Antecedents of Desirable Consumer Behaviors in Electronic Commerce

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Introduction

A growing number of companies have adopted EC in the hope to lower costs, make better decisions, and improve customer services (Kalakota and Whinston, 1996). A recent survey shows that businesses doubled their usage of the Internet during the last year and approximately forty percent of the business owners admitted that the Internet has changed the way they do business (Facilities Design & Management, 1997). EC is delivering its advantages over the traditional commercial approaches with the help of the Internet, and more and more businesses are able to take these advantages. It is predicted that, by the end of 1990s, retailing on the Internet will become a $4-6 billion business (Martin, 1996).

Despite of its rapid growth, the sales volume on the Internet still remains relatively low compared with alternative retailing forms. Only 8 percent of Internet users have ever made purchases through this medium, while only 18 percent of them have spent over $50 (Advertising Age, 1995). Although the reasons for this low volume of transactions is still not totally clear, some obvious obstacles for shopping electronically are security concerns (Rose, 1997; Greene, 1997) and familiarity to the medium (Maignan and Lukas, 1997). The question that intrigues millions of businesses all over the world is what needs to be done to let the Internet catch up with other retailing forms in sales. To answer this question, a systematic study must be conducted to find out what encourages the desirable consumer behaviors in EC.

Hoffman and Novak (1996) proposed that involvement are determined by extrinsic motivation (goal-directed) and intrinsic motivation (experiential). This notion was greatly justified in their paper. Using the concept of extrinsic motivation and intrinsic motivation, the authors propose that consumer behavior in the WWW context can be influenced by the following three issues: attitude toward the Internet, Internet shopping experience, and sense of security. Hence, this study intends to discover the relationships among these antecedents and the desirable consumer behavioral outcomes. The understanding of these relationships will greatly enhance companies’ ability to utilize the Internet as an effective channel to conduct business with their customers.

Desirable Consumer Behavioral Outcomes. Desirable consumer behaviors are the actions taken by consumers that directly or indirectly benefit the companies. Three potential desirable consumer behaviors in the Internet contexts are identified: learning, information dissemination, and buying. The ongoing learning experience (Hoffman and Novak 1996) can be defined as a set of activities involving the gathering of information independently of specific purchase needs or decisions (Bloom, Sherrell, and Ridgway, 1986). Learning more about a product is considered important because it expresses consumers’ interest toward the product, which might lead to purchase. Information dissemination refers to the situation in which the consumer tells or recommends others (Fornel 1996) about the product or the company Web site. Internet users cite word-of-mouth as the most common way they learn about Web sites to visit (Kennedy , 1996). In order to obtain high net traffic on their Web sites, companies depend on Internet users to spread favorable publicity to others; therefore, information dissemination is an important desirable consumer behavior in the Internet context. Buying is a direct measure of the effectiveness of companies’ marketing efforts. Studying what stimulates these desirable consumer behaviors provides great insights for companies.

Attitude towards the Internet. Attitude towards the Internet refers to a learned predisposition to act favorable or unfavorably toward the Internet. The Internet’s biggest appeals are 1) its versatility of incorporating a variety of forms of messages ranging from text, graphic, animation, audio, or even video; 2) viewers’ control over the information display and navigation; and 3) the interactivity. The versatility allows businesses to convey messages to the viewers in different forms to achieve the visual and audio effectiveness (Chou 1997). Programmed in hypertext, web pages give viewers the control to select the information they want to read and go to other information sources to find more about the topic with great ease (Hoffman and Novak 1996). It also allows organizations to attend to their audiences’ needs and respond to what they want to know and not what you want to tell them in a timely manner (Hoke, Ray, and Galenskas 1997). Therefore, the authors postulate that consumers' attitude toward the Internet as a shopping channel leads to desirable consumer behaviors.

Internet Shopping Experiences. Internet shopping experience can be conceptualized as a flow concept introduced by Hoffman and Novak (1996). Flow is a state or optimal experience occurring while navigating the web. This optimal experience is derived from a number of incentives provided by the Internet: vast selection, low prices, and less buying pressure (Jarvenpaa and Todd, 1997; Burke 1998). According to Hoffman and Novak (1996), the optimal experience (flow) that consumers
perceived when they are browsing on the Internet often leads to positive feeling toward web commerce and in some instance directly affect desirable consumer behaviors. In addition, Alba, et al. (1997) rated shopping on the Internet scores high on personal security and medium on entertainment. Following Hoffman and Novak (1996) and Alba (1997), the authors believe that a positive Internet shopping experience will lead to sense of security, positive attitude toward the Internet, and the desirable consumer behaviors respectively.

**Sense of Security.** Characterized by the ease and low cost of establishment, the Internet has provided essentially equal access opportunity for all business players, regardless of their size. At the same time, the credibility of the information distributed over the Internet is seriously questioned (Maignan and Lukas, 1997). The phenomenon of anonymity of parties on the Internet provided unethical businesses chances for frauds. The increase of cyberfrauds in the recent years has caught the attention of federal regulators to impose tougher laws over the cyberspace (Celarier, 1996). Information sent over the Internet travels through many unsecured computer systems, and it is at the risk of interception and misuse. Most customers are still leery of transmitting large sums of money and are hesitant to reveal private financial information over an open electronic network (Rose, 1997; Greene, 1997). In order to calm the security concerns of the customers, companies should 1) implement security technologies such as encryption, secure protocol, and public/private key protocol (Seldon, 1997); 2) develop a proactive strategy to respond to these concerns (Kakalik and Wright, 1996). A study revealed that purchases via the Internet could receive a $6 billion boost by the year 2000 if consumers believed their securities wasn’t at stake during such transactions (Greene, 1997). Therefore, the authors intend to examine the relationship between the sense of security and the desirable consumer behaviors.

**Proposed Model**

The initial proposition is that the consumers’ Internet shopping experience, attitude towards the Internet, and sense of security influence the desirable consumer behaviors in EC (See Figure 1).

![Figure 1. The Proposed Model](image)

**Research Methodology**

A literature review in the discipline of marketing and MIS was conducted to ensure the comprehensiveness of the list of the items used in measuring the four constructs. Based on the review and the researchers’ interpretation of them in the Internet context, 15 items were generated. A pretest was performed to ensure the content validity. The questionnaires were administered to undergraduate students registered in fundamental Management Information Systems courses. The criterion for choosing the sample was that the student had prior experiences shopping on the Internet. Among all returned questionnaires, 84 out of 89 were found to be complete and useable.

**Analysis and Results**

Confirmatory Factor Analysis was used to examine the validity of the 13 items and the 4 underlying dimensions of the antecedents of desirable consumer behavioral outcomes toward EC model. Table 1 summarizes the correlation matrix of the 13 research items.

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<th>A4</th>
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A = Attitude towards the Internet; B = Desirable consumer behavioral outcome; E = Internet Shopping experience; S = Sense of security

**Table 1. Correlation Matrix**

Using a correlation matrix as input, the initial test of the measurement model showed that most of the preliminary fit criteria are satisfied. However, overall model fit indices indicated that the model did not produce strong measures of fit between the data and the proposed measurement model (Chi-square = 80.17, df = 59, p = 0.0082, GFI = 0.88, NFI = 0.87, RMR = .057). According to modification of Theta-delta, it is suggested that item S3 be discarded. The results from the second analysis significantly improved the goodness of fit between the data and the measurement model. The Chi-square reduced to 61.47(df = 67, p = 0.09), and GFI and NFI increased to 0.91 and 0.88, respectively. Therefore, the model is suggested to be a well-performed model. The model also demonstrated adequate concurrent and discriminant validity and reliability.
According to Figure 1, attitude towards the Internet, Internet shopping experience, and sense of security are all marginally related to the desirable consumer behaviors, with standardized structural coefficients (gamma values) equal to 0.35 (p=0.11), 0.43 (p=0.11), and 0.03 (p=0.10), respectively. The fit of the model is relatively poor, with the Chi-square equal to 94.73 (p=0.031, df=71), and GFI and NFI are 0.86 and 0.82, respectively. A model modification is needed.

The results show a weak link between sense of security and the desirable consumer behaviors; hence this link needs to be deleted from the model. The modification indices suggest possible influences from Internet shopping experience to attitude towards the Internet, from sense of security to attitude towards the Internet, and from Internet shopping experience to sense of security. As the result, the structural model is modified to include these relationships (See Figure 2).

![Figure 2. The Final Model](image)

The refined model shows significant improvement in overall fit. Internet shopping experience has positive effects on attitude towards the Internet, sense of security, and desirable consumer behaviors, with structural coefficients (gamma values) equal to 0.39 (t=2.59 p=0.15), 0.55 (t=4.83 p=0.11), and 0.43 (t=3.55 p=0.12), respectively. The structural coefficient (beta value) between attitude towards the Internet and the desirable consumer behaviors is 0.32 (t=2.67 p=0.12), and the structural coefficient (beta value) between sense of security and attitude towards the Internet is 0.05 (t=0.37 p=0.15). The Chi-square is reduced from 94.73 (p=0.03) with 71 degree of freedom to 61.80 (p=0.72) with 69 degree of freedom, and the difference in Chi-square and degree of freedom are 32.92 and 2, respectively. The new model demonstrate a significant improvement of the fit (GFI=.90; NFI=0.88). Overall, this model shows a relatively good fit of the data.

Practical & Theoretical Application of The Structure Model

The major contribution of this article is the identification of the antecedents of the desirable consumer behaviors in EC and their relationships. Among all three antecedents, Internet shopping experience and the attitude toward the Internet have highest effect on the desirable consumer behavior, respectively, while sense of security has a weak and indirect effect on the desirable consumer behavior in EC. The model has both practical and theoretical implications.

For business managers, the model can be used to evaluate the potential success of Web marketing programs before full implementation. The model depicts the three important antecedents of the desirable consumer behaviors in EC, and companies should focus on fulfilling these three antecedents to amplify the return of their investments in the electronic market. For example, the model suggests that Internet shopping experience significantly affect the other two antecedents and the desirable consumer behaviors; therefore companies should devote their efforts in ensuring an enjoyable Internet shopping experience for their customers. In order for the customers to obtain such an experience, companies can promote incentives for their customers to shop online, such as low price, vast selection, or free gifts. This model can also be used as an ad hoc method to evaluate the success of a company’s Internet marketing programs; the three antecedents can be measured to explore the areas for improvement. For researchers who are interested in this phenomena, this model can be used as a helpful resource to test hypotheses and generate future research questions. Each of the antecedents is a profound topic for future research. One of the most intriguing questions is that what can be done to enhance the fulfillment of these antecedents, and the answer to this question will greatly enhance our understanding of the EC phenomena.

Conclusion

This article developed a structural model for describing the antecedents of the desirable consumer behaviors in EC. Confirmatory factor analysis was conducted to validate the measurement for the four constructs of the model: Internet shopping experience, attitude towards the Internet, sense of security, and the desirable consumer behaviors in EC. Lisrel is used to examine and refine the proposed model. The final model depicts the relationships among the four constructs, and it is concluded that Internet shopping experience has the highest effect on the desirable consumer behavior on the Internet. Attitude towards the Internet has the second highest effect on the desirable consumer behavior in EC, but sense of security does not have significant direct effect. Both Internet shopping experience and sense of security influence the attitude towards the Internet, and the Internet shopping experience influences the sense of security. The implication of the study to researchers and practitioners are also discussed.

References

References available upon request from first author (nsukpnch@memphis.edu)