya-Weiss, M. and O'keefe, R. M., "Cultural Differences in the Online Behavior of Consumers," *Communications of the ACM* Vol. 45, No. 10: 138-143, 2002.
- Chen, L.-D., Gillenson, M. L. and Sherrell, D. L., "Enticing Online Consumers: An Extended Technology Acceptance Perspective," *Information & Management* Vol. 39, No. 8: 705-719, 2002.
- Childers, T., Carr, C., Peck, J. and Carson, S., "Hedonic and Utilitarian Motivations for Online Retail Shopping Behavior," *Journal of Retailing* Vol. 77, 511-535, 2001.
- Cho, J., "Likelihood To Abort An Online Transaction: Influences From Cognitive Evaluations, Attitudes, and Behavioral Variables," *Information & Management* Vol. 41, 827-838, 2004.
- Citrin, A. V., Sprott, D. E., Silverman, S. N. and Stem Jr, D. E., "Adoption of Internet Shopping: the Role of Consumer Innovativeness," *Industrial Management & Data Systems* Vol. 100, No. 7: 294-301, 2000.
- Citrin, A. V., Stem Jr., D. E., Spangenberg, E. R. and Clark, M. J., "Consumer Need for Tactile Input: An Internet Retailing Challenge," *Journal of Business Research* Vol. 56, No. 11: 915-923, 2003.
- Csikszentmihalyi, M., *Flow: the Psychology of Optimal Experience*. Harper and Row, New York, 1990.
- Davis, F. D., A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results. Doctoral Dissertation Thesis, MIT, 1986.
- Davis, F. D., "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *MIS Quarterly* Vol. 13, No. 3: 319-340, 1989.
- Delone, W. H. and Mclean, E. R., "Information Systems Success: The Quest for the Dependent Variable," *Information Systems Research* Vol. 3, No. 1: 60-95, 1992.
- Devaraj, S., Fan, M. and Kohli, R., "Antecedents of B2C Channel Satisfaction and Preference: Validating E-Commerce Metrics," *Information Systems Research* Vol. 13, No. 3: 316-334, 2002.
- Devaraj, S., Fan, M. and Kohli, R., "E-Loyalty: Elusive Ideal or Competitive Edge?" *Communications of the ACM* Vol. 46, No. 9: 184-191, 2003.
- Donthu, N. and Garcia, A., "the Internet Shopper," *Journal of Advertising Research* Vol. 39, No. 3 52-58, 1999.
- Featherman, M. and Pavlou, P. A., "Predicting E-Services Adoption: a Perceived Risk Facets Perspective," *International Journal of Human-Computer Studies* Vol. 59, 451-474, 2003.
- Foucault, B. and Scheufele, D., "Web vs. Campus Store? Why Students Buy Textbooks Online," *Journal of Consumer Marketing* Vol. 19, No. 4/5: 409-424, 2002.
- Garbarino, E. and Strabilevitz, M., "Gender Differences in the Perceived Risk of Buying Online and the Effects of Receiving a Site Recommendation," *Journal of Business Research* Vol. 57, 768-775, 2004.
- Goldsmith, R. E., "Using the Domain Specific Innovativeness Scale to Identify Innovative Internet Consumers," *Internet Research-Electronic Networking Applications and Policy* Vol. 11, No. 2: 149-158, 2001.
- Goldsmith, R. E., "Explaining and Predicting Consumer Intension to Purchase Over the Internet: An Exploratory Study," *Journal of Marketing Theory and Practice* Vol. 10, No. 2: 22-28, 2002.
- Hirschman, E. C. and Holbrook, M. B., "Hedonic Consumption: Emerging Concepts, Methods and Propositions," *Journal of Marketing* Vol. 46, No. 3: 92-101, 1982.
- Hoffman, D. L. and Novak, T. P., "Marketing in Hypermedia Computer-Mediated Environments: Conceptual Foundations," *Journal of Marketing* Vol. 60, 50-68, 1996.
- Hofstede, G., *Culture's Consequences: International Differences in Work-Related Values*. Sage, Newbury Park, CA,

- 1984.
- Hofstede, G., *Cultures and Organizations: Software of the Mind*. McGraw-Hill, London, 1991.
- Huang, M.-H., "Modeling Virtual Exploratory and Shopping Dynamics: An Environmental Psychology Approach," *Information & Management* Vol. 41, No. 1: 39-47, 2003.
- Huang, W.-Y., Schrank, H. and Dubinsky, A. J., "Effect of Brand Name on Consumers' Risk Perceptions of Online Shopping," *Journal of Consumer Behavior* Vol. 4, No. 1: 40-50, 2004.
- Jarvenpaa, S. L. and Todd, P. A., "Consumer Reactions To Electronic Shopping on the World Wide Web," *International Journal of Electronic Commerce* Vol. 2, 59-88, 1997.
- Jarvenpaa, S. L. and Tractinsky, N., "Consumer Trust in an Internet Store: A Cross-Cultural Validation," *Journal of Computer-Mediated Communication* Vol. 5, No. 2, 1999.
- Jarvenpaa, S. L., Tractinsky, N. and Vitale, M., "Consumer Trust in an Internet Store," *Information Technology and Management* Vol. 1, No. 12: 45-71, 1999.
- Johnson, C. A., "Us Ecommerce: 2005 to 2010." in Forrester, 2005.
- Johnson, E. J., Moe, W. W., Fader, P. S., Bellman, S. and Lohse, G. L., "On the Depth and Dynamics of Online Search Behavior," *Management Science* Vol. 50, No. 3: 299-309, 2004.
- Joines, J., Scherer, C. and Scheufele, D., "Exploring Motivations for Consumer Web Use and Their Implications for E-Commerce," *Journal of Consumer Marketing* Vol. 20, No. 2: 90-109, 2003.
- Koivumäki, T., "Customer Satisfaction and Purchasing Behaviour in a Web-Based Shopping Environment," *Electronic Markets* Vol. 11, No. 3: 186-193, 2001.
- Kolsaker, A., Lee-Kelley, L. and Choy, P. C., "The Reluctant Hong Kong Consumer: Purchasing Travel Online," *International Journal of Consumer Studies* Vol. 28, No. 3: 295-304, 2004.
- Korgaonkar, P., Silverblatt, R. and Becerra, E., "Hispanics and Patronage Preferences for Shopping From the Internet," *Journal of Computer-Mediated Communication* Vol. 9, No. 3, 2004.
- Korgaonkar, P. K. and Wolin, L. D., "A Multivariate Analysis of Web Usage," *Journal of Advertising Research* Vol. 39, No. 2: 53-68, 1999.
- Levy, S., "How the Internet Is Changing America." in Levy: E-Life, 38-42, 1999.
- Li, H., Kuo, C. and Russell, M. G., "The Impact of Perceived Channel Utilities, Shopping Orientations, and Demographics on the Consumer's Online Buying Behavior," *Journal of Computer-Mediated Communication*, Vol. 5, No. 2, 1999.
- Liang, T.-P. and Jin-Shiang, H., "An Empirical Study on Consumer Acceptance of Products in Electronic Markets: a Transaction Cost Model," *Decision Support Systems* Vol. 24, No. 1: 29-43, 1998.
- Liao, Z. and Cheung, M. T., "Internet-Based E-Shopping and Consumer Attitudes an Empirical Study," *Information & Management* Vol. 38, No. 5: 299-306, 2001.
- Limayem, M., Khalifa, M. and Frini, A., "What Makes Consumers Buy From Internet? A Longitudinal Study of Online Shopping," *IEEE Transactions on Systems, Man, and Cybernetics-Part A: Systems and Humans* Vol. 30, No. 4: 421-432, 2000.
- Lynch, P. D. and Beck, J. C., "Profiles of Internet Buyers in 20 Countries: Evidence for Region Specific Strategies," *Journal of International Business Studies* Vol. 32, 725-748, 2001.
- Lynch, P. D., Kent, R. J. and Srinivasan, S. S., "The Global Internet Shopper: Evidence From Shopping Tasks in Twelve Countries," *Journal of Advertising Research* Vol. 41, No. 3: 15-23, 2001.
- Mahmood, M. A., Bagchi, K. and Ford, T. C., "On-Line Shopping Behavior: Cross-Country Empirical Research," *International Journal of Electronic Commerce* Vol. 9, No. 1: 9-30, 2004.
- Mathwick, C. and Rigdon, E., "Play, Flow, and the Online Search Experience," *Journal of Consumer Research* Vol. 31, 324-332, 2004.
- Mauldin, E. and Arunachalam, V., "An Experimental Examination of Alternative Forms of Web Assurance for Business-To-Consumer E-Commerce," *Journal of Information Systems* Vol. 16, No. 1: 33-55, 2002.
- Mckinney, L. N., "Internet Shopping Orientation Segments: An Exploration of Differences in Consumer Behavior," *Family and Consumer Sciences Research Journal* Vol. 32, No. 4: 408-433, 2004.
- Mckinney, V., Yoon, K. and Zahedi, F., "The Measurement of Web-Customer Satisfaction: An Expectation and Disconfirmation Approach," *Information Systems Research* Vol. 13, No. 3: 296-3315, 2002.
- Moe, W. W. and Pader, P. S., "Dynamic Conversion Behavior at E-Commerce Site," *Management Science* Vol., 326-336, 2004.
- Nah, F. F.-H. and Davis, S., "HCI Research Issues in E-Commerce," *Journal of Electronic Commerce Research* Vol. 3, No. 3: 98-113, 2002.
- Novak, T. P., Hoffman, D. L. and Yung, Y.-F., "Measuring the Customer Experience in Online Environments: A Structural Modeling Approach," *Marketing Science* Vol. 19, No. 1: 22-42, 2000.

- Nysveen, H. and Pedersen, P., "An Exploratory Study of Customers' Perception of Company Web Sites offering Various Interactive Applications: Moderating Effects of Customers' Internet Experience," *Decision Support Systems* Vol. 37, No. 1: 137-150, 2004.
- O'keefe, R. M., Cole, M., Chau, P. Y. K., Massey, A., Montoya-Weiss, M. and Perry, M., "From the User Interface to the Consumer Interface: Results from a Global Experiment," *International Journal of Human-Computer Studies* Vol. 53, No. 4: 611-628, 2000.
- Park, C., "A Model on the Online Buying Intention with Consumer Characteristics and Product Type." Proceedings of Ausweb, The Eighth Australian World Wide Web Conference, Queensland, Australia, 2002.
- Park, C. and Jun, J.-K., "A Cross-Cultural Comparison of Internet Buying Behavior," *International Marketing Review* Vol. 20, No. 5: 534-554, 2003.
- Park, J., Lee, D. and Ahn, J., "Risk-Focused E-Commerce Adoption Model: a Cross-Country Study," *Journal of Global Information Management* Vol. 7, 6-30, 2004.
- Pavlou, P. A., "Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model," *International Journal of Electronic Commerce* Vol. 7, No. 3: 101-134, 2003.
- Pires, G., Stanton, J. and Eckford, A., "Influences on the Perceived Risk of Purchasing Online," *Journal of Consumer Behaviour* Vol. 4, No. 2: 118-131, 2004.
- Reichheld, F. F. and Schefter, P., "The Economics of E-Loyalty." in Harvard Business School Working Knowledge, 2000a.
- Reichheld, F. F. and Schefter, P., "E-Loyalty: Your Secret Weapon on the Web," *Harvard Business Review* Vol., No. 105-113, 2000b.
- Rodgers, S. and Harris, M., "Gender and E-Commerce: An Exploratory Study," *Journal of Advertising Research* Vol. 43, No. 3: 322-330, 2003.
- Rogers, E. M., *Diffusion of Innovations*, 4th Edition. The Free Press: Macmillan Publishing Co., New York, 1995.
- Rohm, A. J. and Swaminathan, V., "A Typology of Online Shoppers Based on Shopping Motivations," *Journal of Business Research* Vol. 57, No. 7: 748-758, 2004.
- Ruyter, K., Wetzels, M. and Kleijnen, M., "Customer Adoption of E-Service: An Experimental Study," *International Journal of Service Industry Management* Vol. 12, No. 2: 184-208, 2001.
- Schaupp, L. C. and Bélanger, F., "A Conjoint Analysis of Online Consumer Satisfaction," *Journal of Electronic Commerce Research* Vol. 6, No. 2: 95-111, 2005.
- Schwarz, N., "Self-Reports: How the Questions Shape the Answers." *American Psychologist* Vol. 54, No. 2: 93-105, 1999.
- Shim, S. and Kotsiopulos, A., "A Typology of Apparel Shopping Orientation Segments Among Female Consumers," *Clothing and Textiles Research Journal* Vol. 12, 73-85, 1993.
- Shiu, E. C.-C. and Dawson, J. A., "Cross-National Consumer Segmentation of Internet Shopping for Britain and Taiwan," *the Service Industries Journal* Vol. 22, No. 1: 147-166, 2002.
- Shiv, B. and Fredorikhin, A., "Heart and Mind in Conflict: the Interplay of Affect and Cognition in Consumer Decision Making," *Journal of Consumer Research* Vol. 26, 278-292, 1999.
- Sin, L. and Tse, A., "Profiling Internet Shoppers in Hong Kong: Demographic, Psychographic, Attitudinal and Experiential Factors," *Journal of Interactive Marketing* Vol. 15, 1 7-29, 2002.
- Slyke, C. V., Comunale, C. L. and Belanger, F., "Gender Differences in Perceptions of Web-Based Shopping," *Communications of the ACM* Vol. 45, No. 7: 82-86, 2002.
- Solomon, K., "Revenge of the Bots." in the Industry Standard, 1999.
- Stafford, T. F., Turan, A. and Raisinghani, M. S., "International and Cross-Cultural Influences on Online Shopping Behavior," *Journal of Global Information Management* Vol., 7, No. 2: 70-87, 2004.
- Stephenson, P. R. and Willett, R. P., "Analysis of Consumers' Retail Patronage Strategies." in *Marketing Involvement in Society and the Economy* (Ed. P. R. McDonald). American Marketing Association, Chicago, IL, 1969.
- Stone, G. P., "City and Urban Identification: Observations on the Social Psychology of City Life", *American Journal of Sociology* Vol. 60, 36-45, 1954.
- Susskind, A., "Electronic Commerce and World Wide Web Apprehensiveness: An Examination of Consumers' Perceptions of the World Wide Web," *Journal of Computer-Mediated Communication*, Vol. 9, No. 3, 2004.
- Swaminathan, V., Lepkowska-White, E. and Rao, B. P., "Browsers or Buyers in Cyberspace? An Investigation of Factors Influencing Electronic Exchange," *Journal of Computer-Mediated Communication*, Vol. 5, No. 2, 1999.
- Torkzadeh, G. and Dhillon, G., "Measuring Factors That Influence the Success of Internet Commerce," *Information Systems Research* Vol. 13, No. 2: 187-204, 2002.
- Venkatesh, V. and Morris, M. G., "Why Don't Men Ever Stop To Ask for Directions? Gender, Social Influence, and Their Role in Technology Acceptance and Usage Behavior," *MIS Quarterly* Vol. 24, No. 1: 115-139, 2000.

- Weber, E. U. and Hsee, C., "Cross-Cultural Differences in Risk Perception, But Cross-Cultural Similarities in Attitudes Towards Perceived Risk," *Management Science* Vol. 44, 1205-1217, 1998.
- Wee, K. N. L. and Ramachandra, R., "Cyberbuying in China, Hong Kong and Singapore: Tracking the Who, Where, Why and What Online Buying," *International Journal of Retail & Distribution Management* Vol. 28, No. 7: 307-316, 2000.
- Wolfenbarger, M. and Gilly, M., "Shopping Online for Freedom, Control, and Fun," *California Management Review* Vol. 43, No. 2: 34-56, 2001.
- Xia, L., "Affect As Information: the Role of Affect in Consumer Online Behaviors," *Advances in Consumer Research* Vol. 29, No. 1 93-100, 2002.
- Yang, B. and Lester, D., "Attitudes Toward Buying Online," *Cyberpsychology & Behavior* Vol. 7, No. 1: 85-92, 2004.
- Zauberman, G., "The Intertemporal Dynamics of Consumer Lock-In," *Journal of Consumer Research* Vol. 30, 405-419, 2003.
- Zhou, L., Chiang, W. Y. and Zhang, D., "Discovering Rules for Predicting Customers' Attitude Toward Internet Retailers," *Journal of Electronic Commerce Research* Vol. 5, No. 4: 228-238, 2004.

APPENDIX A

The Distribution of Selected Papers across Journals

Journal Name*	# Articles from Sample
<i>Advances in Consumer Research</i>	1
<i>California Management Review</i>	1
Communications of the ACM	4
<i>CyberPsychology & Behavior</i>	1
Decision Support Systems	2
<i>Electronic Markets</i>	1
<i>European Journal of Marketing</i>	1
<i>IEEE Transactions on Systems, Man, and Cybernetics-Part A: Systems and Humans</i>	1
<i>Industrial Management & Data Systems</i>	1
Information & Management	4
Information Systems Research	3
<i>Information Technology and Management</i>	1
<i>International Journal of Consumer Studies</i>	1
International Journal of Electronic Commerce	3
International Journal of Human-computer Studies	2
<i>International Journal of Retail & Distribution Management</i>	1
<i>International Journal of Service Industry Management</i>	1
<i>International Marketing Review</i>	1
<i>Internet Research-Electronic Networking Applications and Policy</i>	1
Journal of Advertising Research	3
Journal of Business Research	5
Journal of Computer Mediated Communication	5
Journal of Consumer Behavior	2
Journal of Consumer Marketing	2
Journal of Consumer Research	2
<i>Journal of Database Marketing</i>	1
Journal of Global Information Management	2
<i>Journal of Information Systems</i>	1
<i>Journal of Interactive Marketing</i>	1
<i>Journal of International Business Studies</i>	1
<i>Journal of Marketing</i>	1
<i>Journal of Marketing Theory and Practice</i>	1
Journal of Retailing	2
Management Science	2
Marketing Science	1
MIS Quarterly	1
TOTAL	64

*Articles from journals in italics were identified from the bibliographies of other articles.

APPENDIX B

A list of research questions (RQ_i) and potential hypotheses (H_i) that are predicted by the OSAM (organized by dependent variables):

- Antecedents of online shopping (usage behavior or experience)
- H1: Online shopping intention is positively associated with online shopping.
- Antecedents of online shopping intention
- H2a: Income is positively associated with online shopping intention.
- H2b: Gender has an impact on online shopping intention such that males more preferable to online shopping.
- H2c: Attitude toward online shopping is positively associated with online shopping intention.
- H2d: Normative beliefs are positively associated with online shopping intention.
 - H2d_i: The relationship between normative beliefs and online shopping intention is moderated by product types.
 - H2d_{ii}: The relationship between normative beliefs and online shopping intention is moderated by gender such that females are more subject to normative beliefs.
- H2e: Online shopping experience is positively associated with online shopping intention.
- H2f: Online experience has a positive impact on online shopping intention.
 - H2f_i: The relationship between online experience and online shopping intention is moderated by product types such that the relationship is stronger for high-touch, experiential products than low-touch, standardized products.
 - H2f_{ii}: The relationship between online experience and online shopping intention is moderated by online shopping experience such that the relationship is stronger for consumers with less experience.
- H2h: Consumers' level of satisfaction with past online shopping experiences is positively associated with their continuous online shopping intention.
- H2i: Shopping motivation has an influence on consumer online shopping intention such that utilitarian consumers are more likely to shop online when a pure text (less interactive) environment is provided.
- H2j: Entertainment shopping orientation of collectivistic consumers is positively associated with their online shopping intention.
- RQ1~4: Is age/personal innovativeness/Internet experience/the level of education associated with online shopping intention?
- Antecedents of attitude
- H3a: Negative perceived outcome is negatively associated with attitude toward online shopping.
- H3b: Positive perceived outcome is positively associated with attitude toward online shopping.
- Antecedents of perceived outcome
- H4a: Gender influences the perceived outcome of online shopping such that females perceive worse outcomes than males.
- H4b: Age is positively associated with the perceived outcome of online shopping such that older consumers perceive better outcomes.
- H4c: Internet experience is positively associated with the perceived outcome of online shopping such that consumers with more Internet experience perceive better outcomes.
- H4d: Culture has an impact on the perceived outcome of online shopping such that consumers with higher collectivism perceive better outcomes.
- H4e: Satisfaction with past online shopping is positively associated with the perceived outcome.
- H4f: Past online shopping experience has a negative impact on the perceived outcome of shopping with a specific merchant.
- Antecedents of shopping orientation
- H5a: Gender has an impact on shopping orientation such that females are more social-oriented but less convenience-oriented.
- H5b: Culture has an impact on shopping orientation such that consumers with higher collectivism are more social-oriented and involved in hobbies but less convenience-oriented.
- Antecedents of shopping motivation
- H6: Internet experience has an impact on online shopping motivation such that novice Internet users are more likely to go online for experiential activities while experienced Internet users are more likely to use an online channel for task-oriented activities.
- Antecedents of normative beliefs
- H7: Consumers' level of collectivism is positively associated with their normative beliefs.
- Antecedents of online experience
- H8a: Internet experience is negatively associated with online experience such that novice users enjoy online experience more than experienced users.
- H8b: Shopping motivation has an impact on online experience such that hedonic consumers enjoy an interactive environment more than a pure text environment.
- Antecedents of satisfaction
- H9a: Consumers' perceived outcome is positively associated with their satisfaction with online shopping.
- H9b: Consumers' confirmation of expectation from past online shopping experience is positively associated with their satisfaction with online shopping.