CONSUMER ONLINE SHOPPING ATTITUDES AND BEHAVIOR: AN ASSESSMENT OF RESEARCH

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Abstract

The current status of studies of online shopping attitudes and behavior is investigated through an analysis of 35 empirical articles found in nine primary Information Systems (IS) journals and three major IS conference proceedings. A taxonomy is developed based on our analysis. A conceptual model of online shopping is presented and discussed in light of existing empirical studies. Areas for further research are discussed.

Keywords: Online shopping, consumer attitude, consumer behavior, Web, empirical study

Introduction

Electronic commerce has become one of the essential characteristics in the Internet era. According to UCLA Center for Communication Policy (2001), online shopping has become the third most popular Internet activity, immediately following e-mail using/instant messaging and web browsing. It is even more popular than seeking out entertainment information and news, two commonly thought of activities when considering what Internet users do when online. Of Internet users, 48.9 percent made online purchases in 2001, with three-quarters of purchasers indicating that they make 1-10 purchases per year (2001, p.38). When segmented into very versus less experienced Internet users, the very experienced users average 20 online purchases per year, as compared to four annual purchases for new users (2001, p.38).

Online shopping behavior (also called online buying behavior and Internet shopping/buying behavior) refers to the process of purchasing products or services via the Internet. The process consists of five steps similar to those associated with traditional shopping behavior (Liang and Lai 2000). In the typical online shopping process, when potential consumers recognize a need for some merchandise or service, they go to the Internet and search for need-related information. However, rather than searching actively, at times potential consumers are attracted by information about products or services associated with the felt need. They then evaluate alternatives and choose the one that best fits their criteria for meeting the felt need. Finally, a transaction is conducted and post-sales services provided. Online shopping attitude refers to consumers' psychological state in terms of making purchases on the Internet.

There have been intensive studies of online shopping attitudes and behavior in recent years. Most of them have attempted to identify factors influencing or contributing to online shopping attitudes and behavior. The researchers seem to take different perspectives and focus on different factors in different ways. For example, Case, Burns, and Dick (2001, p.873) suggest that "internet knowledge, income, and education level are especially powerful predictors of Internet purchases among university students" according to an online survey of 425 U.S. undergraduate and MBA students. Ho and Wu (1999) discover that there are positive relationships between online shopping behavior and five categories of factors, which include e-stores' logistical support, product characteristics, websites' technological characteristics, information characteristics, and homepage presentation. Schubert and Selz (1999) examine the quality factors of electronic commerce sites in terms of information, agreement, and settlement phases. They also review those factors related to e-commerce community.

These studies have all made important contributions to our understanding of the dynamics of online shopping field. However, there is a lack of coherent understanding of the impact of relevant factors on online attitudes and behavior and an inconsistent identification of relevant independent and dependent variables. This makes comparisons of different studies difficult, applications of research findings limited, and the prospect of synthesizing and integrating the empirical literature in this area elusive.

The objective of this paper is to synthesize the representative existing literature on consumer online shopping attitudes and behavior based on an analytical literature review. In doing so, this study attempts to provide a comprehensive picture of the status of this subfield and point out limitations and areas for future research.

Method

As a phenomenon, online shopping became popular in the mid-1990s with the popularization of the World Wide Web (WWW). Correspondingly, the subsequent years saw the appearance of research studies conducted to develop an understanding of users' online behavior. Given the fact that it usually takes a year or two to have a research published, we decided to restrict our search of research articles to the period of January 1998 to February 2002. The other two criteria for selection are (1) that the articles are empirical in nature, and (2) that the articles measure at least one of the identified factors in our taxonomy (see below).

We systematically searched the following nine primary Information Systems (IS) journals: *Communications of the ACM*, *Decision Support Systems, e-Service Journal, International Journal of Electronic Commerce*, *International Journal of Human-Computer Studies*, *Information Systems Research*, *Journal of the Association for Information Systems*, *Journal of Management Information Systems*, and, *Management Information Systems Quarterly*. In addition, we searched three primary IS conference proceedings volumes: International Conference on Information Systems (ICIS), Americas Conference on Information Systems (AMCIS), and Hawaii International Conference on Systems Science (HICSS). We also checked the reference sections of the selected articles to identify and include additional prominent articles in this area.

A Taxonomy of Consumer Online Shopping Attitudes and Behavior

A total of 35 empirical studies are analyzed in this study. Of these, 29 of them used survey method. Other research methods such as lab experiments and free simulation experiments are occasionally employed. Each of these studies addresses some aspect of online shopping attitudes and behavior. Our goal is to develop a taxonomy representing factors/aspects related to online shopping attitudes and behavior covered in the existing empirical IS literature.

For example, Bellman, Lohse and Johnson (1999) examine the relationship among demographics, personal characteristics, and attitudes towards online shopping. These authors find that people who have a more "wired lifestyle" and who are more time-constrained tend to buy online more frequently, i.e., those who use the Internet as a routine tool and/or those who are more time starved prefer shopping on the Internet. Bhatnagar, Misra and Rao (2000) measure how demographics, vender/service/ product characteristics, and website quality influence the consumers' attitude towards online shopping and consequently their online buying behavior. They report that the convenience the Internet affords and the risk perceived by the consumers are related to the two dependent variables (attitudes and behavior) positively and negatively, respectively.

Jarvenpaa, Tractinsky, and Vitale (2000) investigate how consumers' perceived store size and reputation influence their trust in the store, risk perception, attitudes, and willingness to buy at the specific store. They discover that there is a positive relationship between consumer trust in Internet stores and the store's perceived reputation and size. Higher consumer trust also reduces perceived risks associated with Internet shopping and generates more favorable attitudes towards shopping at a particular store, which in turn increases willingness to purchase from that store. Jahng, Jain, and Ramamurthy (2001) propose and validate a Technology/Product Fit Model to describe and predict the relationship between product characteristics, e-commerce environment characteristics, and user outcomes. They classify products sold on the Internet as belonging to four categories based on social and product presence requirements: simple, experiential, complex, or social. When a positive fit is established between the e-commerce environment and the product requirements, favorable user outcomes are generated that include user satisfaction, decision confidence, e-commerce acceptance, and purchase intent.

After examining the 35 empirical studies, we identify a total of ten interrelated factors for which the empirical evidences show significant relationships. These ten factors are external environment, demographics, personal characteristics, vender/service/ product characteristics, attitude towards online shopping, intention to shop online, online shopping decision making, online purchasing, and consumer satisfaction. Five (external environment, demographics, personal characteristics, vendor/service/product characteristics, and website quality) are found to be ordinarily independent and five (attitude toward online shopping, intention to shop online, decision making, online purchasing, and consumer satisfaction) are ordinarily dependent variables in the empirical literature.

Few of the 35 studies examined cover all ten factors, and there is some inconsistency in the empirical results of those that include similar factors. Nevertheless, for the sake of discussion, we integrate these ten factors in a model (Figure 1) in which the expected relationships among them are depicted. The five factors identified as antecedents are normally independent variables, although some studies have treated Website Quality as a dependent variable. These five factors directly determine attitude towards online shopping. Attitude and intention to shop online have been clearly identified and relatively widely studied in the existing empirical literature. Decision-making is the stage before consumers commit to online transaction or purchasing, and is sometimes considered to be a behavioral stage. The depicted relationships among attitude, intention, decision-making, and online purchasing are based on the theory of reasoned action (Fishbein and Ajzen 1975), which attempts to explain the relationship between beliefs, attitudes, intentions, and actual behavior. Consumer satisfaction is considered to be a separate factor in this study. It can occur at all possible stages depending on consumers' involvement during the online shopping process. The relationships between satisfaction, attitude, intention, decision making and online purchasing are proposed to be two-way relationships due to the reciprocal influences of each on the other. In addition, two of the antecedents, vendor/service/product characteristics and Website quality, have been found to have direct impact on consumer satisfaction.
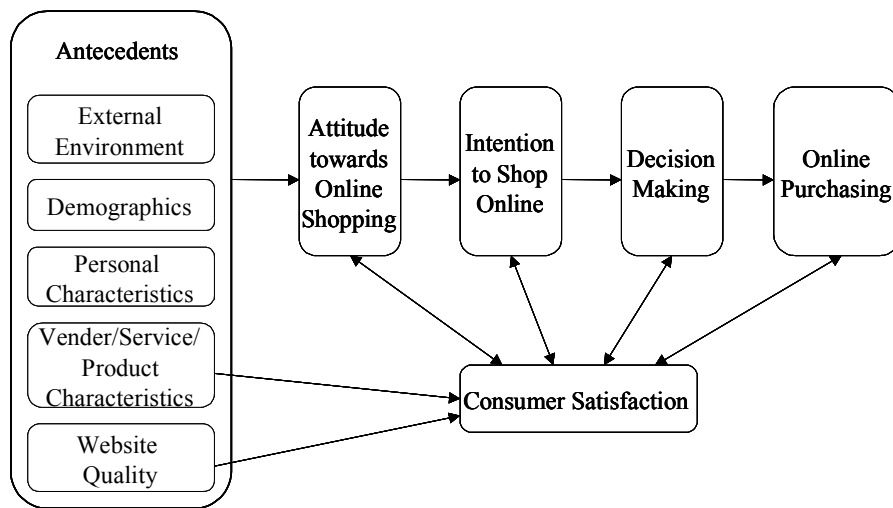

Figure 1. Research Model of Consumers' Online Shopping Attitudes and Behavior

Table 1 summarizes the distribution of factors among the studies indicating which factors have been the foci of attention in the empirical literature. Each of the factors and the empirical literature bearing on it is discussed in detail below.

External Environment

Only two out of 35 studies discuss the influence of external environment on online shopping. External environment refers to those contextual factors that impact consumers' online shopping attitudes and behavior. It includes three dimensions. The first is the existing legal framework that protects the consumers from any kind of loss in online transactions. The second is the system of the Third Party Recognition in which many third party certification bodies are working to ensure the trustworthiness of online vendors (Borchers 2001). These two factors are positively associated with consumers' trust attitude to the online stores. The third factor is the numbers of competitors, which can be defined as "the number of Internet stores that provide the same service and products" (Lee et al. 2000, p.307). Lee and colleagues (2000) argue that the fewer the competing vendors, the greater the possibility of opportunistic behavior on the part of existing vendors so as to maximize profits. This increases transaction costs for the consumer, decreasing intention to revisit a specific online store.

Demographics

Eight of 35 studies examine the impact of demographics on online shopping attitudes and behavior. Demographics include such variables as age, gender, level of education, income, and time online. Bellman and colleagues (1999, p. 33) report that "Internet

surveys agree that the online population is relatively younger, more educated, wealthier, although the gaps are gradually closing". They argue that demographics appear to play an important role in determining whether people use the Internet, however once people are online, demographics do not seem to be key factors affecting purchase decisions or shopping behavior. Bhatnagar and colleagues (2000) provide evidence that demographics are not relevant factors in determining which store to patronize or how much to spend, though men and women do tend to buy different types of products or services via the Internet. In summary, the literature suggests that the impact of demographics on Internet buying behavior is not strong.

Table 1. Representation of Factors in the Studies Examined

Variable types	Factors	Count	Number	% (of 35)
Independent	External environment	xx	2	6
Independent	Demographics	xxxxxxxx	8	23
Independent	Personal characteristics	xxxxxxxxxxxxxx	14	40
Independent	Vender/service/product characteristics	xxxxxxxxxxxxxxxx	16	46
Independent	Website quality	xxxxxxxxxxxxxxxxxxxx	20	57
Dependent	Attitude towards online shopping	xxxxxxxxxxxxxxxxxxxxxx	22	63
Dependent	Intention to online shopping	xxxxxxxxxxxxx	13	37
Dependent	Decision making /info seeking	xxxxx	5	14
Dependent	Online purchasing	xxxxxxxxxxxxxx	14	40
Dependent	Consumer satisfaction	xxx	3	9

Personal Characteristics

Personal characteristics have drawn the attention of fourteen studies. It can be defined as a group of specific customer features that may influence their online shopping attitudes and behavior, such as their Internet knowledge, need specificity, and cultural environment.

Li and colleagues (1999) found that customers who purchase Internet stores more frequently are more convenience-oriented and less experience-oriented. These consumers regard convenience during shopping as the most important factor in purchase decisions, because they are time-constrained and do not mind buying products without touching or feeling them if they can save time in this way. Potential consumers are often prevented from shopping online by their concern for security (Han et al. 2001). However, perceived risk can be reduced by knowledge, skill, and experience on the Internet, computer, and online shopping (Ratchford et al. 2001; Senecal 2000; Sukpanich and Chen 1999; Ha et al. 2001). In another study, Bellman and colleagues (1999) propose that people living a wired lifestyle patronize e-stores spontaneously. These consumers use the Internet as a routine tool to receive and send emails, to do their work, to read news, to search information, or for recreational purposes. Their routine use of the Internet for other purposes leads them to naturally use it as a shopping channel as well.

Other factors found to impact consumers' online shopping attitudes and behavior include cultural environment, need specificity, product involvement, disposition to trust, the extent to which they would like to share values and information with others, the extent to which they like being first to use new technologies, and tendency to spend money on shopping (Borchers 2001; Koufaris et al.2002; Lee et al.2000; Kimery and McCord 2002; Bellman et al 1999).

Vender/Service/Product Characteristics

Sixteen out of the 35 studies examine the relationship between vender/service/product characteristics and other factors. Vender/service/product characteristics refer to features of the Internet stores, the products they sell, and the service they provide to support the transactions. These factors are found to influence customers' online shopping attitudes and behavior significantly.

Measures employed to value vender characteristics in the empirical studies include (1) real existence of the store/physical location, (2) store reputation, (3) store size, (4) reliability, (5) number of Internet store "entrances", (6) assurance-building mechanisms (e.g., seals, warranties, news clips), and (7) use of testimonials (van der Heijden et al. 2001; Liang and Lai 2000; Bhatnagar et al. 2000; Kim et al. 2001; Lowengart and Tractinskky 2001; Grazioli and Wang 2001; Pavlou 2001; Jarvenpaa et al. 2000; Lee et al. 2000). Among product features that impact customers' online shopping behavior are (1) variety of goods, (2) product

quality/performance/product uncertainty, (3) product availability, (4) price, (5) social presence requirement, (6) product presence requirement, (7) dependability of product, (8) possibility of customized products, and (9) brand (Jahng et al. 2001; Liang and Huang 1998; Kim et al. 2001; Cho et al. 2001; Lowengart and Tractinskky 2001; Muthitacharoen 1999).

In addition, researchers examine different aspects of service provided by the venders through the online shopping process. Service factors related to online shopping attitudes and behavior include (1) customer communication channels/ease of vendor contact, (2) response to customer needs, (3) accessibility of sales people, (4) reliability of the purchasing process/process uncertainty, (5) timeliness of orders or services/waiting time, (6) availability of personalized services, (7) ease of return and refunds, (8) fraud, (9) delivery (speed, tracking and tracing), (10) transaction costs, (11) peripheral costs, and (12) promotion (Ho and Wu 1999; Liang and Huang 1998; Lohse and Spiller 1998; Liang and Lai, 2000; Bhatnagar et al. 2000; Kim et al. 2001; Cho et al. 2001; Li et al. 2001; Muthitacharoen 1999).

Website Quality

Twenty studies investigate the relationship between website quality and consumers online shopping attitudes and behavior from different points of view. For example, Gefen and Straub (2000) investigate the impact of perceived ease of use (PEOU) and perceived usefulness (PU) on e-commerce adoption using 202 MBA students as subjects. They report that while PU affects intended use when a Web site is used for a purchasing task, PEOU only has an indirect influence on online shopping behavior by directly influencing PU. Lee et al. (2001) obtain the similar findings in their recent study of design factors affecting consumer loyalty. In one study, Song and Zahedi (2001) classify website quality elements into five categories according to their purpose: for promotion, service, informational influence, self-efficacy, and resources facilitation. These investigators find that each of the five significantly and positively reinforces the consumers' perceptions in these factors, which in turn positively influence consumer online shopping attitudes and behavior.

Zhang, von Dran, Small, and Barcellos (1999, 2000), and Zhang and von Dran (2000) make an attempt to evaluate website quality from user satisfaction and dissatisfaction perspective. Their studies show that website design features can be regarded as hygiene and motivator factors that contribute to user dissatisfaction and satisfaction with a website. Hygiene factors are those whose present make a website functional and serviceable, and whose absence causes user dissatisfaction. Some of the categories of hygiene factors are: Privacy and Security, Technical Aspect, Navigation, Impartiality, and Information Content. Motivator factors are those that add value to the website by contributing to user satisfaction. Five categories of motivation factors are: Enjoyment, Cognitive Outcome, User Empowerment, Credibility, Visual Appearance, and Organization of Information Content. In their continued effort, they further discover that the most important website quality factors ranked by e-commerce consumers are hygiene factors (von Dran and Zhang 1999; Zhang et al. 2000; Zhang and von Dran 2001a, 2001b; Zhang et al. 2001). Liang and Lai (2000) review website quality factors influencing Internet buying behavior by categorizing them into three groups, two of them are also named motivators and hygiene factors, and third media richness factors. In their opinion, motivators are those who support the transaction process directly while hygiene factors protect the consumers from risks or unexpected events in the transaction process. Media richness factors "add more information channels or richness in information presentation" (Liang and Lai 2000, p. 2). They suggest that providing good transaction support will help Internet venders to beat their electronic competitors, while the hygiene factors need to be paid attention if they want to attract consumers from traditional stores.

Overall, the measures employed to value website quality by the researchers include the websites' information content, information presentation, interaction between customers and venders, navigation, searching mechanism, security, site technical feature, media richness, and so forth (Zhang and von Dran 2000, 2001a, 2001b; Grandon and Ranganathan 2001; Cho et al. 2001; Kim et al. 2001; Lohse and Spiller 1998; Koufaris et al. 2002; Ho and Wu 1999).

In summary, a variety of factors related to website quality have been demonstrated to significantly influence consumers' online shopping attitudes and behavior. Better website quality can guide the consumers complete transactions smoothly and attract them to revisit this Internet store. In contrast, worse quality would hinder their online shopping moves.

Attitudes Towards Online Shopping

Consumers' attitudes toward online shopping have gained a great deal of attention in the empirical literature, with 22 out of 35 papers focusing on it. Consistent with the literature and models of attitude change and behavior (e.g., Fishbein and Ajzen 1975), it is believed that consumer attitudes will affect intention to shop online and eventually whether a transaction is made. This is a

multidimensional construct that has been conceptualized in several different ways in the existing literature. First, it refers to the consumers' acceptance of the Internet as a shopping channel (Jahng et al. 2001). Secondly, it refers to consumer attitudes toward a specific Internet store (i.e., to what extent consumers think that shopping at this store is appealing). These first two dimensions are negatively associated with the third, customers' perceived risk. According to Lee and colleagues (2001), two main categories of perceived risk emerge in the process of online shopping. The first is the perceived risk associated with product/service and includes functional loss, financial loss, time loss, opportunity loss, and product risk. The second is the perceived risk associated with context of online transactions, and includes risk of privacy, security, and nonrepudiation. Among them, the influence of financial risk, product risk, and concern for privacy and security is significant (Senecal 2000; Borchers 2001; Bhatnagar et al. 2002). However, the fourth dimension of attitude, consumers' trust in the stores, can reduce perceived risk. In addition, perceived control/users' empowerment, enjoyment/playfulness, and perceived real added-value from membership have also been shown to be important dimensions of consumers' attitudes towards online shopping (Koufaris et al. 2002; Cho et al. 2001).

Intention to Shop Online

Consumers' intention to shop online is studied by 13 out of the 35 papers. Consumers' intention to shop online refers to their willingness to make purchases in an Internet store. Commonly, this factor is measured by consumers' willingness to buy and to return for additional purchases. The latter also contributes to customer loyalty. Jarvenpaa and colleagues (2000) assess consumers' intention to shop online by asking a series of questions assessing the likelihood of returning to a store's website, the likelihood of purchasing from the store within the next three months, the likelihood of purchasing within the next year, and general the likelihood of ever purchasing from a particular store again.

As is indicated in Figure 1, consumers' intention to shop online is positively associated with attitude towards Internet buying, and influences their decision-making and purchasing behavior. In addition, there is evidence of reciprocal influence between intention to shop online and customer satisfaction.

Online Shopping Decision Making

Online shopping decision-making includes information seeking, comparison of alternatives, and choice making. The results bearing on this factor directly influence consumers' purchasing behavior. In addition, there appears to be an impact on users' satisfaction. Though it is important, there are only five studies that include it.

According to Haubl and Trifts (2000), potential consumers appear to use a two-stage process in reaching purchase decisions. Initially, consumers typically screen a large set of products in order to identify a subset of promising alternatives that appears to meet their needs. They then evaluate the subset in greater depth, performing relative comparisons across products based on some desirable attributes and make a purchase decision. Using a controlled experiment, these authors discover that the "interactive tools designed to assist consumers in the initial screening of available alternatives and to facilitate in-depth comparisons among selected alternatives in an online shopping environment may have strong favorable effects on both the quality and the efficiency of purchase decisions" (Haubl and Trifts 2000, p. 4).

Online Purchasing

Fourteen studies discuss online purchasing, which refers to consumers' actions of placing orders and paying. This is the most substantial step in online shopping activities, with most empirical research using measures of frequency (or number) of purchases and value of online purchases as measures of online purchasing; other less commonly used measures are unplanned purchases (Koufaris et al. 2002) and Internet store sales (Lohse and Spiller 1998). For example, in Lee and colleagues' (2001) examination of the relationship between online purchasing behavior, perceived ease of use, perceived usefulness, perceived risk of the product/service, and perceived risk in the context of the transaction, the measures used are total amount spent and frequency in last 6 months.

Online purchasing is reported to be strongly associated with the factors of personal characteristics, vendor/service/product characteristics, website quality, attitudes toward online shopping, intention to shop online, and decision making (Andrade 2000; Bellman et al. 1999; Bhatnagar et al. 2000; Cho et al. 2001; Grandon and Ranganathan 2001; Jarvenpaa et al. 2000; Lee et al. 2000; Sukpanich and Chen 1999).

Consumer Satisfaction

Consumer satisfaction is the focus of the investigation in only three articles. It can be defined as the extent to which consumers' perceptions of the online shopping experience confirm their expectations. Most consumers form expectations of the product, vendor, service, and quality of the website that they patronize before engaging in online shopping activities. These expectations influence their attitudes and intentions to shop at a certain Internet store, and consequently their decision-making processes and purchasing behavior. If expectations are met, customers achieve a high degree of satisfaction, which influences their online shopping attitudes, intentions, decisions, and purchasing activity positively. In contrast, dissatisfaction is negatively associated with these four variables (Ho and Wu 1999; Jahng et al. 2001; Kim et al. 2001).

Implications and Recommendations for Future Research

As Table 1 indicates, three out of the five dependent variables (consumer attitudes, intentions, and purchasing behavior) and three out of the five independent variables (personal characteristics, vendor/service/product characteristics, website quality) receive the most attention. This seems to constitute the main stream of research in this area. Twenty-two studies examine the relationship between consumers' attitudes towards online shopping and other factors, thirteen measure intention to shop online, and 14 investigate the connection between online purchasing and other factors. Fourteen studies consider personal characteristics, 16 vender/service/product characteristics, and 20 website quality. It is found that personal characteristics, vender/service/product characteristics, and website quality significantly affect online shopping attitudes, intention, and behavior. The direct implication of these findings is that targeting more appropriate consumer groups, improving product and/or service quality, and improving website quality can positively influence consumer attitudes and behavior, potentially leading to increased frequency of initial purchase and repeat purchases on the part of consumers.

The role of the external environment, demographics, online shopping decision making, and consumer satisfaction are less well represented in the IS literature. As is shown in Figure 1, consumers' satisfaction is a key factor in online shopping, yet only three studies investigate it. Any number of factors, including vender/service/product characteristics, website quality, attitude towards online shopping, intention to online shopping, online shopping decision making, and online purchasing, may influence consumers satisfaction. More importantly, the extent to which customers are satisfied is directly related to attitudes toward online shopping or toward specific Internet stores. The relative importance of this factor in determining such consumer behavior as repeat purchases suggests that further research on consumer satisfaction with online shopping needs to be conducted.

The ten factors and the diverse measures used by different studies indicate that online shopping is a multidimensional and multidisciplinary phenomenon. Our examination shows that different studies have different ways of operationalizing seemingly the same constructs. This methodological issue needs to be addressed in future research so that a validated instrument can be developed for measuring consumer online shopping attitudes and behavior.

There is also no consensus on the theoretical models employed to describe and predict online shopping attitudes and behavior. This lack of a common theoretical framework suggests the need to develop an integrative model of the phenomenon in order to promote systematic investigation of its components and the online shopping process. By identifying common elements and developing our model based on IS literature, we hope to have taken a step toward promoting this type of integration and synthesis of relevant literature across disciplines.

One of the limitations of this study is the selection of the existing studies. Owing to time limitation, we only searched a number of IS journals and conference proceedings. This may leave some other prominent IS empirical studies out. In addition, owing to the multidisciplinary nature of online shopping, it would be very interesting to compare IS literature to other disciplines that study online shopping attitudes and behavior. These limitations will be addressed in our future studies.

By summarizing the current studies based on IS literature review and analysis, this paper identifies ten factors in the area of online shopping and proposes a model describing and predicting the relationships among these factors. It provides a comprehensive picture of the status of this area. This model needs to be validated either theoretically or empirically in future studies.

References

Andrade, E. "Identifying discriminating variables of online and offline buyers: A perceived-risk approach," Proceedings of the 6th Americas Conference on Information Systems, 2000, pp. 1386-1392

Bellman, S., Lohse, G., and Johnson, E. "Predictors of online buying behavior," Communications of the ACM (42:12), 1999, pp. 32-38.

Bhatnagar, A, Misra, S., and Rao, H. R. "Online risk, convenience, and Internet shopping behavior," Communications of the ACM (43:11), 2000, pp. 98-105.s

Borchers, A. "Trust in Internet shopping: A test of a measurement instrument," Proceedings of the 7th Americas Conference on Information Systems, 2001, pp. 799-803

Case, T., Burns, O. M., and Dick, G. N. "Drivers of on-line purchasing among U.S. university students." Proceedings of the 7th Americas Conference on Information Systems, 2001, pp. 873-878.

Cho, Y., Im, I., Hiltz, R., and Fjermestad, J. "Causes and outcomes of online customer complaining behavior: implications for customer relationship management (CRM)," Proceedings of the 7th Americas Conference on Information Systems, 2001, pp.900-907.

Choudhury, A.; Mallick, D. N., and Rao, H. R. "Web channels in e-commerce," Communications of the ACM (44:1), 2001, pp. 99-104

Choudhury, V.; Dumm, R., and Karahanna-Evaristo, E. "Consumer channel choices: The role of knowledge and choice uncertainty," Proceedings of the 5th Americas Conference on Information Systems, 1999, pp.514-516

Eighmey, J. "Profiling user responses to commercial Web sites," Journal of Advertising Research (37:3), 1997, pp. 59-66

Fishbein, M., and Ajzen, I. Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, Massachusetts: Addison-Wesley, 1975.

Fung, R. K. K., and Lee, M. K. O. "EC-Trust (Trust in Electronic Commerce): Exploring the antecedent factors," Proceedings of the 5th Americas Conference on Information Systems, 1999, pp.517-519

Gefen, D., and Straub, D. "The relative importance of perceived ease of use in IS adoption: a study of e-commerce adoption," Journal of the Association for Information Systems (1:8), October, 2000, pp.1-28

Gehrke, D., and Turban, E. "Determinants of successful website design: relative importance and recommendations for effectiveness," Proceedings of the 32nd Hawaii International Conference on System Sciences, 1999.

Grandon, E. E., and Ranganathan, C. "The impact of content and design of web sites on online sales," Proceedings of the 7th Americas Conference on Information Systems, 2001, pp.920-926

Grazioli, S., and Wang, A. "Looking without seeing: understanding unsophisticated consumers' success and failure to detect Internet deception," Proceedings of the 22nd International Conference on Information Systems, 2001, pp. 193-203

Han, H., Ocker, R., and Fjermestad, J. "An investigation of university students' on-line shopping behavior,' Proceedings of the 7th Americas Conference on Information Systems, 2001, pp.930-933

Haubl, G., and Trifts, V. "Consumer decision making in online shopping environments: the effects of interactive decision aids," Marketing Science (19:1), 2000, pp. 4-21

Ho, C., and Wu, W. "Antecedents of consumer satisfaction on the Internet: an empirical study of online shopping," Proceedings of the 32nd Hawaii International Conference on System Sciences, 1999.

Jahng, J., Jain, H. K., and Ramamurthy, K. "Empirical investigation into impact of electronic commerce systems richness on user behavior: The case of a complex product," Proceedings of the 6th Americas Conference on Information Systems, 2000, pp.1393-1397

Jahng, J.; Jain, H. K. and Ramamurthy, K. "Product complexity, richness of web-based electronic commerce systems and system success: A proposed research framework," Proceedings of the 5th Americas Conference on Information Systems, 1999, pp.520-522.

Jahng, J., Jain, H., and Ramamurthy, K. "The impact of electronic commerce environment on user behavior," E-service Journal (1:1), 2001, pp. 41-53

Jarvenpaa, S. L., Tractinsky, N., and Vitale, M. "Consumer trust in an Internet store," Information Technology and Management (1), 2000, pp. 45–71

Kim, E. "A model of an effective web," Proceedings of the 5th Americas Conference on Information Systems, 1999, pp.523-525.

Kim, E. B., Eom, S. B., and Yoo, S. "Effective user interface design for online stores in the Asia Pacific region: A survey study," Proceedings of the 7th Americas Conference on Information Systems, 2001, pp.867-872

Kimery, K. M., and McCord, M. "Third-party assurances: the road to trust in online retailing," Proceedings of the 35nd Hawaii International Conference on System Sciences, 2002.

Koufaris, M., Kambil, A., and LaBarbera, P. A. "Consumer behavior in Web-based commerce: and empirical study," International Journal of Electronic Commerce, (6:2), 2002, pp. 115-138

Lam, J. C. Y., and Lee, M. K. O. "A model of Internet consumer satisfaction: Focusing on the Web-site design," Proceedings of the 5th Americas Conference on Information Systems, 1999, pp.526-528

Lee, J., Kim, J., and Moon, J. Y. "What makes Internet users visit cyber stores again? Key design factors for customer loyalty," CHI Letters (2:1), 2000, pp. 305-312

Lee, D., Park, J., and Ahn, J. "On the explanation of factors affecting e-commerce adoption," Proceedings of the 22nd International Conference on Information Systems, 2001, pp. 109-120

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 (5:2), 1999.

Liang, T., and Huang, J. "An empirical study on consumer acceptance of products in electronic markets: a transaction cost model," Decision Support Systems (24), 1998, pp. 29-43

Liang, T., and Lai, H. "Electronic store design and consumer choice: an empirical study," Proceedings of the 33rd Hawaii International Conference on System Sciences, 2000.

Lohse, G. L., and Spiller, P. "Electronic shopping," Communications of ACM (41:7), 1998, pp. 81-87

Lohse, G. L., and Spiller, P. Quantifying the effect of user interface design features on cyberstore traffic and sales: chapter in J. Coutaz and J. Karat (Eds.). CHI'98 Conference Proceedings, Los Angeles, CA. Los Alamitos, CA: ACM Press. April 18-23, 1998.

Lowengart, O., and Tractinskky, N. "Differential effects of product category on shoppers' selection of web-based stores: a probabilistic modeling approach," Journal of Electronic Commerce Research (2:4), 2001, pp.12-26

Mathwich, C. "Understanding the online consumer: A typology of online relational norms and behavior," Journal of Interactive Marketing (16:1), 2002, pp. 40-55

Miles, G. E., Howes, A., and Davies, A. "A framework for understanding human factors in web-based electronic commerce," International Journal of Human-Computer Studies (52:1). 2000, pp. 131-163

Muthitacharoen, A. "Investigating consumer's attitude toward Internet shopping," Proceedings of the 5th Americas Conference on Information Systems, 1999, pp. 532-534.

Muthitacharoen, A. "Consumer's preference between the Internet and conventional stores (an exploratory study)," Proceedings of Americas Conference on Information Systems, 2000, pp.1373-1379

Novak, T. P., Joffman, D. L., and Yung, Y. F. "Measuring the customer experience in online environments: A structural modeling approach," Marketing Science (19:1), 2000, pp. 22-42

Pardue, H., and Landry, J. "Evaluation of alternative interface designs for e-tail shopping: an empirical study of three generalized hierarchical navigation schemes," Proceedings of the 7th Americas Conference on Information Systems, 2001, pp.1335-1337

Pavlou, P. "Integrating trust in electronic commerce with the technology acceptance model: model development and validation," Proceedings of the 7th Americas Conference on Information Systems, 2001, pp. 816-822

O'Keefe, R. and McEachern, T. "Web-based customer decision support systems," Communications of the ACM (41:3), 1998, pp. 71-75

Ratchford, B. T., Talukdar, D., and Lee, M. "A model of consumer choice of the Internet as an information source," International Journal of Electronic Commerce (5:3), 2001, pp. 7-21

Rose, G. M., and Straub, D. W. "The effect of download time on consumer attitude toward the retailer in e-commerce retailer," E-Service Journal (1:1), 2001, pp. 55-75

Salam, A. F., Rao, H. R., and Bhattacharjee, S. "Internet-based technologies: Value creation for the customer and the value chain across industries," Proceedings of the 5th Americas Conference on Information Systems, 1999, pp.538-540

Salam, A. F., and Zurada, J. "Consumers as investors: Investor psychology and the case of the Internet industry," Proceedings of the 5th Americas Conference on Information Systems, 1999, pp.535-537.

Schubert, P., and Selz, D. "Web assessment-measuring the effectiveness of electronic commerce sites going beyond traditional marketing paradigms," Proceedings of the 32nd Hawaii International Conference on System Sciences, 1999.

Senecal, S. "Stopping variables in online buying processes: An innovation diffusion approach," Proceedings of the 6th Americas Conference on Information Systems, 2000, pp. 1380-1385

Shih, C. F. "Conceptualizing consumer experiences in cyberspace," European Journal of Marketing (32:7/8), 1998, pp. 655-663

Sohn, C. "The properties of Internet-based markets and customers' behavior," Proceedings of the 5th Americas Conference on Information Systems, 1999, pp.541-543.

Song, J., and Zahedi, F. M. "Web design in e-commerce: a theory and empirical analysis," Proceeding of 22nd International Conference on Information Systems, 2001, pp. 219

Stafford, T. F. "Antecedents to Electronic Commerce," Proceedings of the 5th Americas Conference on Information Systems, 1999, pp.544-546.

Strader, T. and Hackbarth, G. "Introduction to marketing and consumer behavior in electronic markets," Proceedings of the 6th Americas Conference on Information Systems, 2000, pp.1349-1351

Strader, T. J., Richard, B. C., and Nilakanta, S. "The marketing and sale of initial public offerings (IPOs) through Internet-based investment bankers," Proceedings of the 5th Americas Conference on Information Systems, 1999, pp.547-549.

Sukpanich, N., and Chen, L. "Antecedents of desirable consumer behaviors in electronic commerce," Proceedings of the 5th Americas Conference on Information Systems, 1999, pp. 550-552

Tabor, S. W. "The customer talks back: An analysis of customer expectations & feedback mechanisms in electronic commerce transactions," Proceedings of the 5th Americas Conference on Information Systems, 1999, pp.553-555.

Te'eni, D., and Feldman, R. "Performance and satisfaction in adaptive websites: an experiment on searches within a task-adapted website," Journal of the AIS (2:3), May 2001.

UCLA Center for Communication Policy. "The UCLA Internet report 2001: Surveying the digital future-year two," 2001. (Paper available from: http://www.ccp.ucla.edu/pdf/UCLA-Internet-Report-2001.pdf)

Van der Heijden, H., Verhagen, T., and Creemers, M. "Predicting online purchase behavior: replications and tests of competing models," Proceedings of the 34th Hawaii International Conference on System Sciences, 2001.

Vellido, A.; Lisboa, P. J. G., and Meehan, K. "Quantitative characterization and prediction of on-line purchasing behavior: A latent variable approach," International Journal of Electronic Commerce (4:4), 2000, pp. 83-104

von Dran, G., Zhang, P. and Small, R. "Quality websites: an application of the Kano model to website design," Proceedings of the 5th Americas Conference in Information Systems, 1999, 898-900.

Zhang, P., von Dran, G. M., Blake, P. and Pipithsuksunt, V. "Important design features in different web site domains," E-Service Journal (1:1), 2001, pp. 77-91

Zhang, P., and von Dran, G. M. "Satisfactor and dissatisfactorers: A two-factor model for website design and evaluation," Journal of the American Society for Information Science (51:4), 2000, pp. 1253-1268.

Zhang, P., and von Dran, G. "User expectations and ranks of quality factors in different website domains," International Journal of Electronic Commerce (6:3), 2001, pp. 9-34

Zhang, P., von Dran, G., Blake, P. and Pipithsuksunt, V. "A comparison of the most important website features in different domains: an empirical study of user perceptions," Proceedings of the 6th Americas Conference on Information Systems, 2000, pp.1367-1372.

Zhang, P., and von Dran, G. M. "Expectations and rankings of website quality features: results of two studies on user perceptions," Proceedings of the 34th Annual Hawaii International Conference on System Sciences (HICSS34), January 2001

Zhang, P., von Dran, G. M., Small, R. V. and Barcellos, S. "A two-factor theory for website design," Proceedings of the 33rd Annual Hawaii International Conference on System Sciences (HICSS33), January 2000

Zhang, P., von Dran, G. M., Small, R. V. and Barcellos, S. "Websites that satisfy users: a theoretical framework for web user interface design and evaluation," Proceedings of the 32nd Annual Hawaii International Conference on System Sciences (HICSS32), January 1999.