Integrating attitudinal theories to understand and predict use of technology-based self-service

The Internet as an illustration

Received June 2001
Accepted September 2001

L. Michelle Bobbitt and Pratibha A. Dabholkar
University of Tennessee, Knoxville, Tennessee, USA

Keywords *Technology, Self-service, Internet, Consumer attitudes, Situational analysis*

Abstract *Technology-based self-service is growing at a tremendous rate all over the world, but a strong unifying theory to understand this form of service is lacking. Proposes a comprehensive conceptual framework that incorporates several well-known attitudinal theories to explain the pivotal role of attitudes in influencing intentions and behavior related to technology-based self-service. The framework makes it possible to understand and predict better consumer decisions related to using technology-based self-service by thoroughly examining underlying consumer attitudes. Uses the Internet to illustrate how our framework can be applied to study consumer behavior related to a specific technology-based self-service. Draws on insights from the extant literature on technology-based self-service and also incorporates the many unique characteristics of the Internet that have implications for theory. Discusses practical implications of our model for marketers and provides directions for future research on technology-based self-service in general and the Internet in particular. With its integrative approach to theory, also contributes to the attitudinal literature.*

Introduction

The way in which consumers perform many everyday activities, such as shopping and banking, has changed dramatically over the past decade. This change has occurred mainly through the development of technology-based self-service formats (cf. Dabholkar, 1994a), which enable consumers to perform services for themselves quickly and conveniently. Some common applications of technology-based self-service include conducting bank transactions through automated teller machines, shopping through the Internet, making reservations and purchasing tickets through kiosks, checking out of hotel rooms through interactive television, and using self-scanning systems at retail stores. Research that promotes a greater understanding of forces that motivate current and potential users of technology-based self-service is therefore of high priority (Dabholkar, 2000). However, no unifying theoretical framework has been developed to study the underlying factors that drive consumer decisions regarding technology-based self-service.

Theoretically-based empirical research on technology-based self-service has focused primarily on factors associated with technology-based self-service. For example, researchers (Dabholkar, 1996; Davis *et al.*, 1989) have found ease of

International Journal of Service Industry Management, Vol. 12 No. 5, 2001, pp. 423-450.

use and fun to be important factors in evaluating technology-based self-service. Dabholkar (1996) also found control and waiting time to be important determinants for using technology-based self-service. Consumers are more likely to use technology-based self-service if it offers them a sense of control, and if they do not have to wait to use it. Evans and Brown (1988) found that safety concerns may keep people from using technology-based self-service. Meuter *et al.* (2000) found that if a technology performs as expected, provides advantages over interpersonal service, and/or helps consumers in difficult situations, consumers are likely to evaluate the technology-based self-service favorably and, as a result, be satisfied.

Other empirical research on technology-based self-service has concentrated on characteristics of users vs nonusers. Most of this research has focused on demographics (e.g. Darian, 1987; Stevens *et al.*, 1989). Another characteristic that has been considered is the need for interaction with a service employee (Dabholkar, 1992, 1996; Prendergast and Marr, 1994). Technology-based self-service applications allow consumers to perform many activities themselves; however, some consumers prefer not to use technology-based self-service because they prefer interacting with employees.

Whereas the extant research has opened the way to examine technology-based self-service, there is no comprehensive theoretical framework for understanding and/or predicting why consumers decide to use or not use such service options. One way to truly understand what drives consumer decisions is to examine underlying consumer attitudes. There has been a tremendous amount of research on consumer attitudes (e.g. Helgeson *et al.*, 1984) and both researchers and marketers have long been interested in attitudes and the attitude-behavior link. In fact, several studies have looked at consumer attitudes in relation to specific technology-based self-service. For example, Korgaonkar and Moschis (1987) found that certain characteristics of consumers (time-consciousness, opinion leadership, and high-tech inclinations) predicted positive attitudes toward videotex services. Similarly, others have noted that the adoption of in-home shopping methods such as the Internet is a function of attitudes, needs, experiences, and personal characteristics (Eastlick, 1993; Shim and Drake, 1990). In addition, Eastlick (1993) found that attitudes toward properties of a videotex shopping system were a better predictor of intent to shop than demographic factors.

Although these studies are heading the research in the right direction, there is a lack of a broad conceptual framework to study attitudes toward technology-based self-service in general. An exception is research by Dabholkar (1996, 1992) which proposes and finds that favorable attitudes toward using technology in general will result in favorable attitudes toward using technology-based self-service. Another exception is a generalized attitude-based choice model (Dabholkar, 1994b) that is tested and supported for a specific technology-based self-service. Whereas these attitudinal studies represent a good start to understanding consumer motivation to use

technology-based self-service, a unifying framework drawing on the rich and varied attitudinal literature is lacking.

The purpose of this paper is to develop a conceptual framework that incorporates aspects of several well-known attitudinal theories to provide a deeper understanding of consumer motivation and behavior related to technology-based self-service. The objective is to advance theory related to technology-based self-service and to provide directions for future research in this area. The comprehensive model is presented in Figure 1, where the propositions are couched in terms of technology-based self-service. However, rather than discuss the model in these general terms in the paper, the Internet is used as an example of a technology-based self-service to illustrate the use of the model in a tangible way. Internet shopping behavior is considered from two perspectives – using the Internet for purchasing and for acquiring information. Parallel to this application, the proposed model can be applied to any technology-based self-service such as shopping through interactive television, using touch screen kiosks at retail stores, and using handheld pagers to access wireless e-mail.

The Internet is selected for illustration purposes because integrative theory is lacking in this area despite its phenomenal market growth. Already, one in every six people in North America and Europe use the Internet (NUA, 2001). By the end of 2001, the global e-commerce market is expected to reach $1.2 trillion (Global Sight Corporation, 2001). However, research on Internet usage has focused primarily on user demographics and/or user behavior (Bonn *et al.*, 1999; Shim and Drake, 1990). At the other extreme, theory related to the Internet (e.g. Hoffman and Novak, 1996) has focused heavily on the medium,

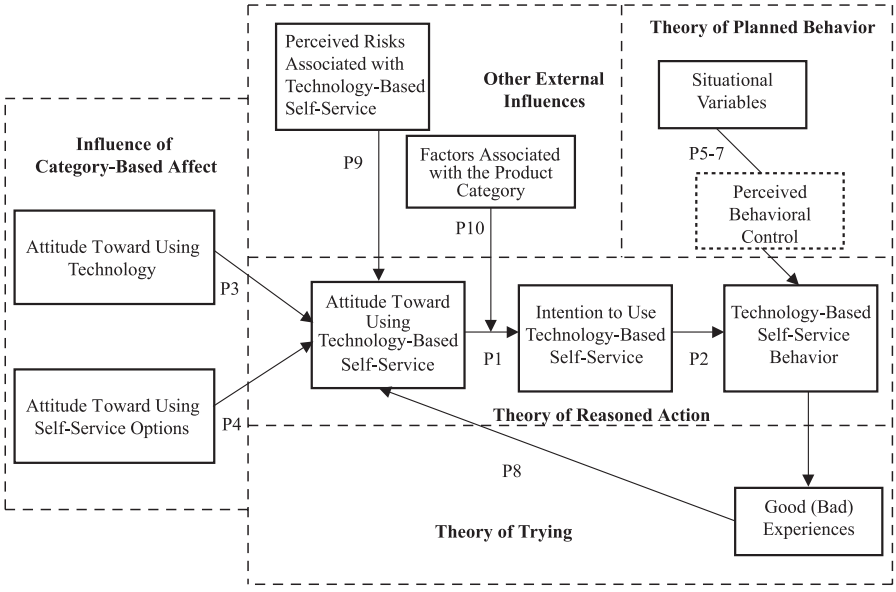

Figure 1.
An integration of attitudinal theories to understand and predict use of technology-based self-service

with less attention given to the characteristics of the individual user. In addition, research on attitudes toward using the Internet is lacking. Moreover, extant research on the Internet does not offer an understanding of technology-based self-service in general. Our objective is to fill the theoretical gaps, not just for Internet research but for all technology-based self-service. Consequently, insights from the model presented in this paper should allow researchers to understand and predict consumer behavior related to all types of technology-based self-service. Each section of the model in Figure 1 is discussed below, separately and fully, drawing on previous research. Testable research propositions specifically for Internet use are developed in each section and summarized below.

Theory of reasoned action

P1. Attitude toward using the Internet for shopping will have a direct, positive effect on intention to shop through the Internet.

P2. Intention to shop through the Internet will have a direct, positive effect on Internet shopping behavior.

Category based affect

P3. Attitude toward using technology in general will have a direct, positive effect on attitude toward using the Internet for shopping.

P4. Attitude toward using direct marketing methods, a specialized form of self-service, will have a direct, positive effect on attitude toward using the Internet for shopping.

Perceived behavioral control

P5. Situational influences related to the Internet will have an indirect effect through perceived behavioral control on whether consumers actually shop on the Internet. Specifically:

(*a*) technical difficulty in accessing the Internet will decrease consumer shopping on the Internet; and

(*b*) the slow loading of information will decrease consumer shopping on the Internet.

P6. Situational influences related to the consumer will have an indirect effect through perceived behavioral control on whether consumers actually shop on the Internet. Specifically:

(*a*) personal inability to access the Internet will decrease consumer shopping on the Internet; and

(*b*) less time available for shopping in general will increase consumer shopping on the Internet.

P7. Situational influences related to traditional retail stores will have an indirect effect through perceived behavioral control on whether consumers actually shop on the Internet. Specifically:

(*a*) the possibility of a crowded retail store will increase consumer shopping on the Internet;

(*b*) the unavailability of other shopping modes will increase consumer shopping on the Internet; and

(*c*) the unavailability of products locally will increase consumer shopping on the Internet.

Theory of trying

P8. The outcomes experienced from pursuing goals related to Internet shopping will have a direct effect on attitude. Specifically:

(*a*) failure in trying to learn to use the Internet for shopping will have an unfavorable effect on attitude;

(*b*) success in trying to learn to use the Internet for shopping will have a favorable effect on attitude;

(*c*) unfavorable outcomes experienced as a result of using the Internet for shopping will have an unfavorable effect on attitude; and

(*d*) favorable outcomes experienced as a result of using the Internet for shopping will have a favorable effect on attitude.

External influences: perceived risks associated with the Internet

P9. (a) Consumers tend to associate higher financial, psychological, performance, and temporal risks with purchasing through the Internet than with shopping in retail stores.

P9. (b) Consumers tend to associate higher psychological and performance risks with acquiring information through the Internet than through other methods.

P9. (c) Perceived risks associated with the Internet will have a direct negative effect on attitude toward using the Internet for purchasing or acquiring information.

External influences: factors associated with the product category

P10. Factors associated with the product category will moderate the effect of attitude toward using the Internet for shopping on intention to shop through the Internet. Specifically:

(*a*) products in high-risk categories (e.g. very expensive, technologically complex, or socially important products) will have a negative moderating effect on the attitude-intention link as relates to purchasing;

(*b*) low consumer experience with a product category will have a negative moderating effect on the attitude-intention link for purchasing;

(*c*) intermediate levels of consumer experience with a product category will have a positive moderating effect on the attitude-intention link for acquiring information;

(*d*) low or high levels of consumer experience with the product category will have a negative moderating effect on the attitude-intention link for acquiring information;

(*e*) products in search categories will have a positive moderating effect on the attitude-intention link for purchasing;

(*f*) products in experience and credence categories will have a negative moderating effect on the attitude-intention link for purchasing;

(*g*) products in experience and credence categories will have a positive moderating effect on the attitude-intention link for acquiring information;

(*h*) product categories with less information available on the Internet than elsewhere will have a negative moderating effect on the attitude-intention link for acquiring information;

(*i*) Product categories with more information available on the Internet than elsewhere will have a positive moderating effect on the attitude-intention link for acquiring information.

Theory of reasoned action

The best-known and widely supported attitudinal theory is the theory of reasoned action proposed by Fishbein and Ajzen (1975). We use this theory as the foundation for our proposed framework. Specifically, we focus on the link between attitude and intention and that between intention and behavior. For the purpose of our framework, we ignore the effect of subjective norms for several reasons. First, the study of subjective norms is not a key issue in a theoretical framework focused on an attitudinal hierarchy for explaining intentions and behaviors. Second, it has been suggested in the literature on attitudinal models that intentions to behave may be formed with minimal influence of subjective norms (Bagozzi, 1981; Dabholkar, 1994b; Warshaw, 1980). Lastly, the role of cross-over effects (Oliver and Bearden, 1985; Shimp and Kavas, 1984) in the theory of reasoned action has researchers questioning the inclusion of subjective norms in attitudinal models, especially where subjective norms are not expected to be as critical as they would be in the case of conspicuous products or important social issues.

A major contribution of the theory of reasoned action is the specificity of attitudes and intentions to match behavior. However, previous research on electronic shopping has focused on attitude toward the channel rather than

attitude toward using the channel. Maher *et al.* (1997) examined women's attitudes toward shopping channels. Similarly, Eastlick (1993) and Korgaonkar and Moschis (1987) researched attitudes toward a videotex shopping system. These studies did not examine consumer attitudes toward using the Internet or other electronic channels for shopping purposes. The problem with this approach is that a consumer may believe that the Internet is beneficial for the advancement of society and, therefore, may have a favorable attitude toward the Internet. However, this does not necessarily translate into shopping behavior by that consumer. Drawing on the specificity approach of the theory of reasoned action, we focus on attitudes toward using the Internet for shopping (cf. Dabholkar, 1996). We believe these specific attitude measures will be better predictors of intentions and behavior related to the Internet than traditional measures. The following propositions correspond to the central box in Figure 1. They are the heart of our model as in most attitudinal models:

P1. Attitude toward using the Internet for shopping will have a direct, positive effect on intention to shop through the Internet.

P2. Intention to shop through the Internet will have a direct, positive effect on Internet shopping behavior.

Influence of category-based affect

Consumers make judgments about new situations, products, or services based on related past attitudes and experiences. Fiske (1982) and Sujan (1985) suggest that past behaviors are associated with category-based affect, i.e. an affective association related to the category of behaviors. They further propose that when a stimulus matches expectations, it triggers this stored category-based affect. Such a generalized attitude has been supported empirically in terms of its influence on situations that are new to consumers, yet similar to their prior experiences (Dabholkar, 1996, 1992; Ledingham, 1984; Dickerson and Gentry, 1983). Two types of category-based affect are relevant in our framework: attitude toward using technology and attitude toward using self-service. Both are shown in the left box in Figure 1 and represent the broad generalized attitudes that influence the more specific attitudes in the central box.

Attitude toward using technology

Many consumers have an uneasy relationship with technology in general which affects how they shop for, buy, and use technology products (Mick and Fournier, 1998). For example, in a recent study on attitudes, 33 percent of consumers surveyed had never used a computer and 32 percent felt intimidated when attempting to use a computer without help (Pavitt, 1997).

Most research in the area of technology has focused on the antecedents of technology adoption, the rate at which technology is adopted, and the actual act of technology adoption (Gatignon and Robertson, 1985). For example, Davis *et al.* (1989) found that attitude is an antecedent to intentions to adopt computer technologies. However, much of the research on the relationship between

attitudes and computer technology has focused on the dependence of attitudes on the specific attributes of computer systems. Researchers have wanted to understand what specific product attributes affect consumers' intentions to purchase computers. In addition, research has focused on various demographic, psychographic, and socioeconomic factors that might affect consumer attitudes toward computers and their adoption of computers (Igbaria and Parasuraman, 1989; McMellon *et al.*, 1997).

Whereas research has been conducted on attitudes toward computers, there has not been sufficient research on attitudes toward using computers (cf. Dabholkar, 1996). Most consumers today have been exposed to technological products such as ATMs, kiosks, and personal computers. They are likely to have formed favorable or unfavorable attitudes about such products irrespective of whether they have actually used the product in question. For example, consumers may have formed attitudes toward using computers based on their observations of others using computers and/or based on their attitudes toward using other technological products. Attitudes toward using technological products in general may provide insight as to why some consumers do (and others do not) adopt computer technology. If consumers do not have favorable attitudes toward using technology in general, they will be less likely to have favorable attitudes toward activities such as Internet shopping. Instead, they will be more likely to use retail shopping alternatives. Consumers are much more likely to adopt a new technology if they have used similar technologies in the past (Dickerson and Gentry, 1983; Korgaonkar and Moschis, 1987) and have formed favorable attitudes toward using these similar technologies (Dabholkar, 1996, 1992). Therefore, it is proposed that:

P3. Attitude toward using technology in general will have a direct, positive effect on attitude toward using the Internet for shopping.

Attitude toward using self-service

Many firms today offer consumers the option of performing transaction-related activities themselves. Such self-service options may or may not involve technology. For example, you can use a touch screen or a scanner, or you can simply fill gas in your car, serve yourself some food from a food bar, or cook your own steak in a trendy restaurant. Self-service can also occur at home, again with or without technology. Consumers can use the Internet or interactive television to buy products, or they can simply use the telephone and place orders by speaking or by pressing numbers. Even though such telephone ordering does literally use sophisticated telephone technology, pressing numbers does not require much technical skill on the consumer's part. Therefore, phone orders can be seen as self-service without technology and not in the same category as the Internet or interactive television.

The question of interest is whether there is a generalized attitude toward self-service irrespective of whether technology is involved or not. If we look at self-service that involves technology, it is difficult to ascertain the consumer's preference for using technology apart from his/her preference for self-service.

In order to get at the heart of what consumers like about self-service, a more rigorous approach is needed, in which self-service that does not involve technology is examined. This would be the salad bar and the cooking-your-own-food type of options in restaurants and would include catalog ordering over the telephone from the home (without interacting with a service provider).

Researchers (e.g. Bettencourt, 1997; Mills and Morris, 1986; Silpakit and Fisk, 1985) have discussed customer participation in service delivery and the factors that drive it. However, customer participation is not equivalent to self-service unless accompanied by low contact with the service provider. Otherwise, it could include cases where both the customer and the provider participate in service production, and in such cases, customer participation would be driven by totally different factors than those that drive self-service.

Langeard *et al.* (1981) and Bateson (1985) surveyed the self-service consumer and found that s/he viewed such options as efficient and offering control. They also found that consumers who avoided self-service saw it as involving too much effort, time, and/or risk. Other researchers (Dabholkar, 1990; Kelley *et al.*, 1990) proposed that consumers who prefer self-service also perceive greater control and higher service quality. Dabholkar (1996) found this to be so, and in addition, found that the need for interaction with a service employee varies greatly among consumers. Similarly, Forman and Ven (1991) found that contact with a retail employee is very important to some consumers. The research therefore suggests many differences in attitude between those who prefer self-service and those who do not. Thus, we can conclude that people do tend to have a generalized attitude toward using self-service.

Direct marketing methods can be viewed as a type of self-service toward which consumers may have generalized attitudes. Although direct marketing includes shopping on the telephone through a service employee, the majority of direct marketing studies have looked at shopping without interaction with employees. Researchers have found that consumers who have positive attitudes toward direct marketing are more likely to buy products from a variety of direct marketing sources (Akaah *et al.*, 1995). However, some marketers have found that many consumers will not purchase products through direct marketing methods. Therefore, much research has been aimed at understanding the differences between consumers who buy through direct marketing efforts and those who do not (Settle *et al.*, 1994; Klassen and Glynn, 1992). This research has focused mainly on identifying demographic factors rather than on examining attitudes. For example, some studies have found that in-home shoppers generally have higher family incomes, higher educational levels, higher occupational levels, and come from a higher social class (Cunningham and Cunningham, 1973; Gillett, 1970). However, there is disagreement over the extent to which these variables influence the use of direct marketing (Darian, 1987; Lumpkin and Hawes, 1985). There may be other factors, such as attitudes, that help explain why some consumers tend to avoid direct marketing methods.

Some researchers have begun to see a link between generalized attitudes and specific attitudes toward direct marketing, even if they have not explicitly set forth such a relationship. For example, Eastlick and Liu (1997) examined how attitudes toward retail formats and existing nonstore alternatives influenced attitudes toward television shopping programs. In general, they found that consumer attitudes toward some shopping formats affect attitudes toward alternative shopping formats. They also speculated that an understanding of existing attitudes toward television shopping might provide a foundation for understanding attitudes toward future interactive shopping environments. Similarly, researchers have found that consumers with positive attitudes toward direct marketing are more likely to look favorably on direct marketing on the Internet (Mehta and Sivadas, 1995). Other studies have shown that consumers who have shopped from their homes in the past are more likely to use on-line shopping (Shim and Mahoney, 1991; Shim and Drake, 1990; Korgaonkar and Moschis, 1987). Therefore, based on the argument for category-based affect that has been previously discussed, if consumers have favorable attitudes toward using direct marketing methods, a specialized form of self-service, they will tend to have favorable attitudes toward using the Internet for shopping.

P4. Attitude toward using direct marketing methods, a specialized form of self-service, will have a direct, positive effect on attitude toward using the Internet for shopping.

Theory of planned behavior

The theory of planned behavior extended the theory of reasoned action by adding perceived behavioral control as a factor that can influence intentions and behaviors (Ajzen, 1991). Perceived behavioral control is defined as "the perceived ease or difficulty of performing the behavior of interest" (Azjen, 1991, p. 183). Research has shown that this aspect is especially relevant for technology. For example, Davis *et al.* (1989) found ease of use to be an important factor in decisions to use computer software. Similarly, Dabholkar (1996) found ease of use and perceived control to be important determinants of consumer evaluations of touch screens used for placing orders.

In the context of Internet shopping, perceived behavioral control refers to how easy or difficult it will be to shop through the Internet. It is related to the consumer's confidence in his/her ability to perform the behavior, and therefore, could be interpreted as a confidence construct (Hoffman and Novak, 1996). For example, if two consumers have equally strong intentions to shop through the Internet, the consumer who has more confidence in his/her ability is more likely to actually shop through the Internet.

Hoffman and Novak (1996) suggest that perceived behavioral control is important in determining consumer usage of "hypermedia computer-mediated environments." In fact, they state that such media, unlike traditional media, can serve as the basis for consumer control due to the interactive environment. Klobas (1995) proposes that perceived behavioral control could be measured by

asking consumers about the potential barriers and costs of using the Internet. For example, does the consumer feel that s/he has the ability as well as the resources to use the Internet for shopping purposes?

Situational influences can affect perceived behavioral control. Therefore, they are highly relevant in a model examining the underlying motivation for technology-based self-service in general and Internet shopping in particular. Belk (1974, p. 157) defines situational influences as "all of those factors particular to a time and place which do not follow from knowledge of personal and stimulus attributes and which have a systematic effect on current behavior". Based on Lewin's (1936) field theory, Gerht *et al.* (1991) suggest that individual traits alone may not explain buyer behavior and that situational factors should also be examined.

There are many situational factors that can have an indirect effect through perceived behavioral control on consumer behavior related to Internet shopping. Specifically, situational factors related to the Internet, situational factors related to the consumer, and situational factors related to traditional retail stores are all relevant for this context. Situational factors can cause consumers to behave in a manner that is inconsistent with their attitudes and their pre-formed intentions, and therefore need special consideration.

Examples of situational factors related to the Internet include technical problems in accessing the Internet and the slow loading of information. If the consumer experiences technical problems in accessing the Internet, s/he is likely to perceive low behavioral control and consequently will be reluctant to shop through the Internet. Similarly, if the consumer is accessing a Web site and the information loads too slowly on the screen, the consumer may not be able to examine the information as quickly as desired. In 1998, it was estimated that consumers spent 2.5 billion hours waiting for information to download (Associated Press, 1999). As a result of having to wait for information, consumers may become frustrated and perceive little control over shopping through the Internet.

Examples of situational factors related to the consumer include a consumer's personal inability to access the Internet and the amount of time available for shopping. Some consumers may not be able to access the Internet because they lack physical access to the Internet, or they lack the confidence to use the Internet. Thus, their perceived behavioral control will be low and would keep them from trying to access the Internet. On the other hand, there are situations in which the consumer would perceive high behavioral control. For example, if the consumer does not have a lot of time available for shopping, s/he is likely to perceive the Internet to be a faster method over traditional shopping methods. In such situations, consumers will perceive high behavioral control over the use of their time.

Situational factors related to traditional retail stores such as crowds, hours of operation, and products available can also influence consumers' decisions to shop through the Internet. There are times, such as during the Christmas selling season, when consumers do not want to shop among the crowds at retail

stores or wait in long lines to get assistance or purchase a product. In such situations, consumers often view the shopping process as very time consuming as well as frustrating. As a result, they may elect to shop through the Internet to avoid some of these shopping tribulations. Similarly, if traditional shopping stores are closed when the consumer has the desire or time to shop, s/he is likely to choose the Internet as a shopping alternative. Finally, some products that consumers want may not be available at local retail stores. The Internet has a significant advantage over many shopping alternatives in that consumers can access sellers and products all over the world. For example, if consumers are interested in antiques or collectibles, they can use the Internet to locate potential sellers.

The preceding examples of situational influences have been discussed within the context of shopping on the Internet in general and include searching for information as well as making purchases. For example, if consumers searching for product information experience difficulty accessing the Internet, they are likely to look for information through other sources (e.g. retail stores) which offer greater behavioral control. However, in a situation where consumers do not have much time to search for information, they may decide that the Internet offers greater control over the quantity and type of information that is examined.

Based on the discussion in this section, we apply the theory of planned behavior to our model of Internet shopping behavior as follows. We propose that situational variables will have a direct effect on perceived behavioral control, which in turn will influence Internet shopping behavior, whether related to information search or purchasing. When situational influences increase perceived behavioral control, consumers are more likely to engage in Internet shopping. On the other hand, if situational influences affect perceived behavioral control adversely, consumers are less likely to engage in the behavior despite favorable attitudes and strong intentions. The following propositions represent the top right box in Figure 1.

P5. Situational influences related to the Internet will have an indirect effect through perceived behavioral control on whether consumers actually shop on the Internet. Specifically:

(*a*) technical difficulty in accessing the Internet will decrease consumer shopping on the Internet; and

(*b*) the slow loading of information will decrease consumer shopping on the Internet.

P6. Situational influences related to the consumer will have an indirect effect through perceived behavioral control on whether consumers actually shop on the Internet. Specifically:

(*a*) personal inability to access the Internet will decrease consumer shopping on the Internet; and

(*b*) less time available for shopping in general will increase consumer shopping on the Internet.

P7. Situational influences related to traditional retail stores will have an indirect effect through perceived behavioral control on whether consumers actually shop on the Internet. Specifically:

(*a*) the possibility of a crowded retail store will increase consumer shopping on the Internet;

(*b*) the unavailability of other shopping modes will increase consumer shopping on the Internet; and

(*c*) the unavailability of products locally will increase consumer shopping on the Internet.

Theory of trying

The theory of trying proposed by Bagozzi and Warshaw (1990) provides insights into how the consequences of a behavior can influence attitudes toward trying to achieve a goal. It expands on the theory of planned behavior (Ajzen, 1991) and the theory of goal pursuit (Warshaw *et al.*, 1991). Bagozzi and Warshaw (1990) suggest that people form complex, multidimensional attitudes toward goals (e.g. learning to use a particular technology) as opposed to forming unidimensional attitudes toward actions (e.g. Ajzen and Fishbein, 1980).

In an application of the theory of trying to the learning of word processing, Bagozzi *et al.* (1992) found that attitudes toward success, failure, and the process are good predictors of intentions to try and trying in this context. This model takes into account that people may try to learn about something, and fail, and as a result fail to experience the outcomes. For example, a consumer may have a favorable attitude toward using the Internet and try to learn how to use the Internet for shopping purposes. If the consumer perceives that it is too difficult to learn or becomes frustrated with the learning process, he/she may give up on trying to learn.

In a study on women's attitudes toward the Internet, Fram and Grady (1997) found that more than half the consumers (55 percent) indicated that they experienced problems in using the Internet for shopping, such as difficulty in finding products, transaction problems, and technical concerns. If the consumer is not successful in using the Internet for shopping due to such problems, the outcomes that arise from actually using the Internet will not be experienced. However, in this case, the outcomes experienced from simply trying to use the Internet may change a previously held favorable attitude toward using the Internet for shopping to an unfavorable attitude. On the other hand, if the consumer is successful in using the Internet for shopping, the outcomes experienced from trying will reinforce a favorable attitude toward using the Internet to shop. In addition, the outcomes experienced from using the Internet may be favorable or unfavorable, and will affect previously held attitudes accordingly.

The theory of trying focuses on goal situations and not just reasoned behaviors as in the theory of reasoned action (Bagozzi and Warshaw, 1990). Consumers generally engage in a behavior, such as using the Internet, for the benefits they hope to receive. In some cases, the behavior may be viewed as a goal and achievement of that goal may allow the consumer to pursue other goals. An example of a goal in using the Internet for shopping would be that the consumer uses the Internet because s/he believes this shopping method will save time over other shopping methods. Thus, they can use that time for activities that may be more important to them than shopping. Some consumers value convenience as a major factor in using direct marketing methods (Gehrt and Carter, 1992; Berkowitz *et al.*, 1979) and may view it as a goal, but others may not (Lincoln and Cunningham, 1987).

Yet another example of a goal might be to become an expert at using the Internet for shopping purposes. This particular goal might be driven by internal or external motivation. Gardner *et al.* (1993) found that as consumers' computer usage increases, their self-confidence related to this behavior increases. Similarly, by becoming more knowledgeable about using the Internet, the consumer's self-confidence in using technology is likely to increase. In addition, the consumer may want to be viewed as knowledgeable by others in terms of using technological products. Whether the consumer is pursuing the goal of trying to learn to use the Internet for shopping or using the Internet for shopping in order to pursue other goals, the outcomes experienced from pursuing goals will directly influence attitudes. The following propositions are represented in the bottom box in Figure 1:

P8. The outcomes experienced from pursuing goals related to Internet shopping will have a direct effect on attitude toward Internet shopping. Specifically:

(*a*) failure in trying to learn to use the Internet for shopping will have an unfavorable effect on attitude;

(*b*) success in trying to learn to use the Internet for shopping will have a favorable effect on attitude;

(*c*) unfavorable outcomes experienced as a result of using the Internet for shopping will have an unfavorable effect on attitude; and

(*d*) favorable outcomes experienced as a result of using the Internet for shopping will have a favorable effect on attitude.

Other external influences

In addition to the theories that have been incorporated into the model (the theory of reasoned action, the theory of planned behavior, and the theory of trying), there are external influences that need to be considered. Specifically, these influences include direct and moderating variables that influence attitudes and/or behaviors related to technology-based self-service. We have already examined the influence of category-based affect in our model. In this

section, we look at two other sets of external influences. Perceived risk associated with technology-based self-service is examined as having a direct influence on attitude toward using such service options. Factors associated with the product category are examined in terms of their moderating influence on the attitude-intention relationship. Both sets of influences are captured in the top central box in Figure 1.

Direct influences

There are three main direct influences on attitudes toward using technology-based self-service. Two of these, attitude toward using technology and attitude toward using self-service, have been discussed earlier under category-based affect. The third direct influence, i.e. perceived risks associated with technology-based self-service, is the subject of this section.

Consumers associate different types and levels of risk with traditional and nontraditional shopping methods. It has been shown in previous research that the level of social, performance, physical, financial, and psychological risks varies with the shopping mode (Gillett, 1976). For example, research has indicated that buying by phone or mail is considered more risky than buying in retail stores (Spence *et al.*, 1970; Cox and Rich, 1964). Similarly, consumers may perceive technology-based self-service as more risky than traditional forms of service due to the risks associated with some of these options, in particular with the Internet.

We propose that some types of risk, such as financial, psychological, and performance risks are more applicable to shopping through the Internet than through other nontraditional or traditional shopping methods. In terms of financial risk, there are several factors that influence the degree to which consumers associate this risk with the Internet. First, consumers may fear that the company that they "know" only through the Internet may misuse their credit cards. Consumers often have to provide credit card information to get the low prices available on the Internet. At the other extreme, consumers are often tempted to bid for products on auction sites, and again, must pay for these with credit cards. With some companies and/or auction sites, sellers may collect money for a product without ever sending the product to the buyer.

Second, consumers may trust companies selling products on the Internet, but may be concerned that their credit card information will fall into the wrong hands and be used by others to make purchases for which they would be held liable. Third, consumers may associate a certain degree of financial risk with the Internet if they are unsure of sellers' refund policies. On some Web pages, this information may not be readily noticeable or even specified. In such cases, the consumer may fear that they may not get their money back if they are dissatisfied with the product. Finally, there is the possibility that consumers will be charged incorrectly for their purchases, possibly through an error. If the Web site does not provide a confirmation of the customer's order including the amount charged, the customer may not know they were charged incorrectly until s/he gets a credit card bill.

Another security risk pertains to the capturing of personal information by Web sites. When a consumer visits a web site, information is recorded about that consumer's visit regardless of whether they make a purchase (Baig *et al.*, 1999). This may be more information than consumers want companies and other interested parties to know. In many cases, the consumer does not have control over this practice and may experience a certain degree of stress as a result. Thus, consumers are likely to perceive psychological risk to be associated with the Internet.

Another type of psychological risk arises from the fact that the consumer generally does not know and is not provided with information regarding which Web sites are trustworthy. In a study on consumer perceptions of Internet catalog shopping versus print catalog shopping (Jones and Vijayasarathy, 1998), consumers indicated that they questioned the legitimacy of some Internet businesses. Thus, there is a certain degree of psychological risk associated with not knowing the entity from which you are buying.

Consumers may also associate a certain degree of performance risk with the Internet. For example, they may wonder how the Internet will perform in providing the information needed to allow them to make sound purchasing decisions. In some situations, consumers may perceive that the Internet does not provide enough information to make decisions. For example, consumers may be less able to compare prices of alternative options and may be unsure whether they are getting the best price on the Internet. In response, some Web sites are beginning to allow price comparisons by linking to other similar sites. Also, some consumers may believe that the Internet does not provide the type of information that can be obtained in a retail environment where salespeople can assist the customer. They may prefer to interact with employees who can provide advice and recommendations to reduce their perceived risk. In response to this need, some companies are starting to provide on-line help (e.g. People Support Live On-Line) to assist consumers in making purchasing decisions.

In other situations, the Internet may be perceived as providing too much product information. Consumers may be overwhelmed with the sheer amount of information available and may not want to invest the time necessary to sort through the information to find what is relevant to their purchase situation. At the same time, they may fear that something (e.g. the best deal) will be missed if all potential Web sites are not examined. As consumers search for information on specific products or engage in comparison shopping on the Internet, they may spend more time due to the vast amount of information available than they would in a traditional retail environment. Thus, performance risk may be coupled with temporal risk in this case.

Performance risk is also associated with purchasing on the Internet. For example, a consumer may actually purchase a product through the Internet, but may not receive the product or be charged for it. This could be due to a technical problem caused by the Internet itself or by the company's software or

personnel. The fact that the Internet may not perform as it should in purchase situations creates yet another source of performance risk for the consumer.

One of the benefits often associated with performing certain activities on the Internet (e.g. shopping) is that consumers can save time. However, there is also a degree of temporal risk associated with using the Internet. One instance of temporal risk relates to an overabundance of available information on the Internet, as discussed above. Another aspect of temporal risk is download time. For example, we mentioned earlier that consumers spend a great deal of time waiting for information to download from the Internet (Associated Press, 1999). Even though technology continues to advance and Internet connections have become faster, not all consumers have access to high speed data lines, such as an integrated services digital network (ISDN) or a cable line. Thus, some consumers may view using the Internet for shopping purposes as too time-consuming.

A third way that temporal risk is manifested is in the amount of time associated with receiving products purchased through the Internet that is not generally associated with purchases made through retail stores. Some consumers may prefer to receive their products immediately (at the time of purchase) rather than wait for them. To reduce this perceived risk, many companies that offer their products through the Internet are using companies such as FedEx that provide relatively prompt delivery. Also, in some cases, the consumer has the option of paying for faster delivery to reduce the amount of time involved. In addition, consumers may be able to check the Web site several times to verify the progress of their order, which may reduce temporal as well as psychological risks. An added temporal risk arises from the situation where consumers purchase a product they are unsure about. First, it may take a long time for the product to be delivered, then if the customer is dissatisfied, s/he has to face the time-consuming process of returning the product and shopping for it again.

These financial, psychological, performance, and temporal risks associated with the Internet will directly influence consumer attitudes toward using this technology-based self-service. Attitude research on direct marketing predicts that consumers will have different attitudes toward various forms of direct marketing due to differences in perceived risks (Akaah *et al.*, 1995). A consumer who associates a high level of risk with the Internet is likely to have an unfavorable attitude towards using the Internet as a shopping alternative. As a result, the consumer will not form strong intentions to shop through the Internet and will be less likely to engage in the actual behavior. In fact, consumers have often cited security issues as a primary reason for not using the Internet to purchase products (Pavitt, 1997). However, consumers may perceive some Internet behaviors to be more risky than others. They may not associate financial risk with using the Internet to learn about products, yet may associate high levels of financial risk with purchasing products through the Internet. For example, many consumers are not using the Internet for purchasing, but rather as an information source. In a recent American Internet User survey by Cyber Dialogue, 36 percent of consumers who looked for

information on the Web went to a local store to actually make the purchase (*Direct Marketing*, 1998). Based on the above discussion, we propose the following:

P9(a). Consumers tend to associate higher financial, psychological, performance, and temporal risks with purchasing through the Internet than with shopping in retail stores.

P9(b). Consumers tend to associate higher psychological and performance risks with acquiring information through the Internet than through other methods.

P9(c). Perceived risks associated with the Internet will have a direct negative effect on attitude toward using the Internet for purchasing or acquiring information.

Moderating influences

Many researchers (Klein and Yadav, 1989; Ajzen *et al*., 1982) have observed that traditional attitudinal research mainly incorporates direct effects of external variables and that the effect of moderating variables has received little attention. These researchers strongly recommend that future attitudinal research incorporate the effect of moderating variables to offer a more complete view of the phenomena under study.

Whether a technology-based self-service option is deemed appropriate by a consumer may depend on the product category. For example, consumers may be comfortable using touch screens for banking, but not for making financial investments. Or, they may use interactive television for hotel check-out, but not for shopping. Similarly, how suitable the Internet is perceived to be as a shopping alternative may depend on the characteristics of the product being sought. There are many factors associated with the product category that may have a moderating effect on the relationship between attitude toward using the Internet and intention to use the Internet for shopping.

One such factor is the perceived risk that may be associated with the product category. Consumers may associate different types of risk such as performance, social, and financial risk with a given product category. Fram and Grady (1997) found that consumers were not very interested in buying those products through the Internet with which they associated a higher degree of purchasing risk. Given that they cannot touch, examine, or try products on a computer screen as they can in a retail store, consumers may not want to take the risks involved in buying through the Internet products that are very expensive (high financial risk), technically complex (high performance risk), or reflect their social image (high social risk). However, as discussed earlier, consumers may use the Internet to search for information on these product categories.

Another moderating factor is lack of experience with a product category. Consumers who do not have experience with a particular product may be uncomfortable purchasing that product through the Internet. In fact, consumers are more likely to do their "functional" shopping on-line by

purchasing "unglamorous" staples (Pavitt, 1997). Research has indicated that the products most commonly purchased through the Internet include software, books, and music. Not only are these products that involve little risk in terms of defects, fragility, and style, fabric, and color differences (Fram and Grady, 1997), they are products where consumers have higher levels of experience through using in-store self-service or catalog buying.

Even though consumers may not be comfortable purchasing products they do not have experience with through the Internet, they may be very comfortable with using the Internet to search for information on these products. Johnson and Russo (1984) proposed that there may be an inverted U-shaped relationship between consumer experience and the amount of time spent in the search process, and empirical evidence has supported that such a relationship exists (Moorthy *et al.*, 1997; Alba and Hutchinson, 1987). The model developed and tested by Moorthy *et al.* (1997) proposes that a consumer who has an intermediate level of experience will have a greater incentive to search for information. A consumer with this level of experience is likely to perceive differences among brands and is uncertain as to which brand is best; thus, an extended search for information is necessary to make a decision. Consumers with little experience will have little incentive to search because they are likely to perceive the product category to be homogeneous. Similarly, consumers with considerable experience will have little incentive to search because they have relatively little uncertainty about the brands being considered. Therefore, consumers are most likely to use the Internet to search for information on products for which they have a moderate level of experience.

Yet another moderating factor relates to product classification. Nelson (1970) developed a categorization of goods into search and experience goods. Search goods are characterized as those goods for which complete information on the dominant attributes is available before purchase and can be evaluated by the consumer. Therefore, the Internet may serve as an effective shopping alternative for search products, such as computers or airline tickets. On the other hand, experience goods (or services) are difficult for the consumer to evaluate without experiencing the product. For experience products, such as restaurants, consumers can use the Internet as a preliminary source of information and then visit the site to actually experience the product. Traditional "experience" type of products, such as real estate, are creating an increasing presence on the Web, and may offer "virtual tours" of homes, so that consumers can at least partially experience the product before actually visiting the home for sale. Such strategies are changing some experience products into search products (Klein, 1998).

A third category in this classification, extended by Darby and Karni (1973), is credence products, which are difficult to evaluate even after they have been experienced. For example, consumers who receive medical treatments or have auto repair work performed often cannot evaluate these services due to lack of knowledge and experience in these areas. Therefore, consumers are likely to be extremely wary of purchasing such products through the Internet, although they

may be open to searching for information on the Internet in an effort to learn more about these complex products. For example, consumers increasingly search the Internet for health-related information, including information on chronic illnesses and complex surgeries (AOL Health News, 2001).

Finally, some product categories may have too little information available on the Internet, although they are "search" type products (e.g. bank account options), whereas other product categories may have advanced levels of information on the Internet although they are "experience" type products (e.g. travel). In these cases, the level of information available on a product category will moderate the attitude-intention link. Less information will have a negative moderating effect and greater information will have a positive moderating effect on the attitude-intention link for that product category.

It is important to understand how factors related to the product category can influence the link between consumers' attitudes toward using the Internet and intentions to shop through the Internet. In some cases, even if consumers have very favorable attitudes toward using the Internet for shopping or for acquiring information, their intentions will be modified due to the factors discussed. In these cases, factors associated with the product category will attenuate the attitude-intention link. In other cases, the attitude-intention link would actually be strengthened due to some product category factors. This would be true for consumers using the Internet for shopping, or for acquiring information:

P10. Factors associated with the product category will moderate the effect of attitude toward using the Internet for shopping on intention to shop through the Internet. Specifically:

(*a*) products in high-risk categories (e.g. very expensive, technologically complex, or socially important products) will have a negative moderating effect on the attitude-intention link as relates to purchasing;

(*b*) low consumer experience with a product category will have a negative moderating effect on the attitude-intention link for purchasing;

(*c*) intermediate levels of consumer experience with a product category will have a positive moderating effect on the attitude-intention link for acquiring information;

(*d*) low or high levels of consumer experience with the product category will have a negative moderating effect on the attitude-intention link for acquiring information;

(*e*) products in search categories will have a positive moderating effect on the attitude-intention link for purchasing;

(*f*) products in experience and credence categories will have a negative moderating effect on the attitude-intention link for purchasing;

(*g*) products in experience and credence categories will have a positive moderating effect on the attitude-intention link for acquiring information;

(*h*) product categories with less information available on the Internet than elsewhere will have a negative moderating effect on the attitude-intention link for acquiring information;

(*i*) product categories with more information available on the Internet than elsewhere will have a positive moderating effect on the attitude-intention link for acquiring information.

Discussion

Consumer attitudes toward using technology and toward using self-service are rapidly changing all over the world. In addition, there is vast potential for marketers to offer technology-based self-service options in a variety of contexts. These trends make it critical to study attitudes and behaviors related to technology-based self-service; to probe and try to understand why consumers engage in the behaviors they do. Researchers have made a good start by studying factors related to technology-based self-service. Others have examined individual consumer characteristics that favor acceptance of new forms of technology-based self-service. Some researchers have studied attitudes toward various types of technology-based self-service and the effect of these attitudes on behavioral intentions. Despite these in-roads, however, a broad, integrative, theoretical framework, that would form the basis for future systematic study of all technology-based self-service, is lacking.

This paper proposes a comprehensive conceptual framework that integrates several well-known attitudinal theories to provide a better understanding of consumer motivation and behavior related to technology-based self-service. The Internet has been used as an example of a technology-based self-service in order to provide a richer understanding of the general technology-based self-service model. Implications based on our framework are provided for both practitioners and researchers, and relate specifically to the Internet as well as to technology-based self-service in general.

Implications for practitioners

As technology continues to advance, and as companies are provided with more opportunities to offer self-service options to consumers, marketers need to be aware of what affects consumers' attitudes and behaviors in relation to technology-based self-service. First, marketers should identify if their consumers have unfavorable attitudes towards using technology and/or self-service. These generalized attitudes can have an effect on consumer attitudes towards using a specific technology-based self service, such as electronic banking. If consumers do possess unfavorable attitudes in these areas, marketers should attempt to understand what has caused consumers to have these attitudes. Appropriate measures should be taken to try to improve these

attitudes after determining if they are based on actual experience or simply on perceptions of different technologies and self-service options.

Second, our model suggests that marketers would benefit by determining the perceived risks associated with a particular technology-based self-service, especifically financial, psychological, performance, and temporal risks. We propose that even if consumers have favorable attitudes towards using technology and toward using self-service, they may not engage in a behavior such as Internet shopping because of the perceived risks associated specifically with the Internet. This may be a major factor in explaining why many consumers have unfavorable attitudes toward Internet shopping. It is imperative that marketers study and understand such specific risks related to different types of technology-based self-service, and the Internet in particular.

At the same time, some of the risks associated with new forms of technology-based self-service may simply dissipate over time as consumers become more experienced with these service options or more familiar with them through marketing efforts and word-of-mouth communication. Many technological products (e.g. ATMs, cell phones) do not have some of the risks associated with them now as they did when they were first introduced to the market. Therefore, marketers should use promotional tools to communicate to consumers the measures that have been taken to reduce the risks associated with any new technology-based self-service (including the Internet), in addition to promoting the benefits as they typically do. As consumers begin to perceive that risks are minimized or even eliminated, our model suggests that their attitudes will become more favorable toward using that technology-based self-service option.

Third, our modeling of moderating influences also has implications for practitioners. Marketers need to consider how the amount and type of information available through a technology-based self-service option can affect consumer intentions despite preexisting attitudes toward using the technology-based self-service. In the case of the Internet, if consumers perceive other shopping alternatives to provide more relevant information on a product, our model suggests that they will be less likely to shop through the Internet, despite favorable attitudes. Providing sufficient information is especially critical for "search" products where consumers can easily evaluate available information, and make purchases on the Internet. As for "experience" products, if marketers can be innovative in providing information that enables the consumer to evaluate the product (e.g. by downloading music, or by viewing 3-D lodging options), they may be able to turn these experience products into search products (Klein, 1998). In this case, the Internet has an advantage over other forms of technology-based self-service, such as interactive television or in-store touch screens, by being able to provide information in such unique formats. Finally, consumers have a natural proclivity to gain further information on "credence" products to reduce their own uncertainty about these products, and marketers who provide such information on the Internet are taking a long-term perspective to building ties with these consumers.

Fourth, while marketers cannot always control situational factors that may influence the use of technology-based self-service, our model suggests that they attempt to locate potential situational factors of concern. If there are some common situational factors identified by consumers, marketers can offer suggestions through promotion as to how consumers can overcome such factors. For example, if it is difficult for consumers to access the Internet, it might be recommended that they attempt to shop during non-peak times. Such suggestions are likely to increase perceived behavioral control, and according to our framework, make consumers more willing to use the technology-based self-service in question.

Finally, marketers need to ensure that consumers do not become frustrated in attempting to use their technology-based self-service. Our framework points out the importance of identifying consumer goals and expectations related to technology-based self-service, and of taking measures to ensure that they are met. For example, if consumers expect grocery self-scanning to be relatively simple and they experience problems while scanning their grocery items, they may become frustrated and perceive that this method is too difficult for them. According to our framework, such experiences will negatively influence their attitudes and behaviors related to using this service option in the future. In this particular case, marketers would need to design scanning equipment that is as easy to use as consumers expect it to be. In a parallel case with the Internet, marketers should focus on building user friendly Web sites, with easy navigation and minimum download time for any linked sites or promotions.

Implications for researchers

The model proposed in this paper is aimed at providing a starting point for future empirical research on all types of technology-based self-service, including the Internet. To begin with, the focus on attitudes toward using a technology-based self-service rather than a traditional attitude model will allow for better prediction of consumer behavior related to the use of a specific technology-based self-service. In addition, by considering relevant generalized attitudes, such as attitude toward using technology and attitude toward using self-service, the model will allow researchers to capture underlying motivations more fully. Depending on the type of technology-based self-service being examined (e.g. shopping through interactive television), a special case of a generalized attitude (e.g. attitude toward using direct marketing) may need to be identified and measured.

Our framework incorporates direct variables that may affect attitudes as well as moderating variables that may influence the attitude-intention link. Researchers can measure all the different types of perceived risks associated with a technology-based self-service and determine their direct effects on attitudes. Further, they can compare how different types of risks are relevant for different types of technology-based self-service. They can also study if some risks dissipate over time. Similarly, future research can examine factors associated with the product category in terms of moderating effects on the

attitude-intention link for any technology-based self-service. In addition, researchers could investigate whether those factors that weaken the attitude-intention link (e.g. low consumer experience) can be corrected by marketers (e.g. through free and/or coached consumer trial of that particular technology-based self-service). Further, comparisons for moderating effects could be made for search versus experience products, or for low versus high consumer experience with the product category.

Future research may be designed to test the influence of situational factors in a number of ways. Studies could test situational factors proposed in the paper as relevant for the Internet. Researchers could also identify situational factors relevant for other technology-based self-service and study their effect on perceived behavioral control and how they indirectly influence the use of that particular technology-based self-service. In addition, comparisons could be made to test whether situational factors related to the Internet are more relevant to behavioral outcomes than situational factors related to the consumer or to traditional retail stores. Another research issue is whether situational factors can be anticipated and controlled by managers so that their negative influence is minimized. For instance, research could determine whether waiting lines for airline ticketing machines can be minimized through the availability of a certain number of machines, or through their specific location, or through promoting their use at off-peak times.

Our model also has several implications for research on direct marketing in general. Although studies have been done on consumer attitudes towards direct marketing methods such as catalog shopping, direct mail, and direct-response television shopping, future research can focus on attitudes towards using these methods for better prediction of behavior. The influence of category-based affect can be incorporated as in the case of Internet shopping to understand underlying consumer motivation for using other direct marketing methods. Risks, product category factors, and situational factors can be identified for each type of direct marketing method to further increase understanding of consumer motivation and behavior.

Finally, our conceptual framework advances attitudinal research in two ways. First, we demonstrate how attitudinal theories proposed by several leading researchers can be integrated into one model so that the understanding and prediction of the behavior in question is far more comprehensively grounded than by using any one theory. Second, our model makes contributions to the individual theories incorporated therein. It extends the theory of reasoned action, the theory of planned behavior, and the theory of trying to the technology-based self-service context, and further, indicates how these attitudinal theories can be applied to different service contexts in the future.

References

Ajzen, I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, Vol. 50, pp. 179-211.

Ajzen, I. and Fishbein, M. (1980), *Understanding Attitudes and Predicting Social Behavior*, Prentice-Hall, Englewood Cliffs, NJ.

Ajzen, I., Timko, C. and White, J.B. (1982), "Self-monitoring and the attitude-behavior relation", *Journal of Personality and Social Psychology*, Vol. 42 No. 3, pp. 426-35.

Akaah, I.P., Korgaonkar, P.K. and Lund, D. (1995), "Direct marketing attitudes", *Journal of Business Research*, Vol. 34, pp. 211-9.

Alba, J.W. and Hutchison, W. (1987), "Dimensions of consumer expertise", *Journal of Consumer Research*, Vol. 13, pp. 411-54.

AOL Health News (August 23, 2001), "Internet seen as giving cancer patients more choices", August 13, Reuters Limited.

Associated Press (1999), (online) October 11. Available: www.internetindicators.com.

Bagozzi, R.P. (1981) "Attitudes, intentions, and behavior: a test of some key hypotheses", *Journal of Personality and Social Psychology*, Vol. 41, pp. 607-26.

Bagozzi, R.P. and Warshaw, P.R. (1990), "Trying to consume", *Journal of Consumer Research*, Vol. 17, pp. 127-40.

Bagozzi, R.P., Davis, F.D. and Warshaw, P.R. (1992), "Development and test of a theory of technological learning and usage", *Human Relations*, Vol. 45, pp. 659-86.

Baig, E.C., Stepanek, M. and Gross, N. (1999), "Privacy: the Internet wants your personal info. what's in it for you?", *Business Week, Special Report*, April 5, pp. 84-90.

Bateson, J.E.G. (1985), "Self-service consumer: an exploratory study", *Journal of Retailing*, Vol. 61 No. 3, pp. 49-76.

Belk, R.W. (1974), "An exploratory assessment of situational effects in buyer behavior", *Journal of Marketing Research*, Vol. 11, pp. 156-63.

Berkowitz, E.N., Walton, J.R. and Walker, O.C. (1979), "In-home shoppers: the market for innovative distribution systems", *Journal of Retailing*, Vol. 55, pp. 15-33.

Bettencourt, L.A. (1997), "Customer voluntary performance: customers as partners in service delivery", *Journal of Retailing*, Vol. 73 No. 3, pp. 383-406.

Bonn, M.A., Furr, H.L. and Susskind, A.M. (1999), "Predicting a behavioral profile for pleasure travelers on the basis of Internet use segmentation", *Journal of Travel Research*, Vol. 37, pp. 333-40.

Cox, D.F. and Rich, S.J. (1964), "Perceived risk and consumer decision-making", *Journal of Marketing Research*, Vol. 1, pp. 32-9.

Cunningham, I.C.M. and Cunningham, W.H. (1973), "The urban in-home shopper: socioeconomic and attitudinal characteristics", *Journal of Retailing*, Vol. 49, pp. 42-50.

Dabholkar, P.A. (1990), "How to improve perceived service quality by increasing customer participation", in Dunlap, B.J. (Ed.), *Developments in Marketing Science*, Vol. XIII, Academy of Marketing Science, Cullowhee, NC, pp. 483-7.

Dabholkar, P.A. (1992), "The role of prior behavior and category-based affect in on-site service encounters", in Sherry, J.F. and Sternthal, B. (Eds), *Diversity in Consumer Behavior*, Association for Consumer Research, Provo, UT, Vol. XIX, pp. 563-9.

Dabholkar, P.A. (1994a), "Technology-based service delivery: a classification scheme for developing marketing strategies", in Swartz, T.A., Bowen, D.E. and Brown, S.W. (Eds), *Advances in Services Marketing and Management*, JAI Press Inc., Greenwich, CT, Vol. 3, pp. 241-71.

Dabholkar, P.A. (1994b), "Incorporating choice into an attitudinal framework: analyzing models of mental comparison processes", *Journal of Consumer Research*, Vol. 21, pp. 100-18.

Dabholkar, P.A. (1996), "Consumer evaluations of new technology-based self-service options: an investigation of alternative models of service quality", *International Journal of Research in Marketing*, Vol. 13 No. 1, pp. 29-51.

Dabholkar, P.A. (2000), "Technology in service delivery: implications for self-service and service support", in Swartz, TA. and Iacobucci, D. (Eds), *Handbook of Services Marketing and Management*, Sage Publications, Beverly Hills, CA, pp. 103-10.

Darby, M.R. and Karni, E. (1973), "Free competition and the optimal amount of fraud", *Journal of Law and Economics*, Vol. 16, pp. 67-86.

Darian, J.C. (1987), "In-home shopping: are there consumer segments?", *Journal of Retailing*, Vol. 63, pp. 163-70.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989), "User acceptance of computer technology: a comparison of two theoretical models", *Management Science*, Vol. 35 No. 8, pp. 982-1003.

Dickerson, M.D. and Gentry, J.W. (1983), "Characteristics of adopters and non-adopters of home computers", *Journal of Consumer Research*, Vol. 10, pp. 225-35.

Direct Marketing (1998), "Online shopping gaining on stores and catalogs", *Direct Marketing*, Vol. 12, p. 12.

Eastlick, M.A. (1993), "Predictors of videotex adoption", *Journal of Direct Marketing*, Vol. 7 No. 3, pp. 66-74.

Eastlick, M.A. and Liu, M. (1997), "The influence of store attitudes and other nonstore shopping patterns on patronage of television shopping programs", *Journal of Direct Marketing*, Vol. 11 No. 3, pp. 14-24.

Evans, K. and Brown, S.W. (1988), "Strategic options for service delivery systems", in Ingene, C.A. and Frazier, G.L. (Eds), *Proceedings of the AMA Summer Educational Conference*, American Marketing Association, Chicago, IL, pp. 202-12.

Fishbein, M. and Ajzen, I. (1975), *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*, Addison Wesley Publishing, Reading, MA.

Fiske, S.T. (1982), in Hastorf, A.H. and Isen, A.H. (Eds), *Schema-Triggered Affect in Cognitive Social Psychology*, Elsevier, New York, NY, pp. 55-78.

Forman, A.M. and Ven, S. (1991), "The depersonalization of retailing: its impact on the 'lonely' consumer", *Journal of Retailing*, Vol. 67 No. 2, pp. 226-43.

Fram, E.H. and Grady, D.B. (1997), "Internet shoppers: is there a surfer gender gap?", *Direct Marketing*, Vol. 59, pp. 46-50.

Gardner, D.G., Dukes, R.L. and Discenza, R. (1993), "Computer use, self-confidence, and attitudes: a causal analysis", *Computers in Human Behavior*, Vol. 9 No. 4, pp. 427-40.

Gatignon, H. and Robertson, T.S. (1985), "A propositional inventory for new diffusion research", *Journal of Consumer Research*, Vol. 11, pp. 849-67.

Gehrt, K. and Carter, K. (1992), "An exploratory assessment of catalog shopping orientations", *Journal of Direct Marketing*, Vol. 6 No. 1, pp. 29-39.

Gehrt, K.C., Ingram, T.N. and Howe, V. (1991), "Nonstore versus store retailing: a situationally based market structure assessment", *Journal of Direct Marketing*, Vol. 5, pp. 44-53.

Gillett, P.L. (1970), "A profile of urban in-home shoppers", *Journal of Marketing*, Vol. 34, pp. 40-5.

Gillett, P.L. (1976), "In-home shoppers – an overview", *Journal of Marketing*, Vol. 40, pp. 81-8.

Global Sight Corporation (2001) (online), May. Available: www.internetindicators.com.

Helgeson, J., Kluge, A., Mager, J. and Taylor, C. (1984), "Trends in consumer behavior literature: a content analysis", *Journal of Consumer Research*, Vol. 10, pp. 449-54.

Hoffman, D.L. and Novak, T.P. (1996), "Marketing in hypermedia computer-mediated environments: conceptual foundations", *Journal of Marketing*, Vol. 60, pp. 50-68.

Igbaria, M. and Parasuraman, S. (1989), "A path analytic study of individual characteristics, computer anxiety and attitudes towards microcomputers", *Journal of Management*, Vol. 15 No. 3, pp. 373-55.

Johnson, E.J. and Russo, J.E. (1984), "Product familiarity and learning new information", *Journal of Consumer Research*, Vol. 11, pp. 542-50.

Jones, J.M. and Vijayasarathy, L.R. (1998), "Internet consumer catalog shopping: findings from an exploratory study and directions for future research", *Internet Research: Electronic Networking Applications and Policy*, Vol. 8 No. 4. pp. 322-30.

Kelley, S.W., Donnelly Jr, J.H. and Skinner, S.J. (1990), "Customer participation in service production and delivery", *Journal of Retailing*, Vol. 66 No. 3, pp. 315-35.

Klassen, M.L. and Glynn, K.A. (1992), "Catalog loyalty: variables that discriminate between repeat and nonrepeat customers", *Journal of Direct Marketing*, Vol. 6 No. 3, pp. 60-7.

Klein, L.R. (1998), "Evaluating the potential of interactive media through a new lens: search versus experience goods", *Journal of Business Research*, Vol. 41, pp. 195-203.

Klein, N.M. and Yadav, M.S. (1989), "Context effects on effort and accuracy in choice: an inquiry into adaptive decision-making", *Journal of Consumer Research*, Vol. 15, pp. 411-21.

Klobas, J.E. (1995), "Beyond information quality: fitness for purpose and electronic information resource use", *Journal of Information Science*, Vol. 21 No. 2, pp. 95-114.

Korgaonkar, P. and Moschis, G.P. (1987), "Consumer adoption of videotex services", *Journal of Direct Marketing*, Vol. 1 No. 4, pp. 63-71.

Langeard, E., Bateson, J.E.G., Lovelock, C.H. and Eiglier, P. (1981), *Marketing of Services: New Insights From Consumers and Managers*, Marketing Science Institute, Cambridge, MA, Report No. 81-104.

Ledingham, J.A. (1984), "Are consumers ready for the information age?", *Journal of Advertising Research*, Vol. 24 No. 4, pp. 31-7.

Lewin, K. (1936), *Principles of Topological Psychology*, McGraw-Hill, New York, NY.

Lincoln, J.E. and Cunningham, I. (1987), "A profile of direct marketing television shoppers", *Journal of Direct Marketing*, Vol. 1 No. 4, pp. 12-23.

Lumpkin, J.R. and Hawes, J. M. (1985), "Retailing without stores: an examination of catalog shoppers", *Journal of Business Research*, Vol. 13, pp. 197-208.

McMellon, C.A., Schiffman, L.G. and Sherman, E. (1997), "Consuming cyberseniors: some personal and situational characteristics that influence their on-line behavior", *Advances in Consumer Research*, Vol. 24, pp. 517-21.

Maher, J.K., Marks, L.J. and Grimm, P.E. (1997), "Overload, pressure, and convenience: testing a conceptual model of factors influencing women's attitudes toward, and use of, shopping channels", *Advances in Consumer Research*, Vol. 24, pp. 490-8.

Mehta, R. and Sivadas, E. (1995), "Direct marketing on the Internet: an empirical assessment of consumer attitudes", *Journal of Direct Marketing*, Vol. 9 No. 3, pp. 21-32.

Meuter, M.L., Ostrom, A.L., Roundtree, R.I. and Bitner, M.J. (2000), "Self-service technologies: understanding customer satisfaction with technology-based service encounters", *Journal of Marketing*, Vol. 64 No. 3, pp. 50-64.

Mick, D.G. and Fournier, S. (1998), "Paradoxes of technology: consumer cognizance, emotions, and coping strategies", *Journal of Consumer Research*, Vol. 25 No. 2, pp. 123-43.

Mills, P.K. and Morris, J.H. (1986), "Clients as 'partial' employees of service organizations: role development in client participation", *Academy of Management Review*, Vol. 11 No. 4, pp. 726-35.

Moorthy, S., Ratchford, B.T. and Talukdar, D. (1997), "Consumer information search revisited: theory and empirical analysis", *Journal of Consumer Research*, Vol. 23, pp. 263-77.

Nelson, P.J. (1970), "Information and consumer behavior", *Journal of Political Economy*, Vol. 78 No. 2, pp. 311-29.

NUA (2001) (online), May. Available: www.internetindicators.com.

Oliver, R.L. and Bearden, W.O. (1985), "Crossover effects in the theory of reasoned action: a moderating influence attempt", *Journal of Consumer Research*, Vol. 12, pp. 324-40.

Pavitt, D. (1997), "Retailing and the super high street: the future of the electronic home shopping industry", *International Journal of Retail & Distribution Management*, Vol. 38.

Prendergast, G.P. and Marr, N.E. (1994), "Disenchantment discontinuance in the diffusion of technologies in the service industry: a case study in retail banking", *Journal of International Consumer Marketing*, Vol. 7 No. 2, pp. 25-40.

Settle, R.B., Alreck, P.L. and McCorkle, D.E. (1994), "Consumer perceptions of mail/phone order shopping media", *Journal of Direct Marketing*, Vol. 8 No. 3, pp. 30-45.

Shim, S. and Drake, M. (1990), "Consumer intention to utilize electronic shopping", *Journal of Direct Marketing*, Vol. 4 No. 3, pp. 22-33.

Shim, S. and Mahoney, M.Y. (1991), "Electronic shoppers and nonshoppers among videotex users", *Journal of Direct Marketing*, Vol. 5 No. 3, pp. 29-38.

Shimp, T.A. and Kavas, A. (1984), "The theory of reasoned action applied to coupon usage", *Journal of Consumer Research*, Vol. 11, pp. 795-809.

Silpakit, P. and Fisk, R.P. (1985), "'Participatizing' the service encounter: a theoretical framework", in Bloch, T.M., Upah, G.D. and Zeithaml, V.A. (Eds), *Services Marketing in Changing Environment*, American Marketing Association, Chicago, IL pp. 117-21.

Spence, H.E., Engle, J.F. and Blackwell, R.D. (1970), "Perceived risk in mail order and retail store buying", *Journal of Marketing Research*, Vol. 7, pp. 364-9.

Stevens, R.E., Warren, W.E. and Martin, R.T. (1989), "Nonadopters of automatic teller machines", *ABER*, Vol. 20 No. 3, pp. 55-63.

Sujan, M. (1985), "Consumer knowledge: effects on evaluation strategies mediating consumer judgments", *Journal of Consumer Research*, Vol. 12, pp. 31-46.

Warshaw, P.R. (1980), "A new model for predicting behavioral intentions: an alternative to Fishbein", *Journal of Marketing Research*, Vol. 17, pp. 153-72.

Warshaw, P.R., Sheppard, B.H. and Hartwick, J. (1991), "The intention and self-prediction of goals and behaviors", in Bagozzi, R.P. (Ed.), *Advances in Marketing Communication Research*, Greenwich, CT.

This article has been cited by:

1. Timothy Teo, Mingming Zhou, Jan Noyes. 2016. Teachers and technology: development of an extended theory of planned behavior. *Educational Technology Research and Development* **64**:6, 1033-1052. [CrossRef]
2. Ben MansourKaouther Kaouther Ben Mansour benmansour_kaouther@yahoo.fr Dr Kaouther Ben Mansour has a PhD in Marketing and is an Assistant Professor at IHEC (Institute of Higher Commercial Studies), Carthage, Tunisia. She is a member of the URAM (Marketing Research and Applications Unit), FSEG (Faculty of Economic and Management Sciences) in Tunis. She is a reviewer for Qualitative Market Research – An International Journal and other journals. IHEC – Carthage, Carthage, Tunisia . 2016. An analysis of business' acceptance of internet banking: an integration of e-trust to the TAM. *Journal of Business & Industrial Marketing* **31**:8, 982-994. [Abstract] [Full Text] [PDF]
3. Nripendra P. Rana, Yogesh K. Dwivedi, Michael D. Williams, Vishanth Weerakkody. 2016. Adoption of online public grievance redressal system in India: Toward developing a unified view. *Computers in Human Behavior* **59**, 265-282. [CrossRef]
4. Herbert Kotzab, Xavier Brusset and Christoph Teller Christophe Bezes ISTEC, Paris, France . 2016. Comparing online and in-store risks in multichannel shopping. *International Journal of Retail & Distribution Management* **44**:3, 284-300. [Abstract] [Full Text] [PDF]
5. RobertsonNichola Nichola Robertson Nichola Robertson, PhD, is a Senior Lecturer in the Department of Marketing, Deakin University, Melbourne, Australia. Her research interests include customer complaining behaviour, customer dissatisfaction, self-service technologies and customer service. Her research has been published in the Journal of Service Research, Journal of Hospitality and Tourism Research, International Journal of Hospitality Management, Journal of Service Theory and Practice, Journal of Retailing and Consumer Services and the Australasian Marketing Journal, among others. She serves on the Editorial Advisory Board of Journal of Service Theory and Practice. McDonaldHeath Heath McDonald Heath McDonald is Professor of Marketing and Associate Dean (Research & Engagement) at Swinburne University. Heath has a background in consumer research and product management, working mainly with "high involvement" products including sport, charities and the arts. His most recent work focuses on fan development and season ticket holder management. This work has been published in journals including the European Journal of Marketing, Journal of Sport Management, International Journal of Hospitality Management and Sport Management Review. LeckieCivilai Civilai Leckie Dr Civilai Leckie is a Lecturer at Swinburne University of Technology, Australia. Her areas of research include relationship marketing, strategic marketing and business-to-business relationships. She has previously published in the European Journal of Marketing and the Journal of Business Research. McQuilkenLisa Lisa McQuilken Lisa McQuilken is a Senior Lecturer in the Department of Marketing, Deakin University, Melbourne, Australia. She holds a PhD in managing service recovery and has published in the Journal of Tourism and Travel Marketing, the Journal of Hospitality and Tourism Research, the Journal of Consumer Behaviour, the International Journal of Hospitality Management, the Australasian Marketing Journal and the Journal of Financial Services Marketing, among others. Her research interests include service failures, service guarantees as a recovery tool, self-service technologies and consumer complaining behaviour. Department of Marketing, Deakin University, Burwood, Australia Faculty of Business and Enterprise, Swinburne University, Hawthorn, Australia Department of Marketing, Tourism and Social Impact, Swinburne University, Hawthorn, Australia Department of Marketing, Deakin University, Burwood, Australia . 2016. Examining customer evaluations across different self-service technologies. *Journal of Services Marketing* **30**:1, 88-102. [Abstract] [Full Text] [PDF]

6. Nripendra P. Rana, Yogesh K. Dwivedi, Banita Lal, Michael D. Williams, Marc Clement. 2015. Citizens' adoption of an electronic government system: towards a unified view. *Information Systems Frontiers* . [CrossRef]
7. Jiyoung Kim, Youngjung Geum, Yongtae Park. 2015. Integrating customers' disparate technology readiness into technological requirement analysis: an extended Kano approach. *Total Quality Management & Business Excellence* 1-17. [CrossRef]
8. ###, ###, ###. 2015. Does Tangible Clue influence on Perceived Risk and Overall Satisfaction? : Focused on the Customers at Family Restaurants in South Korea. *Culinary Science & Hospitality Research* **21**:5, 38-49. [CrossRef]
9. Kinshuk Jerath, Anuj Kumar, Serguei Netessine. 2015. An Information Stock Model of Customer Behavior in Multichannel Customer Support Services. *Manufacturing & Service Operations Management* **17**:3, 368-383. [CrossRef]
10. Mai Thi Xuan Huynh, Svein Ottar Olsen. 2015. Personality, Personal Values, and Consumer Participation in Self-Production: The Case of Home Meal Preparation. *Psychology & Marketing* **32**:7, 709-724. [CrossRef]
11. Yen-Ting Helena Chiu Department of Marketing and Distribution Management, National Kaohsiung First University of Science & Technology, Kaohsiung, Taiwan, R.O.C. Katharina Maria Hofer Department of Retailing, Sales and Marketing, Johannes Kepler University Linz, Linz, Austria . 2015. Service innovation and usage intention: a cross-market analysis. *Journal of Service Management* **26**:3, 516-538. [Abstract] [Full Text] [PDF]
12. Huynh Thi Xuan Mai, Svein Otta Olsen. 2015. Consumer participation in virtual communities: The role of personal values and personality. *Journal of Marketing Communications* **21**:2, 144-164. [CrossRef]
13. Rakhi Thakur S.P. Jain Institute of Management and Research, Mumbai, India. Mala Srivastava Department of Management, Narsee Monjee Institute of Management Studies, Mumbai, India. . 2015. A study on the impact of consumer risk perception and innovativeness on online shopping in India. *International Journal of Retail & Distribution Management* **43**:2, 148-166. [Abstract] [Full Text] [PDF]
14. Ramón Barrera-Barrera, Antonio Navarro-García, Marta Peris-Ortiz. 2015. El papel de la invarianza factorial en la validación del constructo calidad de servicio electrónico. *Revista Europea de Dirección y Economía de la Empresa* **24**:1, 13-24. [CrossRef]
15. WonIl Joh, ByungTae Yoo, SeungChul Kim. 2014. The Effect of Individual Motivated Propensity on Perceived Characteristics and Use Intentions for Mobile Medical Service. *The Journal of Society for e-Business Studies* **19**:4, 169-193. [CrossRef]
16. Indranil Roy Chowdhury Department of Marketing, XLRI, Jamshedpur, India Sanjay Patro Department of Marketing, XLRI, Jamshedpur, India Pingali Venugopal Department of Marketing, XLRI, Jamshedpur, India D. Israel Department of Marketing, XLRI, Jamshedpur, India . 2014. A study on consumer adoption of technology-facilitated services. *Journal of Services Marketing* **28**:6, 471-483. [Abstract] [Full Text] [PDF]
17. Taehee Kim, Min Cheol Kim, Geewoon Moon, Kyungro Chang. 2014. Technology-Based Self-Service and Its Impact on Customer Productivity. *Services Marketing Quarterly* **35**:3, 255-269. [CrossRef]
18. Thakur Rakhi S.P. Jain Institute of Management and Research, Mumbai, India Srivastava Mala School of Management, Narsee Monjee Institute of Management Studies, Mumbai, India . 2014. Adoption readiness, personal innovativeness, perceived risk and usage intention across customer groups for mobile payment services in India. *Internet Research* **24**:3, 369-392. [Abstract] [Full Text] [PDF]

19. Hsiu-Yuan Wang, Sung-Yeh Wu. 2014. Factors influencing behavioural intention to patronise restaurants using iPad as a menu card. *Behaviour & Information Technology* **33**:4, 395-409. [CrossRef]
20. Ramón Barrera Barrera, Gabriel Cepeda Carrión. 2014. Simultaneous measurement of quality in different online services. *The Service Industries Journal* **34**:2, 123-144. [CrossRef]
21. T. Ramayah, Pedro Soto-Acosta, Ricardo Colomo-Palacios, M. Gopi, Simona Popa. 2014. Explaining the adoption of Internet stock trading in Malaysia: comparing models. *Asian Journal of Technology Innovation* **22**:1, 131-151. [CrossRef]
22. Zhang Xiaoren, Chen Xiangdong, Ding Ling. 2013. Comparative Study of Self-service Technology Adoption based on Product Function. *Information Technology Journal* **12**:12, 2350-2357. [CrossRef]
23. Sujeong Choi. 2013. Determinants of User Perceived Value and Its Influence on the Usage of Smartphone-based Mobile Commerce : Focusing on Service Ubiquity and User Control. *The Journal of Society for e-Business Studies* **18**:4, 273-299. [CrossRef]
24. Gurjeet Kaur Sahi University of Jammu, Jammu, India Sangeeta Gupta University of Jammu, Jammu, India . 2013. Predicting customers' behavioral intentions toward ATM services. *Journal of Indian Business Research* **5**:4, 251-270. [Abstract] [Full Text] [PDF]
25. Athanasios G. Patsiotis Department of Marketing, Deree College, The American College of Greece, Athens, Greece Tim Hughes Department of Marketing, Bristol Business School, University of the West of England, Bristol, UK Don J. Webber Department of Economics, Bristol Business School, University of the West of England, Bristol, UK . 2013. An examination of consumers ' resistance to computer-based technologies. *Journal of Services Marketing* **27**:4, 294-311. [Abstract] [Full Text] [PDF]
26. Margaret Anne Craig-LeesSchool of Marketing and Advertising, Auckland University of Technology, Auckland, New Zealand Jennifer HarrisSchool of Marketing, University of New South Wales, Kensington, Australia Amalia E. MaulanaBinus Business School, Bina Nusantara University, Jakarta, Indonesia. 2013. Websites and revisiting behaviour: an investigation of the relative role of predictors. *Marketing Intelligence & Planning* **31**:3, 250-271. [Abstract] [Full Text] [PDF]
27. Shuling Liao, Colin C. Cheng. 2013. Consumer evaluation of self-service innovation failure: the effect of brand equity and attribution. *The Service Industries Journal* **33**:5, 467-485. [CrossRef]
28. Mutaz M. Al-Debei, Enas Al-Lozi, Anastasia Papazafeiropoulou. 2013. Why people keep coming back to Facebook: Explaining and predicting continuance participation from an extended theory of planned behaviour perspective. *Decision Support Systems* **55**:1, 43-54. [CrossRef]
29. Jungsun (Sunny) KimWilliam F. Harrah College of Hotel Administration, University of Nevada, Las Vegas, Las Vegas, Nevada, USA Natasa ChristodoulidouHospitality Technology Research Institute and Department of Marketing and Management, California State University, Dominguez Hills (CSUDH), Carson, California, USA Yunjeong (Clara) ChooDepartment of Nutrition, Hospitality & Retailing, Texas Tech University, Lubbock, Texas, USA. 2013. Factors influencing customer acceptance of kiosks at quick service restaurants. *Journal of Hospitality and Tourism Technology* **4**:1, 40-63. [Abstract] [Full Text] [PDF]
30. Jimmy Huang, Michele Martin-Taylor. 2013. Turnaround user acceptance in the context of HR self-service technology adoption: an action research approach. *The International Journal of Human Resource Management* **24**:3, 621-642. [CrossRef]
31. Gurjeet Kaur, Sangeeta Gupta. 2012. Consumers' Behavioral Intentions Toward Self-Service Technology in the Emerging Markets. *Journal of Global Marketing* **25**:5, 241-261. [CrossRef]

32. Woojin Lee, Cassandra Castellanos, H. S. Chris Choi. 2012. The Effect of Technology Readiness on Customers' Attitudes toward Self-Service Technology and Its Adoption; The Empirical Study of U.S. Airline Self-Service Check-In Kiosks. *Journal of Travel & Tourism Marketing* **29**:8, 731-743. [CrossRef]
33. Dong-Hee ShinDepartment of Interaction Science, Sungkyunkwan University, Seoul, South Korea. 2012. Cross-analysis of usability and aesthetic in smart devices: what influences users' preferences?. *Cross Cultural Management: An International Journal* **19**:4, 563-587. [Abstract] [Full Text] [PDF]
34. Lily Shui-Lien Chen, Yung-Hsin Lee, Shih-Tse Wang. 2012. Impact of intangibility on perceived risk associated with online games. *Behaviour & Information Technology* **31**:10, 1021-1032. [CrossRef]
35. Kevin Elliott, Gloria Meng, Mark Hall. 2012. The Influence of Technology Readiness on the Evaluation of Self-Service Technology Attributes and Resulting Attitude Toward Technology Usage. *Services Marketing Quarterly* **33**:4, 311-329. [CrossRef]
36. Anuj Kumar, Rahul Telang. 2012. Does the Web Reduce Customer Service Cost? Empirical Evidence from a Call Center. *Information Systems Research* **23**:3-part-1, 721-737. [CrossRef]
37. Juhee Kang, Liang Tang, Ju Yup Lee, Robert H. Bosselman. 2012. Understanding customer behavior in name-brand Korean coffee shops: The role of self-congruity and functional congruity. *International Journal of Hospitality Management* **31**:3, 809-818. [CrossRef]
38. Jyh-Shen Chiou, Chung-Chi Shen. 2012. The antecedents of online financial service adoption: the impact of physical banking services on Internet banking acceptance. *Behaviour & Information Technology* **31**:9, 859-871. [CrossRef]
39. Mary Ann Eastlick, Claudia Ratto, Sherry L. Lotz, Anubha Mishra. 2012. Exploring antecedents of attitude toward co-producing a retail checkout service utilizing a self-service technology. *The International Review of Retail, Distribution and Consumer Research* **22**:4, 337-364. [CrossRef]
40. Shu-Fang Liu, Li-Shia Huang, Yu-Hsiu Chiou. 2012. An integrated attitude model of self-service technologies: evidence from online stock trading systems brokers. *The Service Industries Journal* **32**:11, 1823-1835. [CrossRef]
41. Pejvak Oghazi, Rana Mostaghel, Magnus Hultman, Vinit Parida. 2012. Antecedents of Technology-Based Self-Service Acceptance: A Proposed Model. *Services Marketing Quarterly* **33**:3, 195-210. [CrossRef]
42. 2012. Editorial. *The Service Industries Journal* **32**:9, 1411-1413. [CrossRef]
43. Kaili Yieh, Jiun-shan Chen, Maggie Biwei Wei. 2012. The Effects of Technology Readiness on Customer Perceived Value: An Empirical Analysis. *Journal of Family and Economic Issues* **33**:2, 177-183. [CrossRef]
44. He Michael Jia, Yonggui Wang, Lin Ge, Guicheng Shi, Shanji Yao. 2012. Asymmetric Effects of Regulatory Focus on Expected Desirability and Feasibility of Embracing Self-Service Technologies. *Psychology and Marketing* **29**:4, 209-225. [CrossRef]
45. Myunghwa Kang, Ulrike Gretzel. 2012. Effects of podcast tours on tourist experiences in a national park. *Tourism Management* **33**:2, 440-455. [CrossRef]
46. Michael Chih-Hung WangMarketing Research Center of the Business Administration Department, National Central University, Chung-Li City, Taiwan. 2012. Determinants and consequences of consumer satisfaction with self-service technology in a retail setting. *Managing Service Quality: An International Journal* **22**:2, 128-144. [Abstract] [Full Text] [PDF]
47. Cheng WangSchool of Marketing, University of New South Wales, Sydney, Australia Jennifer HarrisSchool of Marketing, University of New South Wales, Sydney, Australia Paul G. PattersonSchool of Marketing, University of New South Wales, Sydney, Australia. 2012. Customer choice of self-service technology: the

roles of situational influences and past experience. *Journal of Service Management* **23**:1, 54-78. [Abstract] [Full Text] [PDF]

48. Johanna Gummerus, Minna Pihlström. 2011. Context and mobile services' value-in-use. *Journal of Retailing and Consumer Services* **18**:6, 521-533. [CrossRef]
49. Wan-I Lee, Yen Ting Chiu, Chia-Chi Liu, Chen-Yuan Chen. 2011. Assessing the effects of consumer involvement and service quality in a self-service setting. *Human Factors and Ergonomics in Manufacturing & Service Industries* **21**:5, 504-515. [CrossRef]
50. Pieter Verdegem, Lieven De Marez. 2011. Rethinking determinants of ICT acceptance: Towards an integrated and comprehensive overview. *Technovation* **31**:8, 411-423. [CrossRef]
51. Raymond P. Fisk and Lia PatricioJiun-Sheng Chris LinDepartment of International Business, National Taiwan University, Taipei, Taiwan Hsing-Chi ChangDepartment of Business Administration, National Taiwan University of Science and Technology, Taipei, Taiwan. 2011. The role of technology readiness in self-service technology acceptance. *Managing Service Quality: An International Journal* **21**:4, 424-444. [Abstract] [Full Text] [PDF]
52. João F. ProençaFaculty of Economics, University of Porto, Porto, Portugal Maria Antónia RodriguesDepartment of Marketing, Institute of Accounting and Administration, Polytechnic Institute of Porto, Matosinhos, Portugal. 2011. A comparison of users and non-users of banking self-service technology in Portugal. *Managing Service Quality: An International Journal* **21**:2, 192-210. [Abstract] [Full Text] [PDF]
53. Hung-Chang Chiu, Yi-Ching Hsieh, Jinshyang Roan, Kuan-Jen Tseng, Jung-Kuei Hsieh. 2011. The challenge for multichannel services: Cross-channel free-riding behavior. *Electronic Commerce Research and Applications* **10**:2, 268-277. [CrossRef]
54. José Manuel Ortega Egea, María Victoria Román González. 2011. Explaining physicians' acceptance of EHCR systems: An extension of TAM with trust and risk factors. *Computers in Human Behavior* **27**:1, 319-332. [CrossRef]
55. John D. Wells, Damon E. Campbell, Joseph S. Valacich, Mauricio Featherman. 2010. The Effect of Perceived Novelty on the Adoption of Information Technology Innovations: A Risk/Reward Perspective. *Decision Sciences* **41**:4, 813-843. [CrossRef]
56. Lisa WesselsFaculty of Business, Queensland University of Technology, Brisbane, Australia Judy DrennanFaculty of Business, Queensland University of Technology, Brisbane, Australia. 2010. An investigation of consumer acceptance of M-banking. *International Journal of Bank Marketing* **28**:7, 547-568. [Abstract] [Full Text] [PDF]
57. Xiao TongDepartment of Clothing, Textiles, and Interior Design, The University of Alabama, Tuscaloosa, Alabama, USA. 2010. A cross-national investigation of an extended technology acceptance model in the online shopping context. *International Journal of Retail & Distribution Management* **38**:10, 742-759. [Abstract] [Full Text] [PDF]
58. Ugur YavasEast Tennessee State University, Johnson City, Tennessee, USA Emin BabakusThe University of Memphis, Memphis, Tennessee, USA Nicholas J. AshillSchool of Business and Management, American University of Sharjah, Sharjah, United Arab Emirates. 2010. Testing a branch performance model in a New Zealand bank. *Journal of Services Marketing* **24**:5, 369-377. [Abstract] [Full Text] [PDF]
59. Joel E. Collier, Daniel L. Sherrell. 2010. Examining the influence of control and convenience in a self-service setting. *Journal of the Academy of Marketing Science* **38**:4, 490-509. [CrossRef]

60. Haiping WangHow to attract and retain consumers online: An integrated analysis framework 409-413. [CrossRef]
61. Chien-Hsin Lin. 2010. In search of e-service value: technology-exploitation vs. certainty-seeking online behaviours. *The Service Industries Journal* **30**:8, 1377-1400. [CrossRef]
62. Yan Liu, Changfeng Zhou, Yingwu ChenCustomer satisfaction measurement model of e-government service 419-423. [CrossRef]
63. Yen-Ting Helena ChiuDepartment of Marketing and Distribution Management, National Kaohsiung First University of Science and Technology, Kaohsiung, Taiwan, Republic of China Shih-Chieh FangDepartment of Business Administration, National Cheng Kung University, Tainan City, Taiwan, Republic of China Chuan-Chuan TsengDepartment of Business Administration, National Cheng Kung University, Tainan City, Taiwan, Republic of China. 2010. Early versus potential adopters. *International Journal of Retail & Distribution Management* **38**:6, 443-459. [Abstract] [Full Text] [PDF]
64. Young Sik Kang, Heeseok Lee. 2010. Understanding the role of an IT artifact in online service continuance: An extended perspective of user satisfaction. *Computers in Human Behavior* **26**:3, 353-364. [CrossRef]
65. Yan Liu, Yingwu Chen, Changfeng ZhouDeterminants of Customer Purchase Intention in Electronic Service 1-4. [CrossRef]
66. Katerina Pramatari, Aristeidis Theotokis. 2009. Consumer acceptance of RFID-enabled services: a model of multiple attitudes, perceived system characteristics and individual traits. *European Journal of Information Systems* **18**:6, 541-552. [CrossRef]
67. Alun EppsBusiness School, Middlesex University Dubai, Dubai, United Arab Emirates Robert GoversConsortium University of Leuven, Heverlee, Belgium Frank M. GoCentre for Tourism Marketing, Department of Marketing Management, Rotterdam School of Management, Erasmus University, Rotterdam, The Netherlands. 2009. A history of internet purchasing: suggestions for web-based entrepreneurs and SMEs. *Journal of Research in Marketing and Entrepreneurship* **10**:1, 4-18. [Abstract] [Full Text] [PDF]
68. Reeti Agarwal, Sanjay Rastogi, Ankit Mehrotra. 2009. Customers' perspectives regarding e-banking in an emerging economy. *Journal of Retailing and Consumer Services* **16**:5, 340-351. [CrossRef]
69. Yuantao JiangA conceptual framework and hypotheses for the adoption of e-business intelligence 558-561. [CrossRef]
70. Pratibha A. Dabholkar, Xiaojing Sheng. 2009. The role of perceived control and gender in consumer reactions to download delays. *Journal of Business Research* **62**:7, 756-760. [CrossRef]
71. Brian R. Kinard, Michael L. Capella, Jerry L. Kinard. 2009. The Impact of Social Presence on Technology Based Self-Service Use: The Role of Familiarity. *Services Marketing Quarterly* **30**:3, 303-314. [CrossRef]
72. Thijs BroekhuizenDepartment of Innovation Management and Strategy, Faculty of Economics and Business, University of Groningen, Groningen, The Netherlands Eelko K.R.E. HuizinghDepartment of Innovation Management and Strategy, Faculty of Economics and Business, University of Groningen, Groningen, The Netherlands. 2009. Online purchase determinants. *Management Research News* **32**:5, 440-457. [Abstract] [Full Text] [PDF]
73. Terrence C. Sebora, Sang M. Lee, Nittana Sukasame. 2009. Critical success factors for e-commerce entrepreneurship: an empirical study of Thailand. *Small Business Economics* **32**:3, 303-316. [CrossRef]
74. Qin Su, Ling Li, Yan Wu Cui. 2009. Analysing relational benefits in e-business environment from behavioural perspective. *Systems Research and Behavioral Science* **26**:2, 129-142. [CrossRef]

75. Lawrence F. CunninghamThe Business School, University of Colorado at Denver and Health Sciences Center, Denver, Colorado, USA Clifford E. YoungThe Business School, University of Colorado at Denver and Health Sciences Center, Denver, Colorado, USA James GerlachThe Business School, University of Colorado at Denver and Health Sciences Center, Denver, Colorado, USA. 2009. A comparison of consumer views of traditional services and self-service technologies. *Journal of Services Marketing* **23**:1, 11-23. [Abstract] [Full Text] [PDF]

76. Kim Hongyoun HahnApparel and Communication Technologies Department, University of Wisconsin-Stout, Menomonie, Wisconsin, USA Jihyun KimDepartment of Apparel, Housing, and Resource Management, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, USA. 2009. The effect of offline brand trust and perceived internet confidence on online shopping intention in the integrated multi-channel context. *International Journal of Retail & Distribution Management* **37**:2, 126-141. [Abstract] [Full Text] [PDF]

77. Gordon Müller-Seitz, Kirsti Dautzenberg, Utho Creusen, Christine Stromereder. 2009. Customer acceptance of RFID technology: Evidence from the German electronic retail sector. *Journal of Retailing and Consumer Services* **16**:1, 31-39. [CrossRef]

78. Ahmad JamalCardiff Business School, Cardiff University, Cardiff, UK Adegboyega AdeloworeBeneficial Finance (HSBC Group), Cardiff, UK. 2008. Customer-employee relationship. *European Journal of Marketing* **42**:11/12, 1316-1345. [Abstract] [Full Text] [PDF]

79. Shu-Hsun HoDepartment of Business Administration, Providence University, Shalu, Taiwan Ying-Yin KoDepartment of Business Administration, Providence University, Shalu, Taiwan. 2008. Effects of self-service technology on customer value and customer readiness. *Internet Research* **18**:4, 427-446. [Abstract] [Full Text] [PDF]

80. Aristeidis Theotokis, Pavlos A Vlachos, Katerina Pramatari. 2008. The moderating role of customer–technology contact on attitude towards technology-based services. *European Journal of Information Systems* **17**:4, 343-351. [CrossRef]

81. Lawrence F. Cunningham, Clifford E. Young, James H. Gerlach. 2008. Consumer views of self-service technologies. *The Service Industries Journal* **28**:6, 719-732. [CrossRef]

82. S. OzdemirStrathclyde Business School, University of Strathclyde, Glasgow, UK P. TrottPortsmouth Business School, University of Portsmouth, Portsmouth, UK A. HoechtPortsmouth Business School, University of Portsmouth, Portsmouth, UK. 2008. Segmenting internet banking adopter and non-adopters in the Turkish retail banking sector. *International Journal of Bank Marketing* **26**:4, 212-236. [Abstract] [Full Text] [PDF]

83. Yen-Hao Howard ChenPublic Television Service, Taiwan, ROC David CorkindaleInternational Graduate School of Business, University of South Australia, Adelaide, Australia. 2008. Towards an understanding of the behavioral intention to use online news services. *Internet Research* **18**:3, 286-312. [Abstract] [Full Text] [PDF]

84. Sara SandströmService Research Center, Karlstad University, Karlstad, Sweden Bo EdvardssonService Research Center, Karlstad University, Karlstad, Sweden Per KristenssonService Research Center, Karlstad University, Karlstad, Sweden Peter MagnussonService Research Center, Karlstad University, Karlstad, Sweden. 2008. Value in use through service experience. *Managing Service Quality: An International Journal* **18**:2, 112-126. [Abstract] [Full Text] [PDF]

85. Prem Shamdasani, Avinandan Mukherjee, Neeru Malhotra. 2008. Antecedents and consequences of service quality in consumer evaluation of self-service internet technologies. *The Service Industries Journal* **28**:1, 117-138. [CrossRef]

86. Devon S. Johnson. 2008. Beyond trial: Consumer assimilation of electronic channels. *Journal of Interactive Marketing* **22**:2, 28-44. [CrossRef]

87. Ogenyi Ejye Omar, Nana Owusu-Frimpong. 2007. Life Insurance in Nigeria: An Application of the Theory of Reasoned Action to Consumers' Attitudes and Purchase Intention. *The Service Industries Journal* **27**:7, 963-976. [CrossRef]

88. Chien-Hsin LinThe Effects of Technology Readiness on the Formation of E-Service Value 1811-1817. [CrossRef]

89. Hae Young Lee, Hailin Qu, Yoo Shin Kim. 2007. A study of the impact of personal innovativeness on online travel shopping behavior—A case study of Korean travelers. *Tourism Management* **28**:3, 886-897. [CrossRef]

90. Martin Fassnacht, Ibrahim Köse. 2007. Consequences of Web-based service quality: Uncovering a multi-faceted chain of effects. *Journal of Interactive Marketing* **21**:3, 35-54. [CrossRef]

91. Kevin Celuch, Stephen Goodwin, Steven A. Taylor. 2007. Understanding small scale industrial user internet purchase and information management intentions: A test of two attitude models. *Industrial Marketing Management* **36**:1, 109-120. [CrossRef]

92. Geke van Dijk, Shailey Minocha, Angus Laing. 2007. Consumers, channels and communication: Online and offline communication in service consumption. *Interacting with Computers* **19**:1, 7-19. [CrossRef]

93. David HackmanUniversity of Technology, Sydney, Australia Siegfried P. GunderganUniversity of Technology, Sydney, Australia Paul WangUniversity of Technology, Sydney, Australia Kerry DanielUniversity of Technology, Sydney, Australia. 2006. A service perspective on modelling intentions of on-line purchasing. *Journal of Services Marketing* **20**:7, 459-470. [Abstract] [Full Text] [PDF]

94. Rhett H. WalkerLaTrobe University, Bendigo, Australia Lester W. JohnsonMelbourne Business School, The University of Melbourne, Melbourne, Australia. 2006. Why consumers use and do not use technology-enabled services. *Journal of Services Marketing* **20**:2, 125-135. [Abstract] [Full Text] [PDF]

95. Ismet Anitsal, Daniel J. Flint. 2006. Exploring Customers' Perceptions in Creating and Delivering Value. *Services Marketing Quarterly* **27**:1, 57-72. [CrossRef]

96. W.C. May SoDepartment of IMSE, Faculty of Engineering, University of Hong Kong, Hong Kong, People's Repubic of China T.N. Danny WongDepartment of IMSE, Faculty of Engineering, University of Hong Kong, Hong Kong, People's Repubic of China Domenic SculliDepartment of IMSE, Faculty of Engineering, University of Hong Kong, Hong Kong, People's Repubic of China. 2005. Factors affecting intentions to purchase via the internet. *Industrial Management & Data Systems* **105**:9, 1225-1244. [Abstract] [Full Text] [PDF]

97. Yu-Bin ChiuGraduate School of Management, Yuan Ze University, Taoyuan, Taiwan, ROC Department of Management Information System, Chung-Kuo Institute of Technology College, Taipei, Taiwan, ROC Chieh-Peng LinDepartment of Business Administration, Vanung University, Taoyuan, Taiwan, ROC Ling-Lang TangGraduate School of Management, Yuan Ze University, Taoyuan, Taiwan, ROC. 2005. Gender differs: assessing a model of online purchase intentions in e-tail service. *International Journal of Service Industry Management* **16**:5, 416-435. [Abstract] [Full Text] [PDF]

98. Steven A. Taylor, Stephen Goodwin, Kevin Celuch. 2005. An Exploratory Investigation into the Question of Direct Selling via the Internet in Industrial Equipment Markets. *Journal of Business-to-Business Marketing* **12**:2, 39-72. [CrossRef]

99. Francisco J. Martínez-LópezDepartment of Marketing, Universidad de Granada, Granada, Spain Paula LunaDepartment of Financial and Managerial Information Systems, Universidad de Sevilla, Sevilla, Spain

Francisco José MartínezDepartment of Financial and Managerial Information Systems, Universidad de Huelva, Huelva, Spain. 2005. Online shopping, the standard learning hierarchy, and consumers' internet expertise. *Internet Research* **15**:3, 312-334. [Abstract] [Full Text] [PDF]

100. Hsiuju Rebecca Yen. 2005. An attribute-based model of quality satisfaction for Internet self-service technology. *The Service Industries Journal* **25**:5, 641-659. [CrossRef]
101. Jacquie McDonald, Janelle McPhail, Michael Maguire, Bruce Millett. 2004. A conceptual model and evaluation process for educational technology learning resources: a legal case study. *Educational Media International* **41**:4, 287-296. [CrossRef]
102. David GilbertUniversity of Surrey, Guildford, UK Pierre BalestriniUniversity of Surrey, Guildford, UK Darren LittleboyDetica Ltd, Surrey Research Park, Guildford, UK. 2004. Barriers and benefits in the adoption of e-government. *International Journal of Public Sector Management* **17**:4, 286-301. [Abstract] [Full Text] [PDF]
103. Ravipa LarpsiriDepartment of Marketing, Sripatum University, Bangkok, Thailand School of Management, Asian Institute of Technology, Pathumthani, Thailand Mark SpeeceSchool of Management, Asian Institute of Technology, Graduate School, Bangkok University, Bangkok, Thailand. 2004. Technology integration. *Marketing Intelligence & Planning* **22**:4, 392-406. [Abstract] [Full Text] [PDF]
104. Toñita Perea y MonsuwéMaastricht University, Maastricht, The Netherlands Benedict G.C. DellaertMaastricht University, Maastricht, The Netherlands Ko de RuyterMaastricht University, Maastricht, The Netherlands. 2004. What drives consumers to shop online? A literature review. *International Journal of Service Industry Management* **15**:1, 102-121. [Abstract] [Full Text] [PDF]
105. Robert C. Ford, John T. Bowen. 2003. Getting Guests to Work for You. *Journal of Foodservice Business Research* **6**:3, 37-53. [CrossRef]
106. Pratibha A. DabholkarUniversity of Tennessee, Knoxville, Tennessee, USA L. Michelle BobbittBradley University, Peoria, Illinois, USA Eun-Ju LeeCalifornia State University, Los Angeles, California, USA. 2003. Understanding consumer motivation and behavior related to self-scanning in retailing. *International Journal of Service Industry Management* **14**:1, 59-95. [Abstract] [Full Text] [PDF]
107. Heston SurjadjajaHeston Surjadjaja is a Student at The Business School, Bournemouth University, Bournemouth, UK.Sid GhoshSid Ghosh is a Research Fellow, at The Business School, Bournemouth University, Bournemouth, UK.Jiju AntonyJiju Antony is Senior Lecturer at WMG, University of Warwick, Coventry, UK.. 2003. Determining and assessing the determinants of e-service operations. *Managing Service Quality: An International Journal* **13**:1, 39-53. [Abstract] [Full Text] [PDF]
108. Jennifer Rowley. 2003. Profiling and understanding student information behaviour: Methodologies and meaning. *ALT-J* **11**:1, 28-40. [CrossRef]
109. Steven A. TaylorIllinois State University, Normal, Illinois, USA Gary L. HunterIllinois State University, Normal, Illinois, USA. 2002. The impact of loyalty with e-CRM software and e-services. *International Journal of Service Industry Management* **13**:5, 452-474. [Abstract] [Full Text] [PDF]
110. Khanh V. LaKhanh V. La is a Researcher at RMIT University, Melbourne, Australia.Jay KandampullyJay Kandampully is an Associate Professor at the University of Queensland, UQ Business School, Queensland, Australia.. 2002. Electronic retailing and distribution of services: cyber intermediaries that serve customers and service providers. *Managing Service Quality: An International Journal* **12**:2, 100-116. [Abstract] [Full Text] [PDF]
111. Ada Scupola, Anders Hente, Hanne Westh NicolajsenE-Services and the Codification of Informational Services 16-29. [CrossRef]

112. Salim Al-Hajri, Arthur TatnallFactors Relating to the Adoption of Internet Technology by the Omani Banking Industry 264-282. [CrossRef]
113. Yan Liu, Yingwu Chen, Changfeng ZhouExploring Success Factors for Web-based E-Government Services: Behavioral Perspective from End Users 937-942. [CrossRef]
114. Calin GurauOnline Self-Services 66-80. [CrossRef]
115. Ángel Hernández-García, Ángel Francisco Agudo-Peregrina, Santiago Iglesias-PradasAdoption of Mobile Video-Call Service 49-72. [CrossRef]
116. Viveka Ramoo, T. Ramayah, May-Chiun Lo, Teoh Ai PingElectronic Tax Filing 147-156. [CrossRef]