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Applying the Technology Acceptance Model and Flow Theory to Online Consumer Behavior

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In this study, we consider the online consumer as both a shopper and a computer user. We test constructs from information systems (Technology Acceptance Model), marketing (Consumer Behavior), and psychology (Flow and Environmental Psychology) in an integrated theoretical framework of online consumer behavior. Specifically, we examine how emotional and cognitive responses to visiting a Web-based store for the first time can influence online consumers' intention to return and their likelihood to make unplanned purchases. The instrumentation shows reasonably good measurement properties and the constructs are validated as a nomological network.

A questionnaire-based empirical study is used to test this nomological network. Results confirm the double identity of the online consumer as a shopper and a computer user because both shopping enjoyment and perceived usefulness of the site strongly predict intention to return. Our results on unplanned purchases are not conclusive. We also test some individual and Web site factors that can affect the consumer's emotional and cognitive responses. Product involvement, Web skills, challenges, and use of value-added search mechanisms all have a significant impact on the Web consumer. The study provides a more rounded, albeit partial, view of the online consumer and is a significant step towards a better understanding of consumer behavior on the Web. The validated metrics should be of use to researchers and practitioners alike.

(*TAM*; *Flow Theory*; *Nomological Validity*; *Web Skills*; *Value-Added Search Mechanisms*; *Online Consumer Behavior*)

1. Introduction

Consumer behavior on the Web has been the subject of considerable research in the last few years, but understanding it is made difficult by the fact that the main entities involved, consumers and businesses, have been transformed. First, every consumer is now also a computer user. The online consumer performs all the functions of a traditional consumer on a computer while interacting with a system, i.e., a commercial Web site. S/he, therefore, also exhibits all the characteristics of a computer user. Second, the physical store has been transformed into a virtual store through information technology (IT). In the physical commercial world, the IT used for operations remains mostly in the background, invisible to the consumer. In e-commerce, however, the technology has been moved to the foreground and has become the store itself as a Web site.

Such Web-based stores that use "networks and Internet technology for communications and transactions between various groups of stakeholders like businesses and consumers" have recently also been called

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Net-enabled organizations (NEOs) (Straub and Watson 2001). There is a need to understand and measure such online consumer behavior and much of that burden falls on the IS field (Straub and Watson 2001). To meet this goal, a multidisciplinary approach is ideal, and for this reason we take that approach in this study. In this study, we concentrate on new customer retention and unplanned purchases in business to consumer (B2C) electronic commerce. We also examine how certain emotional and cognitive responses to an initial Web store visit influence these two variables. In addition, we study the effects of some individual consumer differences as well as the impact of using different types of search mechanisms on the Web site. While models and constructs from marketing and psychology are prominent in this work, the research is relevant to the information systems field due to its inclusion of traditional IS variables (Straub and Watson 2001), primarily the variables of the Technology Acceptance Model (Davis 1989).

2. Theoretical Framework and Study Measures

Discussion of metrics will accompany the building of theory-based hypotheses so that we can later examine a nomological network to test construct validity. Although this approach does not follow the conventional article format, we felt that it was justifiable given the stress on metrics in the special issue.

There have been various attempts at building models of consumer behavior online. Examples include looking at "conversion" of Web surfers to Web customers (Berthon et al. 1996), studying consumer information acquisition and purchase decision online (Alba et al. 1997), and determining reasons for not shopping online (Peterson et al. 1997). Transaction cost theory has been used to explain the impact of IT on market structure (Malone et al. 1987) but also to understand individual consumer behavior. For example, buyer search costs are substantial transaction costs and they can determine buyer behavior and eventually market structures (Bakos 1997).

An important question is whether online consumers think and act differently than their offline counterparts. If so, which metrics can we use to capture these differences? For example, online consumers cannot depend on all five senses to make purchases; instead, they must rely on limited product representations such as photographs and text descriptions. Yet, studies have shown that the representation of the product online, indeed the overall quality of the shopping experience, matters for both attitude towards shopping online as well as intention to buy (Burke et al. 1992, Jarvenpaa and Todd 1997a and b, Nowlis and McCabe 2000, Novak et al. 2000). NEOs, however, cannot rely on enticing product displays, exciting music, and "hip" clientele to convince their customers to buy. Instead, they may depend on well designed Web pages and powerful Web features, such as recommender systems and one-click checkouts. The online consumer may also have a different social and work environment than the offline consumer. For example, intention to buy online is influenced by the level of the consumer's lack of leisure time, as in offline shopping, but also by the level of their wired lifestyle (Bellman et al. 1999).

A key difference between online and offline consumer behavior is that the online consumer is generally more powerful, demanding, and utilitarian in her shopping expeditions. As a result, customer loyalty on the Web is low overall (Morrisette et al. 1999); although, as in the physical world, it is influenced by the availability of good, relevant content in an enjoyable context (Rice 1997, Eighmey 1997, Eighmey and McCord 1998). The locus of power seems to be shifting from the vendor to the consumer (Raman 1997) who does not favor traditional advertising and promotions online (Maignan and Lukas 1997). Research has also shown that certain site features, such as the availability of a FAQ section or promotions at the Web store entrance, can influence both traffic on the Web site and overall sales (Lohse and Spiller 1998a and b).

Unlike offline consumers, online consumers are concerned with those risks inherent in buying on the Web, risks such as credit card fraud and not receiving the right products (Bhatnagar et al. 2000). Perceived risk of online shopping and perceived ease of use of the Web site have been shown to influence attitude towards online purchasing (Heijden et al. 2001). The impact of perceived ease of use, however, seems to vary depending on the type of task the consumer is undertaking. Its effect is more significant when consumers

are using a Web site to inquire about products rather than to purchase them (Gefen and Straub 2000).

Online consumers clearly share some characteristics of their offline counterparts but also have unique needs and concerns that reflect their online environment. Our study examines some of those similarities and differences in B2C commerce. We concentrate on new customers of a Web store and we measure their emotional and cognitive responses to determine what influences their intention to return and unplanned purchases. This is the basic nomological network that will allow us to test the metrics developed for the study.

2.1. Customer Intention to Return

Customer retention is one of the primary goals of all companies (Pine et al. 1995, Reichheld and Sasser 1990) but store loyalty for NEOs can be low because of low switching costs (anonymous 1998). Also, for those customers who view shopping as a chance for getting out, socializing, and having fun (Morris 1987), a simply functional Web site can be very unappealing. If customers cannot participate in the activities that make shopping an enjoyable experience, they may stop using Web stores and return to the more enriching and enjoyable physical world (Rice 1997, Quelch and Takeuchi 1981).

Ideally, one would measure customer loyalty by observing customers over time. Our study, however, used a cross-sectional questionnaire, so we used customer *intention* to return, not actual return visits, to measure loyalty. According to the Theory of Planned Behavior (Ajzen 1991) and its predecessor, the Theory of Reasoned Action (Fishbein and Ajzen 1975), behavioral intention can be a strong predictor of actual behavior. Therefore, we felt that intention to return is a satisfactory approximation of actual customer retention.

2.2. Why Customers Return

When shopping on the Web, consumers perform certain tasks that can elicit both emotional and cognitive responses. Those responses can determine a new consumer's intention to return for a second visit to a NEO. The double identity of the online consumer as a traditional shopper and a computer user implies that although attracting and retaining customers is a task that falls largely in the marketing realm, technology also provides tools to assist companies with that task (Straub and Watson 2001). Therefore, to understand why such a consumer returns to a store, we need to look at her interaction with the Web site both as a store and as a system.

First, we look at the Web consumer as a traditional shopper, albeit in a virtual environment. Therefore, we expect that her intention to return after a first visit will be explained by more traditional psychological/marketing variables. One model from environmental psychology states that emotional responses to the environment mediate the relationship between the environment and one's behavior (Mehrabian and Russsel 1974). According to this theory, physical and social stimuli in the environment influence the individual's emotional state. Such stimuli can be as simple as wall colors and room temperature. Also, an individual's personality traits can have an impact on his emotional state. That emotional state is defined in this model by three basic emotional responses: pleasure, dominance, and arousal. These three variables define a person's feelings that, in turn, influence behavior such as job performance and social interaction.

Another model is *flow* (Csikszentmihalyi 1975 and 1977, Csikszentmihalyi and Csikszentmihalyi 1988), defined as "the holistic sensation that people feel when they act with total involvement" (p. 36). When people are in flow, they "shift into a common mode of experience when they become absorbed in their activity. This mode is characterized by a narrowing of the focus of awareness, so that irrelevant perceptions and thoughts are filtered out, by loss of self-consciousness, by a responsiveness to clear goals and unambiguous feedback, and by a sense of control over the environment" (Csikszentmihalyi 1977, p. 72).

In the last few years, flow has also been studied in the context of information technologies and computer-mediated environments and has been recommended as a possible metric of the online consumer experience (Ghani et al. 1991, Trevino and Webster 1992, Webster et al. 1993, Ghani and Deshpande 1994, Hoffman and Novak 1996, Novak et al. 2000). While a valuable construct, we believe that flow is too broad and ill defined because of the numerous ways it has been operationalized, tested, and applied. We do, however, see value in some of the emotional and cognitive components used in flow research, namely, intrinsic enjoyment,

perceived control, and concentration/attention focus. The first two variables also correspond to those of pleasure and dominance from environmental psychology (Mehrabian and Russel 1974). These constructs can be used as valid metrics for the online consumer experience.

2.2.1. Shopping Enjoyment. A common measure of flow is the level of intrinsic enjoyment of an activity, similar to the emotional response of pleasure from environmental psychology. Enjoyment in flow has, in fact, been measured using an adapted scale from environmental psychology (Novak et al. 2000). In the context of online shopping, we operationalized intrinsic enjoyment as shopping enjoyment and measured it with a four-item scale adapted from Ghani et al. (1991).[1] Just as shopping enjoyment is important offline (Morris 1987, Forman and Sriram 1991, Blakney and Sekely 1994), it can be equally important online where it can have a significant impact on attitude and intention towards online shopping (Jarvenpaa and Todd 1997a and b, Eighmey 1997). However, while shopping in the physical world can be a very enriching and emotionally fulfilling activity, shopping on the Web does not always provide the same experience because it is limited to mostly two-dimensional pictures and text.

The importance of enjoyment in online shopping has been challenged in the past. At least one study found that recreational orientation was not different between nononline buyers, occasional online buyers, and frequent online buyers (Li et al. 1999). However, recreational orientation was defined as the consumer's general attitude towards shopping, i.e., if shopping is something they enjoy overall. In our study, we look at the effect that a *specific online* shopping experience, and its enjoyment factor, can have on consumers.

Past studies have indicated that shopping enjoyment can be an important determinant of online customer loyalty (Jarvenpaa and Todd 1997a and b, Rice 1997, Eighmey and McCord 1998). Also, flow research indicates that intrinsic enjoyment can positively impact the use of computer-mediated environments for e-mail use (Trevino and Webster 1992), other software use (Webster et al. 1993), and Web use (Novak et al. 2000). We expect the effects on using a Web store to be similar. We, therefore, hypothesize that:

Hypothesis 1a. *Shopping enjoyment is positively related to intention to return.*

2.2.2. Perceived Control. Perceived control has been used in several theoretical frameworks under different variations such as perceived locus of control (Rotter 1966), perceived control in achievement motivation theory (Atkinson 1964), self-efficacy (Bandura 1982), and perceived behavioral control in the theory of planned behavior (TPB) (Ajzen 1991). In flow research, perceived control has been defined as the level of one's control over the environment and one's actions. It is similar to Bandura's self-efficacy and Ajzen's perceived behavioral control in that it is specific to an action and it can vary for different situations or actions. In the same way, self-efficacy can be task- or situation-specific and perceived behavioral control in TPB is directed towards a specific behavior. Perceived control is also similar to the emotional response of dominance from environmental psychology, where it is defined as feeling "unrestricted or free to act in a variety of ways" in a specific situation and environment (Mehrabian and Russel 1974). In fact, an adapted scale for dominance has been used to measure perceived control in flow research (Novak et al. 2000). In our study, we measured perceived control with a four-item scale adapted from Ghani et al. (1991).

For customers who shop on the Web, the information environment can be very different than for customers who shop in the physical world. The combination of less time available for shopping (Engel et al. 1990, Bellman et al. 1999), constant human cognitive resources available for information processing (Miller 1956), and an explosion of information and products available on the Web has led to more utilitarian customers demanding more control, less effort, and higher efficiency during shopping (Jarvenpaa and Todd 1997a and b, Clawson 1993, Tracy 1998). NEOs have responded to these challenges by providing site features such as search engines and recommendation agents to enable consumers to easily find what they need, learn more about it, and quickly purchase it. All

[1]A description of all the scales used in the study is available in the Appendix.

these site features result in Web customers enjoying high levels of control and convenience (Baty and Lee 1995, Hoffman and Novak 1996). Given the utilitarian nature of online consumers, we expect them to favor sites that provide them with a sense of perceived control, and so they would be more likely to remain loyal to them than other sites:

Hypothesis 1b. *Perceived control is positively related to intention to return.*

2.2.3. Concentration/Attention Focus. For an individual to be in "flow," they must concentrate on their activity. Therefore, concentration has been a significant correlate or measure of flow. It can also play a role in online consumer behavior. Web customers can have a short attention span because of their limited resources of time and information processing (Engel et al. 1990, Quelch and Klein 1996, Miller 1956) together with increased levels of control (Hoffman and Novak 1997, Sheth and Sisodia 1997). However, concentration can be critical for completing their purchases efficiently.

Buying online is carried out in front of a computer at home, with numerous distractions (such as children, television, and the telephone) or at the office (where distractions include work, colleagues, and phone calls.) A consumer can also be distracted by other online activities like e-mail, instant messaging, or other Web sites. Such distractions can limit online consumer concentration. When consumers shop in the physical world, they must allocate most of their attention to that task. They must walk or drive to the stores, look through the products, interact with sales people, and make purchases. They are not able to perform any other activities such as pay their bills or answer their e-mails. On the other hand, online customers can take advantage of the multitasking capabilities of their computers and do more than shop. They can go back and forth between the Web store and their e-mail, interrupt their shopping experience to do something else in their home or office, or take advantage of download delays to perform other tasks. This can distract their attention and decrease their concentration in the purchasing task.

Concentration as a measure of flow has been found to positively influence the overall experience of computer users (Novak et al. 1998) and their intention to use a system repeatedly (Webster et al. 1993). Also, we know that interruptions that limit concentration reduce Web users' satisfaction with online shopping (Xia and Sudharshan 2000). We therefore expect that high concentration, measured with a four-item scale adapted from Ghani et al. (1991), would have a positive impact on intention to return:

Hypothesis 1c. *Concentration is positively related to intention to return.*

However, the online consumer is also a computer user. Our model would be incomplete if we did not account for the reasons computer users adopt a technology such as a specific Web site. So, we turn to the most widely used theoretical model for explaining system usage, the Technology Acceptance Model (TAM) (Davis 1989). TAM has been tested in many empirical studies that include user acceptance of word processors (Davis et al. 1989), spreadsheets (Mathieson 1991), e-mail (Szajna 1996), voice mail (Straub et al. 1995), and telemedicine technology (Hu et al. 1999). By treating a Web store as a technology system and the Web consumer as a computer user, we can apply TAM and test how well it predicts user intention to use the technology, i.e., the Web store. In our case, that would translate into customer intention to return to the store. According to TAM, attitude towards technology affects use of the technology. Two belief variables have an impact on attitude: perceived ease of use and perceived usefulness of the technology. Empirical research has shown that attitude towards the technology is not a significant mediating variable (Venkatesh and Davis 1996, Venkatesh 1999) so we do not include it.

We believe that the TAM variables can also be successfully applied in the context of online consumer behavior. Viewing the store as a Web site or system, we expect that when customers believe that using the Web site will enhance their shopping productivity (perceived usefulness) they will be more likely to return. We anticipate the same effect when customers believe that the Web site is easy to use (perceived ease of use):

Hypothesis 2a. *Perceived usefulness of the Web store is positively related to intention to return.*

Hypothesis 2b. *Perceived ease of use of the Web store is positively related to intention to return.*

While TAM, environmental psychology, and flow theory may seem too discrete to combine in one study, we believe that they can complement each other successfully to form a hybrid theoretical perspective (Shaw and Jarvenpaa 1997). First, environmental psychology and flow share the common variables of enjoyment/pleasure and perceived control/dominance, the emotional responses of this study. The TAM variables (perceived usefulness and perceived ease of use) and concentration provide the cognitive responses. All three theories have at their core a number of emotional and cognitive responses to the environment that influence an individual's behavior. The context of online shopping and the dual nature of the Web customer as a computer user allows them to come together to help us better understand online consumer behavior.

2.3. Unplanned Purchases

While customers may enter a store planning to make specific purchases, they often end up making unplanned purchases. There are four types of unplanned purchases (Stern 1962):

(1) Pure impulse: These are purchases that are made for purely hedonic reasons and are usually characterized by:

(a) spontaneity;

(b) power, compulsion, and intensity;

(c) excitement and stimulation;

(d) disregard for consequences (Rook 1987).

(2) Reminder effect: A stimulus reminds the consumer to buy a product he needs.

(3) Suggestion effect: The customer purchases a product because of a promotion.

(4) Planned impulse: The customer shops without any specific product(s) in mind.

Unplanned purchasing behavior on the Web can be interesting and complex. While shopping trips in the physical world are often constrained by time and geographical location, Web consumers can buy at any time from anywhere, possibly increasing the number of products they buy on impulse. The ability to click on banner ads and be transported immediately to the store, in front of the product advertised could make it easier for consumers to make unplanned purchases. Finally, the Web provides more privacy than the physical world, thereby possibly enabling consumers to indulge in impulsive shopping behavior they would find embarrassing offline.

Some of the same emotional and cognitive responses that impact a customer's intention to return should influence the number of unplanned purchases made. We do not believe, however, that the belief variables of TAM will determine unplanned purchases. TAM predicts intention to use a technology and subsequently the amount of usage. It does not differentiate between specific kinds of use or the results of such use, e.g., making unplanned purchases at a Web store.

We know from flow research that intrinsic enjoyment can increase a user's exploratory behavior (Ghani and Deshpande 1994). Also, in their comprehensive study of impulse buying, Beatty and Ferrel (1998) found that in-store browsing behavior might increase the urge to buy impulsively. If online consumers enjoy their shopping experience, they might engage in more exploratory browsing in the Web store leading to more unplanned purchases. In addition, Beatty and Ferrel found an increase in impulse purchasing urges for shoppers with positive feelings during shopping. Beatty and Ferrel's work has shown the significance of positive emotional responses for unplanned purchases. Their impulsive nature implies that they rely a lot on consumer feelings. So, we believe that shopping enjoyment will induce unplanned purchases online.

Hypothesis 3a. *Consumers with higher shopping enjoyment are more likely to make unplanned purchases.*

Strategically placed promotions and displays throughout a store, can increase unplanned purchases and overall sales (Inman et al. 1990). Online, customers have high levels of control over what they see and do through the use of search engines, intelligent agents, and recommender systems (Baty and Lee 1995, Hoffman and Novak 1996 and 1997, Sheth and Sisodia 1997). This increased control allows consumers more choice over the advertising and promotional material they are exposed to, reducing unplanned purchases (Draft 1993, Rust and Oliver 1994, Shell 1994, Raman and Leckenby 1995, Burke 1997, Raman 1997, Lohse and Spiller 1998a).

In this study, we measure *perceived* control. If it is

equivalent to *actual* consumer control, then, as discussed above, it may lead to a decrease in unplanned purchases. Alternatively, the *perception* of being in control could contribute to a positive experience that could increase unplanned purchases. We believe that *perceived* control online would reflect *actual* control, so we expect that it would impact unplanned purchases negatively.

Hypothesis 3b. *Consumers with higher perceived control are less likely to make unplanned purchases.*

We know that exposure to marketing promotions increases unplanned purchases (Assael 1992). Consumers that are able to focus their attention at a Web store should also be more likely to notice marketing promotions on the site. If consumers are not paying full attention to the contents of the Web site when buying online, they are less likely to notice products that they might otherwise buy on impulse.

Hypothesis 3c. *Consumers with higher concentration are more likely to make unplanned purchases.*

2.4. Determinants of Emotional and Cognitive Responses

Once we know how certain emotional and cognitive responses to a Web store effect a consumer's purchasing behavior, the next logical step is figuring out how to elicit the right responses. To gain insight, the study looked at the effect of several variables that can determine a consumer's emotional and cognitive responses.

2.4.1. Product Involvement. Product involvement and its measurement have been the source of considerable research and debate since Personal Involvement Inventory (PII) was first proposed and analyzed by Zaichkowsky (1985). While there have been many variations on the definition of involvement (Zaichkowsky 1985, Greenwald and Leavitt 1984, Mitchell 1981, Park and Mittal 1985), it is generally accepted that involvement is: (a) a person's motivational state (i.e., arousal, interest, drive) towards an object where (b) that motivational state is activated by the relevance or importance of the object in question (Mittal 1989). In the current study, the Revised Personal Involvement Inventory (RPII) proposed by McQuarrie and Munson (1992) was used to measure product involvement for books, i.e., how interested consumers are in books and how important books are to them.

While involvement with advertisements (Andrews and Durvasula 1991) and with the purchase process (Slama and Tashchian 1985) is important, the study focuses on involvement with the product. We are not concerned with how consumers are attracted to a Web site but with what happens while they visit it. Also, our three emotional and cognitive responses of perceived control, shopping enjoyment, and concentration give us a good indication of the involvement of the consumer with the purchase process. As a result, we only measure product involvement.

A consumer's involvement with the product(s) sold by a Web-based company can have an effect on the consumer's experience and behavior. Involvement, measured simply as importance of the Web to the consumer, also had a strong effect on the primary antecedents of flow (Novak et al. 2000). We expect that customers with higher product involvement will have a more positive shopping experience due to their increased interest in the product. This relationship should be true for shopping enjoyment and concentration but not for perceived control. Perceived control is more of a result of the interaction with the Web site and its features, rather than the type of product purchased.

Hypothesis 4a. *Product involvement is positively related to shopping enjoyment.*

Hypothesis 4b. *Product involvement is positively related to concentration.*

2.4.2. Demographics. Demographic variables have been used extensively in market research to segment the customer population for better marketing strategies (Engel et al. 1990, Assael 1992). In some cases, demographics variables may determine some consumer behavior on the Web (Korgaonkar and Wolin 1999). For parsimony, we do not hypothesize on any possible differences in online consumer emotional and cognitive responses due to gender or age.

2.4.3. Web Skills. One of the most important antecedents of flow is the level of skills of the individual (Csikszentmihalyi 1975 and 1977, Ghani et al. 1991, Trevino and Webster 1992, Webster et al. 1993, Ghani

and Deshpande 1994, Hoffman and Novak 1996, Novak et al. 2000). Skills are measured as perceived by the user and not through observation or a standardized test. Therefore, they are similar to computer self-efficacy, defined as "an individual judgment of one's capability to use a computer" (Compeau and Higgins 1995). Computer self-efficacy has been found to affect computer use, often through its effect on the emotional state of the user by, for example, reducing his computer anxiety (Marakas et al. 1998). Similarly, skills have been consistently found (along with challenges, discussed below) to be significant antecedents to flow. Therefore, we expect, that as online consumers perceive their Web skills to be higher, they will be more likely to have positive emotional and cognitive responses to the Web store they visit.

Hypothesis 5a. *Perceived skills are positively related to perceived control.*

Hypothesis 5b. *Perceived skills are positively related to shopping enjoyment.*

Hypothesis 5c. *Perceived skills are positively related to concentration.*

2.4.4. Product Search Mechanisms. Web stores have responded to the call for customer control by providing various site features like internal search engines and recommender systems to enable consumers to easily find what they need, learn more about it, and quickly purchase it. There have been very few attempts to create a framework or typology of Web-based customer decision-support systems (O'Keefe and McEachern 1998). We differentiated search mechanisms according to the two types of information they use: nonvalue-added and value-added.

Nonvalue-added information consists of all information that is publicly available and standardized, such as objective information that describes the product sold. For a bookstore, such information can be the book title, author, and publisher. *Value-added information* consists of all information that is generated by the NEO. It is subjective and often proprietary to the entity that generates it. Value-added information can be created by the NEO (such as a weekly bestseller list), from a third party (such as hyperlinks to online reviews of products by independent parties or Oprah's Book Club selections), or from the customers themselves (such as customer reviews available to other customers).

We know that product search may be undertaken simply because it is fun as in window shopping. Also, customers often engage in ongoing information gathering independent of specific needs or purchase decisions (Bloch et al. 1986). For them, value-added information can prove interesting and helpful. Whether it is reviews of books by other customers or stock recommendations by analysts, customers can enjoy this wealth of information about products and services not always available in the physical world. In general, we expect that the more enriched and satisfying the shopping experience is, the more likely customers are to experience high levels of perceived control, shopping enjoyment, and concentration. Because product information search can be a fun-seeking experience (Bloch et al. 1986), we expect that the use of value-added search mechanisms can make the shopping experience more fulfilling and enjoyable. Access to such information can improve consumer decision making through complex, nonlinear, and nondirected queries (Hoffman et al. 1995) and can be an important incentive for people to shop online (Jarvenpaa and Todd 1997a and b) by providing more control over their purchases. Such mechanisms may also help customers concentrate better because they require active customer participation and interpretation of the value-added information.

Hypothesis 6a. *The use of value-added search mechanisms is positively related to perceived control.*

Hypothesis 6b. *The use of value-added search mechanisms is positively related to shopping enjoyment.*

Hypothesis 6c. *The use of value-added search mechanisms will be positively related to concentration.*

2.4.5. Challenges. Along with individual skills, the challenges presented by an activity are the most important predictors of flow (Csikszentmihalyi 1975 and 1977, Ghani et al. 1991, Trevino and Webster 1992, Webster et al. 1993, Ghani and Deshpande 1994, Hoffman and Novak 1996, Novak et al. 2000). Positive challenges from the shopping experience on the Web can affect consumer responses to that experience. It is

important to stress here that we are looking at *positive* challenges, such as those presented by a sport or a game. We are not looking at negative challenges that are due to problems like difficult navigation, slow download time, or product unavailability. A Web site can be perceived by a consumer as positively challenging in the same way an electronic game is challenging. The process of discovering information and using special Web site features can feel challenging and ambitious with positive effects.

Hypothesis 7a. *The level of challenges of a Web store is positively related to perceived control.*

Hypothesis 7b. *The level of challenges of a Web store is positively related to shopping enjoyment.*

Hypothesis 7c. *The level of challenges of a Web store is positively related to concentration.*

The complete theoretical framework (Figure 1) is also a nomological network used to test the construct validity of our variables. Constructs are considered nomologically valid if, as measured in our study, they predict or are predicted by other constructs consistent with past research (Cronbach 1971, Bagozzi 1990, Straub et al. 1995).

3. Methods

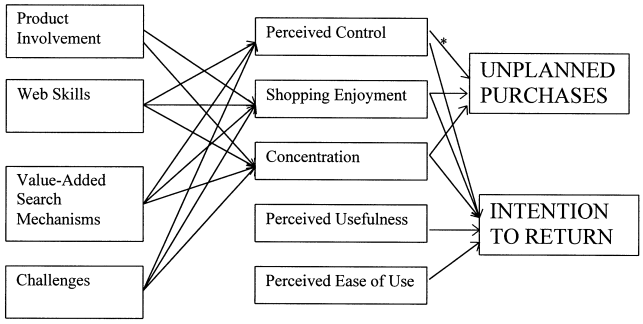
To test our nomological network, an empirical study using an online questionnaire was administered to actual Web customers. The Web store selected for this study is Booksamillion.com, the online branch of the traditional "brick and mortar" company Books-A-Million. Booksamillion.com was selected for several reasons:

(1) The site is comprehensive and functional, eliminating any Web site problems.

(2) Booksamillion.com is a relatively unknown online bookseller that guaranteed us enough first-time customers for our sample.

(3) The site, unlike booksellers like Amazon.com, primarily sells books. Books are a commodity—a fact that helps eliminate variance in product quality (the actual physical book, not the quality of its content). Though the site sells a few other items, such as coffee and magazines, the main focus of the store is books.

Figure 1 Theoretical Framework



* All relationships are hypothesized positive except Perceived Control → Unplanned Purchases, which is negative.

3.1. Study Design

Obtaining permission to directly survey Booksamillion.com customers proved to be too difficult. Companies are reluctant to participate in research projects that interrupt customers' shopping or the firm's internal operations. So, we simulated actual customers by recruiting subjects, asking them to visit the Booksamillion.com site and then having them answer our questionnaire. The fact that subjects did not visit the Web site on their own volition is definitely a limitation of the study. However, while it is possible that their intention to return would differ when directed to visit the site by the researcher, we do not believe that the difference is large enough to compromise the generalizability of our results.

To measure unplanned purchases we needed to know which purchases consumers had initially planned to make when they visited the store. We simulated an initial purchase plan by providing subjects with a $10 gift certificate. Subjects were asked to fill out the first part of the questionnaire for a $10 gift certificate to an online bookstore, which they would visit upon completion. The first part asked them questions unrelated to their particular visit, including how many (if any) books they intended to buy when they visited the online bookstore. The $10 gift certificate ensured us that some of the subjects would form an initial purchase plan of spending the gift certificate at the store.

After visiting the site, we asked the subjects to immediately return and answer the second part of the questionnaire, where we asked about their shopping

experience and their actual purchases. Any purchases made in addition to what they had initially said they would buy were unplanned purchases. Unplanned purchases were calculated using the *number* of books purchased over their initial purchase plan, instead of the *amount* (in dollars) spent over the $10 gift certificate. We felt that it was a more accurate measure because customers most often go to a store with a plan to buy a number of books and not to spend an amount of money. Because our hypotheses deal with the *likelihood* of making unplanned purchases, we created a binary variable with the value zero if a customer made no unplanned purchases and the value one if a customer made some unplanned purchases.

3.2. Implementation

The sample was recruited from the database of Dynamic Logic, Inc., an online market research firm that specializes in the measurement of the effectiveness of online ad. campaigns through the use of online questionnaires. Dynamic Logic also hosted the questionnaire using its patented technology that features randomized order of questionnaire items (to eliminate fatigue effect), live online results, and automated data collection.

The sample was randomly selected from the Dynamic Logic database of registered participants who were e-mailed an invitation to participate in an online questionnaire for a $10 gift certificate to an online bookstore, $10 in cash (via check), and the chance to win $1,000 in cash. Each subject was asked which online bookstores he had visited in the past and if Books amillion.com was among them; the subject was screened out, leaving only new customers. They filled out the first part of the questionnaire and were presented with a gift certificate code and a button. When they clicked it, a new window opened with the Books amillion.com site. They were instructed to visit Books amillion.com and then immediately return to the questionnaire to fill out the second part for an additional $10 in cash and a chance to win $1,000. We used a cash incentive for the second part of the questionnaire, instead of another gift certificate, so as not to influence the respondents' answer to the question on their intention to return to the Web store.

Our research instrument asked about the consumers' experience during that specific visit to the store. This increased the validity of our measures. Because we were not working with Booksamillion.com, we were unable to use log files to measure behavioral variables such as the number of purchases. We relied on self-reports for such measures. Subjects were not allowed to proceed unless they filled out the entire questionnaire (see Appendix C).

3.3. Sample and Descriptive Statistics

The questionnaire ran for one week. The first part of the questionnaire was completed by 300 subjects, and 280 of those filled out the second part, a retention rate of 93.3%. All 280 subjects were new customers to Books amillion.com. There were 12 international respondents, mainly from Canada. 63% of the sample was female, and about 50% of the subjects were 30 to 50 years old. 77% of the subjects had at least some college education, and 48% reported an income of over $50,000. Almost half of the subjects reported having children under the age of 18, and 68% reported spending over 15 hours per week online. Almost 50% of the subjects reported buying books online at least four times a year. When asked to rate loyalty to a specific online bookstore on a scale from one to six, many subjects (over 45%) reported low customer loyalty (values of one or two on a six-point scale).

The majority of respondents (73.2%) reported that they intended to buy no books or that they did not know how many they would buy. There were 20% who wanted to purchase one book. After visiting the site, almost half of the subjects said they purchased at least one book, with almost 10% purchasing more than one. About 32% of the subjects made an unplanned purchase; 24% bought one more book than planned; 6% bought two more; and four subjects bought more than two extra books. Very few purchased cross-selling items such as coffee (4 subjects) or magazines (17 subjects). Many respondents (65%) spent 20 minutes or less at Booksamillion.com, indicating an efficient purchasing process. Subjects seemed relatively satisfied with their experience, with 33% reporting they would return to Booksamillion.com (giving six or seven on a seven-point scale). Only 14% said that they would not return (giving one or two on the same scale).

3.4. Results

Based on prior research, we expected the flow factors as well as the TAM factors to be correlated. Therefore,

we factor analyzed our scales using principal components extraction with direct oblimin rotation, an appropriate method when there is reason to expect the factors to be correlated (Pedhazur and Pedhazur 1991). This analysis validated our instrument and the multi-item scales, as shown in the Appendix. All scales had acceptable Cronbach's alpha values (Nunnally 1967), as seen in Table 1.

The testing of the hypotheses that follows is intended to demonstrate further validation of the instrumentation, as discussed earlier. If the constructs perform as predicted by theory, then we can infer that the measurement of the constructs is nomologically valid.

In testing the model, we were interested in seeing the difference in explanatory power between the part of the model that considers the online consumer as a shopper and that which considers the consumer as a computer user. Therefore, we tested the three flow variables separately from the TAM variables. We then tested the TAM variables independently. Finally we tested all variables together in a single model.

Table 2 shows the linear regression model with the three flow variables. After removing four outliers that had standardized residuals with absolute values greater than 3.0 (Chatterjee et al. 1995), the final model had an excellent fit and explained a large percentage of variance with a $R^2 = 0.472$. Only the coefficient for shopping enjoyment was statistically significant. Therefore, Hypothesis 1a is supported but Hypotheses 1b and 1c are not.[2]

Table 3 shows the linear regression model with the TAM variables. After removing the same four outliers, the model had a great fit and explained about the same variance ($R^2 = 0.489$). Only the coefficient for perceived usefulness was significant, while that for perceived ease of use was not. Therefore, only Hypothesis 2a is supported.

Comparing the two models, we saw very little difference in their predictive ability for intention to return. We ran a combined regression model, as seen in Table 4, after removing the same four outliers. The model had good fit and, as expected, explained more variance ($R^2 = 0.546$). The same coefficients for shopping enjoyment and perceived usefulness were significant, so the same hypotheses are supported.

We ran a logistic regression on the binary variable of unplanned purchases to test the effects of perceived control, shopping enjoyment, and concentration. Table 5 shows the results. The chi-square value shows that

Table 1 Summary Statistics and Cronbach's Alpha Values for All Scales

	Mean	S.D.	Cronbach's Alpha
Concentration	4.52	1.46	0.910
Shopping Enjoyment	4.30	1.52	0.944
Perceived Control	4.98	1.52	0.813
Skills	5.31	1.50	0.918
Challenges	2.96	1.44	0.803
Involvement	6.13	1.01	0.929
Perceived Ease of Use	5.16	1.61	0.927
Perceived Usefulness	4.15	1.57	0.924
Intention to Return	4.59	1.77	N/A
Value-Added Used	1.37	1.31	N/A

[2]For all regression models in the study, low VIF values indicate low collinearity, the standardized residuals are normally distributed, and there is no heteroscedasticity.

Table 2 Linear Regression Model for Intention to Return with the Flow Variables

Variable	B	Std. Error	ß
Constant	0.866**	0.327	
Perceived Control	0.104	0.064	0.090
Shopping Enjoyment	0.705**	0.080	0.608**
Concentration	0.045	0.070	0.037

$N = 276$; $R^2 = 0.472$; $F = 81.069$ ($p < 0.01$)—where ** $p < 0.01$, * $p < 0.05$, ° $p < 0.1$

Table 3 Linear Regression Model for Intention to Return with the TAM Variables

Variable	B	Std. Error	β
Constant	1.130**	0.259	
Perceived Usefulness	0.695**	0.066	0.621**
Perceived Ease of Use	0.119°	0.064	0.109°

$N = 276$; $R^2 = 0.489$; $F = 130.651$ ($p < 0.01$)—where ** $p < 0.01$, * $p < 0.05$, ° $p < 0.1$

Table 4 Linear Regression Model for Intention to Return with All Variables

Variable	B	Std. Error	β
Constant	0.701*	0.308	
Perceived Control	0.021	0.069	0.018
Shopping Enjoyment	0.400**	0.088	0.345**
Concentration	0.040	0.066	0.033
Perceived Usefulness	0.465**	0.074	0.415**
Perceived Ease of Use	−0.002	0.073	−0.002

$N = 276$; $R^2 = 0.546$; $F = 64.986$ ($p < 0.01$)—where $p < 0.01$, * $p < 0.05$, ° $p < 0.1$

the model has good fit but none of the coefficients is significant. So, Hypotheses 3a, b, and c are not supported.

We used linear regression models to test the effect of individual and environmental factors on perceived control, shopping enjoyment, and concentration. Table 6 shows the results of the regression model for concentration. The model had good fit and explained about 21% of the variance. The coefficients for product involvement, challenges, and skills were significant and positive, providing support for Hypotheses 4b, 7c, and 5c. The coefficient for value-added use was in the right direction, but not significant.

The regression model for shopping enjoyment had an even better fit and explained more variance with a $R^2 = 0.281$, as seen in Table 7. The coefficients for product involvement, challenges, skills, and value-added use were highly significant and positive, providing support for Hypotheses 4a, 7b, 5b, and 6b, respectively.

The regression model for perceived control had a moderately good fit ($F = 2.898$, $p = 0.006$) but no significant coefficients and a $R^2 = 0.070$ that indicated the model explained too little variance. Therefore, we could not verify Hypotheses 7a and 8a.

Figure 2 shows our nomological network but includes only the relationships that were supported by our data.

4. Discussion

An important contribution of our study is the testing and validation of metrics for consumer behavior on the

Table 5 Logistic Regression for Unplanned Purchases with the Flow Variables

	B	Std. Error	Exp (B)
Constant	−2.974	0.614	0.051
Concentration	0.206°	0.123	1.229°
Shopping Enjoyment	0.142	0.139	1.152
Perceived Control	0.123	0.111	1.130

Initial −2 Log Likelihood = 350.136

−2 Log Likelihood = 332.413

Chi-square = 17.724**

df = 3

$N = 280$; Cox and Snell $R^2 = 0.061$; Nagelkerke $R^2 = 0.086$—where ** $p < 0.01$, * $p < 0.05$, ° $p < 0.1$

Table 6 Linear Regression Model for Customer Concentration

Variable	B	Std. Error	β
Constant	0.047	0.646	
Involvement	0.407**	0.083	0.280**
Challenges	0.221**	0.056	0.216**
Skills	0.138*	0.056	0.142*
Value-Added Use	0.130°	0.070	0.116°
Nonvalue-Added Use	0.088	0.074	0.074
Gender	0.014	0.176	0.005
Age	0.008	0.007	0.066

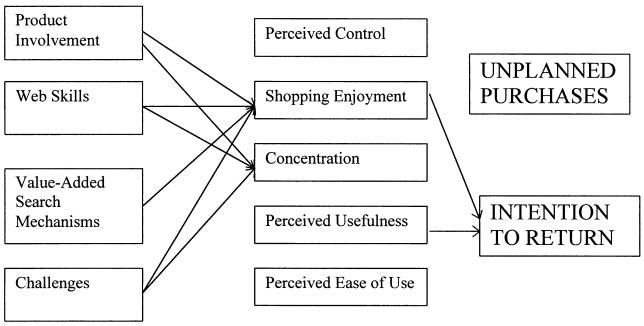
$N = 280$; $R^2 = 0.210$; $F = 10.321$ ($p < 0.01$)—where ** $p < 0.01$, * $p < 0.05$, ° $p < 0.1$

Table 7 Linear Regression Model for Customer Shopping Enjoyment

Variable	B	Std. Error	β
Constant	0.086	0.640	
Involvement	0.328**	0.082	0.218**
Challenges	0.358**	0.055	0.338**
Skills	0.182**	0.055	0.180**
Value-Added Use	0.240**	0.069	0.207**
Nonvalue-Added Use	0.042	0.073	0.034
Gender	0.171	0.174	0.054
Age	−0.011°	0.007	−0.090°

$N = 280$; $R^2 = 0.281$; $F = 15.095$ ($p < 0.01$)—where ** $p < 0.01$, * $p < 0.05$, ° $p < 0.1$

Figure 2 Relationships Supported by Empirical Study



All relationships are statistically significant at the $p < 0.05$ level.

Web as called for by Straub and Watson (2001). In addition to the fact that all the scales used in the study showed high reliability, those of shopping enjoyment, perceived usefulness, involvement, challenges, and skills also demonstrated high nomological validity. When tested in a nomological network derived from prior research, they generally behaved as demonstrated in past studies. Therefore, we believe that future research in online consumer behavior can use these metrics with some assurance. Testing them against other important factors not included in this study will advance our understanding of online consumer behavior.

From a substantive point of view, we examined how emotional and cognitive responses to the shopping experience on the Web can influence online consumer behavior, specifically, intention to return and unplanned purchases for new customers. Looking at the online consumer both as a shopper and a computer user, by blending theoretical paradigms from psychology, marketing, and information systems, we confirmed the dual nature of the online consumer as a traditional shopper and a computer user. Our results show that both enjoyment of the shopping experience (a psychological/marketing variable) and perceived usefulness of the Web site (an IS variable for system use) are important for a new customer's intention to return.

Furthermore, the significance of perceived usefulness shows that the Technology Acceptance Model can be successfully applied, even when the behavior in question is not one of pure system usage. When tested alone, without the flow variables, perceived usefulness explained 49% of variance of intention to return, demonstrating even further the robustness of TAM in this context. Our results also confirmed prior TAM research that found that perceived usefulness was a more important predictor of intended system usage than perceived ease of use (Davis 1989, Hu et al. 1999).

In accordance with research that has demonstrated the utilitarian nature of online consumers (Jarvenpaa and Todd 1997a and b, Clawson 1993), we found that a consumer's belief about the usefulness of a Web store (a cognitive response) can determine their future visits. However, we also found that an emotional response to the Web site can also have the same effect. Even though consumers may not *expect* to be entertained when they shop online, if they do enjoy their experience, they are more likely to return to the Web store. These results show that online consumers are not purely utilitarian, valuing only efficiency in shopping, but they can also enjoy shopping online enough to make them return. If this means that online consumers are more similar to offline ones than previously thought, researchers of online consumers may successfully use previous research done offline, though with caution.

Our results on unplanned purchases were surprising. We found no relationship between unplanned purchases and the flow variables of shopping enjoyment, concentration, and perceived control. A possible reason for the weak results could be our $10 gift certificate. One could argue that it is difficult to purchase anything with $10, even if it is a book. This may have prevented some of our subjects from buying anything at all in the first place. Unfortunately, the high cost of such an incentive made it infeasible for our study. It is also possible that there are other variables that can explain unplanned purchases that we did not include in our framework. Future research needs to reexamine the relationships we tested as well as introduce new possible predictors.

Our results also confirmed some prior research on flow. We found that perceived Web skills and positive challenges are positively related with shopping enjoyment and concentration of online consumers. The importance of Web skills is also consistent with work done in computer self-efficacy (Marakas et al. 1998)

and stresses once again the "computer user" part of the dual identity of the online consumer. The more confident and comfortable consumers feel with the Web site, the more likely it is that they will enjoy it.

The nonsignificance of the relationship of flow variables with unplanned purchases and intention to return (with the exception of shopping enjoyment) puts into question the use of flow in the context of online shopping. Unlike the study by Novak et al. (2000), which defined and measured the flow state for general Web users, we examined the effect of flow variables on consumer behavior during a *particular* store visit. It may be the case that for online consumers, not simply Web users, a multidimensional flow construct does not explain their behavior, while a simple construct like shopping enjoyment does. Therefore, we urge cautious use of flow in online consumer behavior research.

We also found that the use of value-added search mechanisms may influence the experience of online consumers that can in turn affect their behavior. The use of a utilitarian tool such as a search engine is positively related with shopping enjoyment, an emotional response. However, we found no relationship between using value-added search mechanisms and perceived control or concentration. A possible implication is that Web site features that are intended to be mere tools for the consumer to use might have a strong emotional impact. An alternative explanation is that the more consumers enjoy themselves, the more they use value-added search mechanisms.

Our results also have important practical implications for companies. The dual nature of the online consumer as a traditional shopper and as a computer user means that appropriate interface, navigational structure, and other elements of human-computer interaction may be just as important to retaining customers as good customer service and lower prices. Many Web-based companies have taken large steps to increase the convenience to their customers by providing features like express checkouts and recommender systems. However, our results have shown that emotional experiences such as shopping enjoyment can help retain customers. Therefore, online stores should provide both utilitarian value as well as hedonic value to their customers, partly by providing them with value-added search mechanisms.

Our study was not without limitations. Because our subjects had registered with an online market research company and took multiple online questionnaires, they may be more Web-savvy than the average user. Unfortunately, to recruit subjects online, they must be comfortable enough with the Web to be recruited and to participate. Our "Web skills" scale shows a high mean of 5.3 on a seven-point scale, but also a high variance of 2.25. That justifies some cautious generalizations of our results. The same applies to our scale for "perceived ease of use" with a mean of 5.16 and a variance of 2.6.

An important variable missing from our framework is planned purchases of first-time customers. How do customers decide to visit a specific Web store for a planned purchase, and what factors determine whether they will actually make that purchase at that store? Our study design did not capture actual customers as they came to a store for the first time. Instead, we had to simulate new customers by directing our subjects to the Web store. A future study that captures actual new customers would be able to better explain the factors behind customer acquisition and planned purchasing.

There are also many additional individual and environmental factors that can determine a consumer's emotional and cognitive responses. In environmental psychology, physical stimuli like colors as well as personality traits can influence an individual's emotional state (Mehrabian and Russsel 1974). In marketing, there have been studies on a variety of individual characteristics such as motivation and knowledge as well as a broad range of environmental variables including family, culture, and social class (Engel et al. 1990). There has also been some research on the antecedents of the two belief variables in the TAM (e.g., Venkatesh and Davis 1996). Our study did not consider any of these variables and we urge other researchers to do so.

We consider this study a stepping stone on the road to understanding online consumer behavior. Many issues remain unresolved and many questions unanswered. We took a first step at studying the consumer experience on the Web and found a number of metrics to be reliable and nomologically valid. Future research can use these metrics to explain how and why consumers think, act, and feel when shopping on the Web.

5. Appendices

Appendix A. Structure Matrix from Principal Component Analysis with Direct Oblimin Rotation

	FACTORS						
ITEMS	1 (Concentration)	2 (Enjoyment)	3 (Perceived Control)	4 (Challenges)	5 (Perceived Usefulness)	6 (Perceived Ease of Use)	7 (Skills)
. . . I was absorbed intensely in the activity.	−0.886						
. . . My attention was focused on the activity.	−0.861						
. . . I concentrated fully on the activity.	−0.860						
. . . I was deeply engrossed in the activity.	−0.883						
. . . I found my visit interesting.		0.559					
. . . I found my visit enjoyable.		0.662					
. . . I found my visit exciting.		0.648					
. . . I found my visit fun.		0.658					
. . . I felt confused.			0.473				
. . . I felt calm.			0.929				
. . . I felt in control.			0.862				
. . . I felt frustrated.			0.635				
. . . challenged me to perform to the best of my ability				0.872			
. . . provided a good test of my skills				0.842			
. . . stretched my capabilities to the limits				0.806			
Using the site can improve my shopping performance.					0.928		
Using the site can increase my shopping productivity.					0.914		
Using the site can increase my shopping effectiveness.					0.932		
I find using the site useful.					0.725		
Learning to use the site would be easy for me.						0.899	
My interaction with the site is clear and understandable.						0.814	
It would be easy for me to become skillful at using the site.						0.898	
I find the site easy to use.						0.899	
I am very skilled at using the Web.							0.945
I know how to find what I want on the Web.							0.914
I know more about using the Web than most users.							0.914

Appendix B. Correlation Matrix

Pearson Bivariate Correlations

	Perceived Ease of Use	Perceived Usefulness	Perceived Control	Enjoyment	Concentration	Skills	Involvement	Value-Added Used	Intention to Return
Challenges	0.01	0.39**	−0.01	0.34**	0.23**	−0.10	0.02	0.06	0.27**
Perceived Ease of Use		0.68**	0.70**	0.66**	0.43**	0.24**	0.31**	0.22**	0.47**
Perceived Usefulness			0.55**	0.75**	0.47**	0.14*	0.19**	0.21**	0.62**
Perceived Control				0.58**	0.25**	0.06	0.12*	0.15*	0.39**
Enjoyment					0.65**	0.18**	0.27**	0.28**	0.62**
Concentration						0.14*	0.33**	0.21**	0.39**
Skills							0.09	0.06	0.09
Involvement								0.12*	0.18**
Value Added									0.19**

where ** $p < 0.01$, * $p < 0.05$

Appendix C. Survey Instrument

1. Intention to Return

We measured customer intention to return with the following single item on a seven-point Lickert scale ranging from one—extremely unlikely to seven—extremely likely:

"How likely is it that you will visit Booksamillion.com again in the future?"

2. Unplanned Purchases

We used two questions to determine the number of unplanned purchases. The first question asked how many books the customer intended to buy when she would be directed to the bookstore site with the $10 gift certificate. The possible answers were none, one, two, three, four or more, and "I don't know how many" books. The second question asked how many books they actually bought as well as how many of the other items sold on Booksamillion.com, such as coffee and magazines, they purchased.

We calculated the number of unplanned purchases by subtracting the first question from the second one. For those subjects that reported "I don't know how many books" in the first question, we considered their initial planned purchases as zero. We then created a binary variable that takes the value zero for subjects who did not make unplanned purchases and the value one for those who did.

3. Search Mechanisms Used

A multiple response question was used to determine which search mechanisms the customer used, and a single response question asked customers which one of the search mechanisms was the most helpful. Once again, due to the lack of resources, we depended on self-reports rather than Web logs to determine which search features customers used. We separated the search mechanisms available to the customers into value-added and nonvalue-added. We then created a variable that measured the use of each type of search mechanism by adding the number of search mechanisms the customers reported they had used.

Value-Added Search Mechanisms	Nonvalue-Added Search Mechanisms
Bestsellers	Book Search
Bargains	Browse Subjects
Reviews	Upcoming Titles
Weekly Specials	All Authors
New and Notable	Road to El Dorado
Easter	Left Behind Series
Great Movie Reads	eBook: Riding the Bullet
Campaign 2000	Star Wars
Oprah's Book Club	Pokemon
Seen in NY Times	MLB Showdown 2000
Graduation	Bible Covers
Mother's Day	Accessories
Harry Potter Fans	Magic the Gathering
Autographed Books	Yo Yos
Popular Business	Furby
All Literary Awards	Tae Bo
Music Bestsellers	Coin Collectibles
Tender Times	Don't Sweat Series
	Coffee
	Magazines

Classification of search mechanisms on Booksamillion.com

4. Multi-Item Scales

Following are the multi-item scales used in the study and the source in prior literature from which they were adapted. All items used a seven-point Lickert scale:

Concentration/Attention Focus (Ghani et al. 1991):

During my last visit to Booksamillion.com . . .

. . . I was absorbed intensely in the activity.
. . . My attention was focused on the activity.
. . . I concentrated fully on the activity.
. . . I was deeply engrossed in the activity.

Shopping Enjoyment (Ghani et al. 1991):

During my last visit to Booksamillion.com . . .

. . . I found my visit interesting.
. . . I found my visit enjoyable.
. . . I found my visit exciting.
. . . I found my visit fun.

Perceived Control (Ghani et al. 1991):

During my last visit to Booksamillion.com . . .

. . . I felt confused *(reversed).*
. . . I felt calm.
. . . I felt in control.
. . . I felt frustrated *(reversed).*

Web Skills (Novak et al. 1998):

I am very skilled at using the Web.
I know how to find what I want on the Web.
I know more about using the Web than most users.

Challenges (Novak et al. 1998):

Using Booksamillion.com challenged me to perform to the best of my ability.
Using Booksamillion.com provided a good test of my skills.
Using Booksamillion.com stretched my capabilities to the limits.

Perceived Usefulness (Venkatesh and Davis 1996):

Using Booksamillion.com can improve my shopping performance.
Using Booksamillion.com can increase my shopping productivity.
Using Booksamillion.com can increase my shopping effectiveness.
I find using Booksamillion.com useful.

Perceived Ease of Use (Venkatesh and Davis 1996):

Learning to use Booksamillion.com would be easy for me.
My interaction with Booksamillion.com is clear and understandable.
It would be easy for me to become skillful at using Books amillion.com.
I find Booksamillion.com easy to use.

Product Involvement (McQuarrie and Munson 1992):

We would like to know how interested you are in books. Please use the series of descriptive words listed below to indicate your level of interest in books:

Important	O O O O O O O	Unimportant
Irrelevant	O O O O O O O	Relevant
Means a lot to me	O O O O O O O	Means nothing to me

Unexciting	O	O	O	O	O	O	O	Exciting
Dull	O	O	O	O	O	O	O	Neat
Matters to me	O	O	O	O	O	O	O	Doesn't matter to me
Boring	O	O	O	O	O	O	O	Interesting
Fun	O	O	O	O	O	O	O	Not fun
Appealing	O	O	O	O	O	O	O	Unappealing
Of no concern to me	O	O	O	O	O	O	O	Of concern to me

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