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Consumer attitudes toward personalization features and intention to purchase online

JungKun Park

To the Graduate Council:

I am submitting herewith a dissertation written by JungKun Park entitled "Consumer attitudes toward personalization features and intention to purchase online." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Human Ecology.

Ann E. Fairhurst, Major Professor

We have read this dissertation and recommend its acceptance:
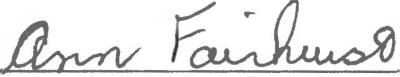
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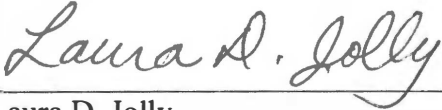
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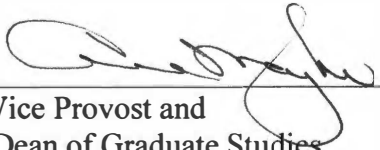
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CONSUMER ATTITUDES TOWARD PERSONALIZATION FEATURES AND INTENTION TO PURCHASE ONLINE

A Dissertation
Presented for the
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DEDICATION

The dissertation dedicated to my family.

My mother, Heesook Kim for her love, patience and encouragement;

My father, Hyunchae Park for his belief in my ability;

Wife, Yoonjung Jung, for her supports and love;

and

My lovely children, Shannon (Sojung) and Daniel (Jinyoung).

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ABSTRACT

In this study, a model of attitude toward personalization and purchase intention is developed to investigate how consumer attitudes and intention to purchase using personalization features are influenced by privacy and security concerns and by previous online purchase experiences. The behavioral intention model (Fishbein, 1975) has been adopted for theoretical model building.

To collect data, an e-mail survey was distributed to 7,000 online consumers who had at least online shopping experience and a sample of 1140 usable responses were used for data analysis. The results indicated that 1) attitudes toward personalization features were important determinants of consumer intentions to purchase online, 2) consumer concerns about privacy and security had a significant influence on consumer attitudes toward personalization features, and 3) previous online purchase experience had no influence on consumer attitudes toward personalization features. Implications and directions for future research are discussed.

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CHAPTER I

INTRODUCTION

Personalization in traditional retailing can be defined as social interaction between service providers and their customers (Mittal & Lassar, 1996). A new type of personalization is redefining retailing strategies in the area of e-commerce. In the e-commerce environment, personalization has taken on the important role of improving service levels and fostering customer loyalty (Shaw, 2003). Many e-tailers now offer highly personalized services and even products in a wide range of categories, transforming the practice of retailing from retailer–oriented to consumer– oriented. This retailing practice involves tailoring products and services to the individual needs of specific consumers. E-tailers let consumers specify their own services according to their needs and wants by adopting new personalization technologies. Personalization has been identified as an important strategy for retailing, a strategy that should be included as an important element of the marketing mix (Goldsmith, 1999). However, no empirical study has been done to investigate how consumer attitudes and intention to purchase using personalization features are influenced by privacy and security concerns and by previous online purchase. If it can be demonstrated that consumer acceptance or attitudes toward personalization of services in online stores play a major role in predicting future consumer purchasing intentions, strategic modification of personalization would be a valuable retailing tool for predicting future consumer behavior.

In this study, the concept of personalization in e-commerce is defined, and differences are described between the strategies of personalization used in e-commerce and in traditional brick-and-mortar retailing. In addition, consumer intentions and attitudes were measured in the model with privacy and security concerns and previous purchase online to demonstrate how personalization acts on consumer intention to purchase online and structure of consumer intention to make product purchases using personalization features is identified. To focus on the importance of personalization, a model is developed to explore the role of online personalization features and consumer attitudes toward them as a predictor of online purchasing intentions with consumer concerns about privacy and security and previous online purchase to observe the relative importance. A survey, distributed to a randomly selected sample of 7,000 consumers, measures attitudes toward personalization features and intention to purchase. Data from a usable sample of 1,140 was used for statistical analysis and implications are discussed.

Statement of Problem

In traditional retailing, personalization has been identified by marketing scholars as a tool that can increase sales and assist companies in gaining a competitive position in the marketplace. In e-commerce, personalization has been identified by many researchers as a potential source of competitive advantage for retailers, one that may lead to favorable service quality evaluations by consumers (Burn, Marshall, & Barnett, 2002). Empirical evidence exists that personalized online shopping yields improved sales and profits to the retailers that practice it (Hof, 1998). However, traditional definitions and studies of personalization do not transfer completely into e-commerce environments

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because of the reduced or non-existing opportunities for interpersonal contact with consumers in online stores. Also, personalization in e-tailing requires the provision of voluntary or involuntary personal 'prior information' from consumers before it can be implemented by retailers. If consumers are resistant to reveal personal information because of concerns about privacy or security, they will not be able to take advantage of the personalization features provided by the retailers, and retailers' implementation of personalization may not be possible. Thus, in the e-commerce environment, personalization may not always positively enhance the intention of the consumer to make a purchase.

Personalization has been treated as a natural feature of e-commerce and a positive factor that may encourage consumers to make purchases online in many product categories. However, despite the purported importance of personalization in service delivery, there is no empirical research to confirm the positive influence of personalization on online sales, and relatively little theory exists concerning personalized service-delivery to the individual consumer in the stage of pre-transaction (Bettencourt & Gwinner, 1996; Surprenant & Solomon, 1987). According to a study by Shim, Eastlick, Lotz, and Warrington (2001), there is compelling evidence to suggest that many consumers search online stores intending to purchase, but subsequently abandon their purpose and exit the stores. Another recent survey reports that as many as 55% of online consumers abandon their shopping carts prior to checkout and 32% of consumers abandon them at the point of sale (Shop.org, 2001). Personalization features may encourage consumers to complete transactions thus reducing the number of consumers abandoning their shopping carts prior to purchasing.

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Purpose of the Study

The primary purpose of this study is to examine how consumers' attitudes toward personalization features in e-tailing influence consumer intentions to purchase online by identifying the structure of consumer intention to make product purchase. Thus, the focus of the study is measuring consumer attitudes and matching to intentions to purchase using personalization features by determining whether consumer attitudes of personalized services in an online store is a key determinant predicting consumers' intentions to purchase. Following the Theory of Planned Behavior (TPB) (Ajzen, 1991), and the Model of Online Prepurchase Intentions (MOPI) (Shim et al., 2001), several attributes are identified in this study as likely predictors of consumer intentions to purchase using personalization features. The study has three main objectives. The first is to identify the structure of consumer intentions to make product purchases using personalization features. To achieve this goal, the relative importance of consumer concerns about security and privacy, previous purchases, and attitude toward personalization features are analyzed. In consumer intention research, attitude has been considered the most important predictor of a person's behavioral intention (Chang, Burns & Noel, 1996). Therefore, it is necessary to determine which attitude constructs play the most important role in predicting a person's behavioral intentions with regard to online purchase using personalization features. To measure consumer attitudes toward personalization features, the study investigates the belief and importance. This information has managerial implications and can help e-tailers develop efficient marketing strategies by allowing them to understand influential factors in consumers' online purchasing. The second objective of the study is to investigate overall online components of personalization

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features and to develop categories of features that might increase or decrease consumer intentions to purchase online. At the same time, by analyzing the personalization features, which are currently available to online stores, the study assimilates many features reviewed in previous studies into a proposed consumer intention model. The third objective of the study is to examine the relative importance of attitude, previous purchase, and privacy and security concerns to purchase intention. In order to achieve understanding of the respective role of consumer attitudes and other variables in predicting consumers' intention to purchase using personalization features, a Model of Attitude toward Personalization and Purchase Intention is developed.

Theoretical Perspective

The purchase-intention model developed in this study draws, first, on an adaptation of the Theory of Planned Behavior, derived from the influential Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980). Second, from the Model of Online Prepurchase Intention's (Shim, et al., 2001), previous online purchase experience was adopted as an additional construct for measuring attitude toward personalization features (see Figure 1). According to the theory of planned behavior, attitude is treated as a strong determinant of a person's behavioral intention (Fishbein & Ajzen, 1975; Ajzen, 1985). The most comprehensive treatment of attitude and its influence on behavior is found in Fishbein and Ajzen (1975, 1980) and in Ajzen's follow-up on the Theory of Planned Behavior (TPB). Fishbein and Ajzen (1985) developed the theory of reasoned action for relations between attitudes and behaviors, as a function of behavioral intention.
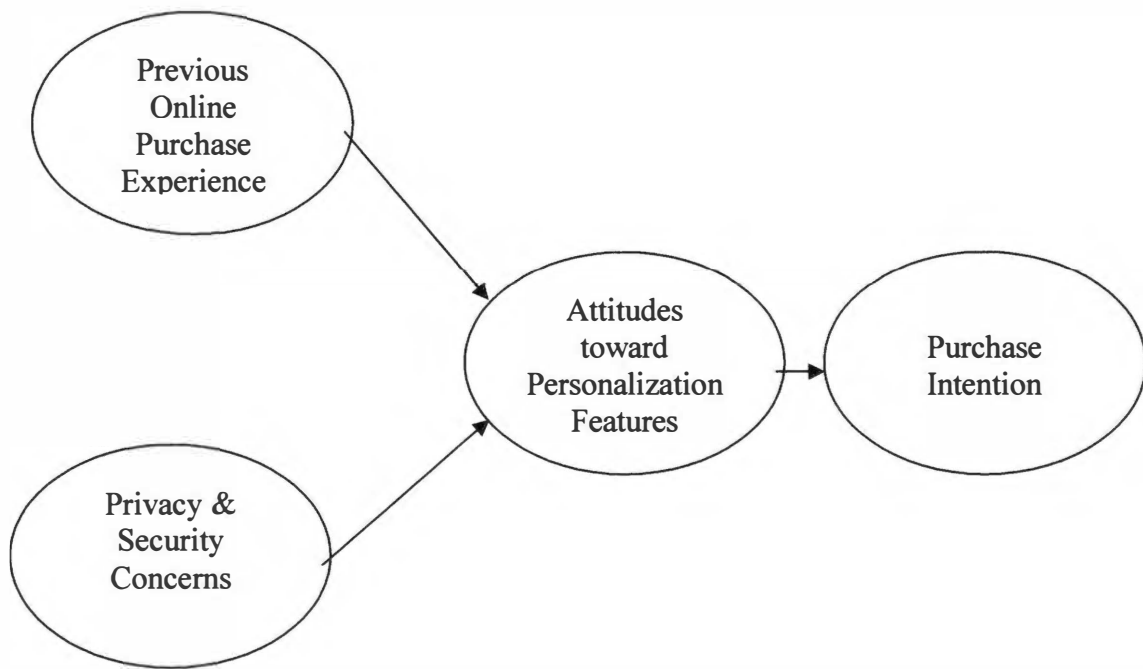
Figure 1. Proposed Model of Consumer Attitudes toward Personalization

Features and Purchase Intention

With attention to the criticisms of TRA, the theory of planned behavior was developed later by Ajzen (1985) in an effort to explain behavioral intention under incomplete control. The TRA suggests that attitudes can be used to predict behavioral intentions and behaviors. Behaviors are driven by behavioral intentions, which themselves are the product of attitudes toward behavior and subjective norms with respect to the behavior. While the TRA emphasizes attitudes toward performing a behavior, the TPB is designed to predict and explain behavior by focusing on intentions for behaviors that would be subject to a degree of personal control. The TRA has been used successfully to identify key elements of consumer decision-making (Keen & McDonald, 2002; Taylor & Todd, 1995). Even though most of the support for the theory has come from social psychology, research using TRA has proven to be successful across a number of disciplines (Keen & McDonald, 2002) and is designed to explain any human behavior (Ajzen & Fishbein, 1980; Shepard, Hartwick & Warshaw, 1988).

The TPB extends the TRA by adding perceived behavioral control as a factor that can influence intentions and behaviors (Ajzen, 1991). According to the TPB, attitude toward a behavior and subjective norms are immediate determinants of the intention to perform a behavior. The TPB asserts that behavioral intention is a function of attitude and subjective norms but with the addition of Perceived Behavioral Control (PBC). PBC has been defined as the perception of the ease or difficulty of performing a behavior (Ajzen, 1991). The distinction between the theory of reasoned action and the theory of planned behavior lies in the inclusion of perceived behavioral control. Consequently, the theory of planned behavior is expressed in an equation incorporating three predictors of behavioral intention: attitude, subjective norms, and perceived behavioral control. It is

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believed that behavior is strongly influenced by an individual's confidence in his ability to perform a behavior.

In the context of online shopping, PBC refers to the perception of how easy or difficult it will be to shop online and is interpreted in online research as a consumer's confidence construct, measured by asking consumers about the potential barriers to making online purchases (Hoffman & Novak, 1996; Bobbitt & Dabholkar, 2001). For example, if two consumers have equal intentions to purchase online, the consumer who has more confidence in her or his ability is more likely to purchase online. The TPB has been widely used in many areas such as food purchases (Sparks & Shepard, 1992; Cook, Kerr, & Moore, 2002), newspaper recycling (Boldero, 1995) and online product purchases (Shim et al., 2001).

The Model of Online Purchase Intention (MOPI) has been adapted because it suggests that prior experience with online shopping is a significant predictor of the intention to purchase online, while TRA and TPB do not include past behavior as a predictor in their model. Other attitudinal research has confirmed that inclusion of past behavior in the model significantly improves the prediction of behavior (Sutton & Hallet, 1989; Shim, et al., 2001). The study of online product purchasing intentions by Shim et al. (2001) examining the respective roles of consumer attitude and other variables in predicting Internet search and purchasing intentions suggests the variable of past Internet experience as an important antecedent for online consumer research.

Hypotheses

On the basis of previous research, the current study proposes to examine the following hypotheses:

H1: Attitudes toward personalization features are important determinants of consumer intentions to purchase online.

H2: Previous online purchase experiences will significantly influence consumer attitudes toward personalization features.

H3: Consumer concerns about privacy and security have a significant influence on consumer attitudes towards personalization features.

Attitudes toward thirteen personalization features in online stores represent various aspects of online shopping. These personalization features have been derived from a review of literature on e-commerce.

1. Comparison shopping features
2. Product and price search features
3. Shopping selection aids
4. Login and password for site entry
5. Wish Lists
6. Reward programs

7. Promotion and event notification

8. Ability to personalize

9. Automatic identification or recognition

10. Customer services

11. Order and Delivery-tracking

12. Options for personal information to be saved

13. Options for financial information to be saved

Definitions

The following are the terms used and their definitions relevant to this study:

Attitudes: Learned predispositions to respond to an object or class of objects in a consistently favorable or unfavorable way (Gordon, 1935).

Belief: Performance of a certain behavior or usage of a feature will lead to an anticipated outcome (Sheth, 2003)

Personalization: The process of gathering and storing information about consumers, analyzing the information, and, based on the analysis, delivering the right information to each consumer at the right time by customizing some features of service so that the consumer enjoys more convenience, lower cost, or some other benefit (Peppers & Rogers Group, 2002) denoting any aspect of e-marketing that is modified to an individual customer (Kalyanam & McIntyre, 2002).

Personalization Feature: Any feature in an online store whose ultimate goal relates to consumer benefits (Wind & Rangaswamy, 2001), consumer revelation of personal information for personalization, implemetation by exchanging information (Goldsmith, 1999), and consumer interaction (Bittner, Bernard & Mohr, 1994).

Intention: Motivational components of behavior, that is, the degree of conscious effort that a person will exert in order to perform a behavior / expressed intent to either purchase or not purchase a product (Shim et al., 2001).

Customization: The system's ability to customize items by allowing individual users to set their own preferences (Kalyanam & McIntyre, 2002).

Individualization: The system's ability to customize itself to the user based on the user's exhibited behavior (Kalyanam & McIntyre, 2002).

Mass Customization: Using flexible processes and organizational structures to produce varied and often individually customized products and services at the price of standardized mass-produced alternatives (Hart, 1996).

Online Privacy: The individual's right to anonymity and control over personal information and the right in an online environment to keep some parts of the user's life private (Hallman, 2001). Also, it refers to aspects of an individual or entity that the owner

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wants to remain confidential from a third party including data, properties, and behavioral characteristics (Gosh, 2001).

Online Security: Data confidentiality of consumer from privacy aspects (Gosh, 2001).

Perceived Online Security and Privacy: The extent to which one believes that the online shopping store is safe for transmitting sensitive information (Salisbury, Pearson & Miller, 2001).

CHAPTER II

REVIEW OF LITERATURE

To establish and support the model proposed in this study, the literature review covers the basic concepts of personalization and its implementation methods, privacy and security in e-tailing, and attitudes and intentions starting with a general review of e-commerce and e-tailing.

E-commerce and E-tailing

The objectives of E-commerce can be defined as targeting customers by collecting and analyzing business information, conducting customer transactions online, and maintaining online relationships with customers by means of a telecommunications network (Shaw, 2003). E-commerce has emerged as the media with the greatest potential market for e-tailers for great profits in a competitive marketplace and an extra channel for sales to consumers (Yen & Kong, 2002). The US market for e-commerce was estimated to be $330 billion in 2002 and is expected to grow to $1,000 billion by 2005 (E-marketers.com, 2003). The boom in e-commerce has pushed retailers to make organizational and system changes to ensure that they stay one step ahead of the competition (Fraser, Fraser & McDonald, 2000). In order to gain a competitive advantage in e-commerce, many traditional retailers have established websites by utilizing a site for their extra channel of communication with the consumer. The shift to e-commerce is revolutionary because it links consumers to electronic marketplaces, rather than just electronically supporting hierarchical transactions between organizations

and consumers (Strader & Shaw, 1999). The benefits that consumers in electronic markets receive from lower prices and search costs are in many instances more than enough to offset the potential additional risk, distribution costs and market costs (Fraser et al., 2000).

Since the retailers' online store requires almost everything, or more, as a traditional retail store has, the contents of websites are important determinants of consumer behavior. An obvious starting point for any investigation of Internet adoption by retail organizations and consumer behavior studies is a direct review of retailers' web sites to identify the range of functions and services they offer. Three primary categories of web site determinants have been identified by Hart, Doherty, and Ellis-Chadwick (2000) and include registration, information provision and interactivity. Their findings show the content of an e-tailers' website is primarily for the purpose of giving information to the consumer and receiving or collecting information from consumers.

Consumers will only shop electronically if it provides a significant advantage over conventional shopping. While this may seem obvious, the majority of firms trying to develop interactive shopping applications have conducted research on consumers' needs and desires for services (Allen & Fjermestad, 2001). Two major consumer benefits of online shopping have been identified (Peterson, 2001). First, online shopping gives consumers convenience, offering a convenient location, 24 hours a day with countless numbers of products. Second, online shopping provides benefits to the economy by reducing the costs of the traditional retail format. Due to the ease of obtaining information from the Internet, promotion is another benefit of e-commerce. Peterson (2001) notes an advantage of the internet is the richness of information it provides to

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consumers. The author suggests that e-commerce provides consumers lower costs for products while allowing retailers to build customer profiles for personalized promotions and thus increase profit. A consumer cost study by Strader and Shaw (1999) comes to the same conclusion that there are great economic incentives for retailers and customers to participate in e-commerce despite its possible risks such as weak privacy and security. In sum, thanks to the economic benefit from reduced costs and the creation of a new revenue resource, e-commerce is not likely to fade out but grow exponentially.

According to a cross-industry study by Helander and Khalid (2000), the World Wide Web has already evolved as an important marketing medium. This study shows that the web has already become not only a marketing medium but also a resource for product-related consumer research. Another significant finding of this study is the rapid growth of commercial web sites, which are found to be doubling in number every 2 to 4 months. Developments in the field of multimedia software have increased the range of information that can be transmitted in various forms, indicating the potential of the Internet as an information source (Gurau, Ranchhod & Hackney, 2001). They point out that while consumer reactions to these retailers' new e-commerce offers will be fundamental to their success or failure, the potential consumer reactions are not fully understood or predictable. In the e-tailing era, Sharma and Sheth (2002) expected a change in online shopping with increased flexibility in manufacturing and increased personalization.

Personalization

Personalization has been defined in traditional brick-and-mortar retailing as a social interaction between service employees and their consumers (Mittal & Lassar, 1996). Because service exchanges between consumers and retailers entail one-on-one and face-to-face interactions, they can ultimately influence consumers' purchasing behavior (Wind & Rangaswamy, 2001). The quality of the interaction between service providers and consumers has been recognized as a factor influencing consumer satisfaction (Bitner et al., 1994; Solomon, Surprenant, Czepiel, & Gutman, 1985). Interactivity or interaction in online stores has the potential to be a more powerful influence on consumer satisfaction, in the sense that consumers are able to interact with a multidimensional construct; consumers can influence the form or content of the mediated environments using numerous technologies currently available for personalization. Hoffman and Novak (1997) have extended and developed the flow construct in the context of computer-mediated environments by identifying interactivity as one of the most important properties for navigation behavior. Interactivity is a process-related variable characteristic of communication and computer-mediated communications and identified as the key advantage of the online medium (Rafaeli & Sudweeks 1997). Since online personalization involves delivering customized content to individuals through various mediums such as web pages, e-mail, or push technology, rather than a person, personalized services are mostly based on machine interactivity (Chaffey, Meyer, Johnston, & Ellis-Chadwick, 2000).

In computer-mediated environments, interactivity has been described as the ability to both communicate with people and access information (Hoffman & Novak,

1996). However, the definition of personalization in e-commerce has been approached from a narrow definition of interaction such as the process of gathering and storing information about consumers, analyzing the information, and based on the analysis, delivering the right information to each consumer at the right time. For the e-tailers who practice personalization, the concept of personalization is customizing some features of service so that the consumer enjoys more convenience, lower cost, or some other benefit (Peppers & Rogers Group, 2002). The broader definition of interaction in personalization would include any aspect of e-marketing or service that is modified to an individual customer (Kalyanam & McIntyre, 2002). Dholakai, Zhao, Dholakai and Fortin (2000) suggest that the process of personalization incorporates customization and gives the system the ability to use information provided by the consumer and / or collected by the system to offer a custom-tailored online experience. The terms "personalization," "target marketing," "one to one marketing," and "individualized customization" are often used interchangeably (Goldsmith, 1999; Kalyanam & McIntyre, 2002). Mohammed, Fisher, Jaworski, and Cahill (2002) have made an effort to develop a clear conceptual personalization quotient based on the degree to which web sites exhibit the following features: a) customization – the system's ability to customize items by allowing individual users to set their own preference, b) individualization - the system's ability to customize itself to the user's exhibited behavior, and c) group characterization – the system's ability to customize itself to the user based on the preferences of other users with similar interests. A significant distinction in the concept of personalization in e-tailing lies in the system's capacity to personalize services rather than to provide social interaction or human contact. Another approach to personalization is to use information

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companies have discreetly gathered about consumers, such as their purchase history or their web-page viewing habits. According to the Jupiter Communications Reports (2002), the difference between customization and personalization involves explicit data versus implicit data: customization means giving users what they have told retailers that they want and need while personalization means anticipating what consumers want.

Personalization of the e-commerce shopping experience holds great promise for improving service quality , increasing both consumer satisfaction and the efficiency of the customer interaction, and engendering consumer loyalty. At the same time, personalization has proven to have great potential for transaction efficiency and providing suitable consumer product recommendations (Shaw, 2003) (Figure 2). Personalization of services may encourage customers to revisit an online store. Personalization represents a tool for maintaining company relationships with consumers by helping customers navigate through large amounts of content and numerous shopping options (Keen & McDonald, 2000; Windham & Orton, 2000; Nysveen & Pedersen, 2003). This promise is the outgrowth of recent technological advances which have made it possible for retailers to track customer wants and needs and to dynamically match collected information about consumers and products to consumer preferences in real time (Raghu, Kannan, Rao & Whiston, 2001). Many aspects of the effect of personalization on consumer behavior have been examined, such as consumer satisfaction, loyalty, salesperson, store image, and service quality (Suprenant & Solomon, 1987; Bitner et al., 1994; Bettecourt & Gwinner, 1996). By using available information about consumers, retailers target their customers and are able to reach them in the time and place they are most likely to purchase.

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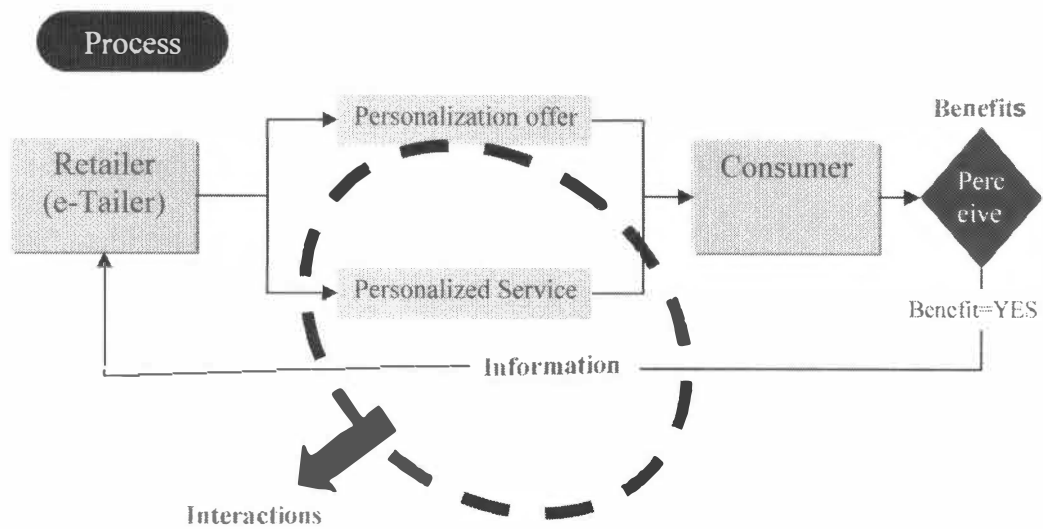
Figure 2.   Diagram for Personalization Process

In the era of e-commerce, the need to integrate the concept of personalization has been

identified by many scholars (Wind & Rangaswamy, 2001; Kalynam & McIntyre, 2002;

Mohammed et al., 2002). According to the study by Kalyanam and McIntyre (2002, p.

494), a new approach to personalization has been defined as follows: "customization"

refers to the system's ability to customize by allowing individual users to set their own

preferences and "individualization" refers to the system's ability to customize itself to the

user based on the user's exhibited behavior on the website.

Personalization Implementation Methods and Technologies

Personalization can be implemented, based on user profiles or on user recognition

by asking consumers about their preferences for services or products for the first time

when they visit the retailer's website (Figure 3). Technologies such as cookies, web-login file, or registration make it possible for e-tailers to offer services that are in accordance with the individual consumer's personal preferences (Nysveen & Pedersen, 2003). Thanks to personalization in e-commerce, e-tailers offer information and services that are more relevant to their individual consumer's preference and profiles. Various types of personalization implementation exist, and classification of personalization implementation types has been approached in many ways. Some of the most common are rule-based filtering, based on user profiles or communities, context-based matching, and category-based matching, in which content producers classify their content based on certain attributes, users rate their priorities in terms of the same attributes and an agent steers users to an appropriate content (Raghu et al., 2001). However, before any personalization can be done, it is necessary to know consumers preferences. Personalization technologies in e-tailing are possible through the collection of valuable information from the users implicitly as well as explicitly (Yen & Kong, 2002). As the e-commerce definition denotes, analysis of this information from consumers can allow e-tailers to develop consumer profiles to know and serve the consumers better. According to the study by Yen and Kong (2002), the research for information access on the Internet can be divided into four groups based on their application and scope. The first group is concerned with the collection of user information on the Internet. The second group provides intelligence browsers and agents to support user-navigation on the Internet based on user preference. The third group is website customization based on user access information. The last group is based on user access information.
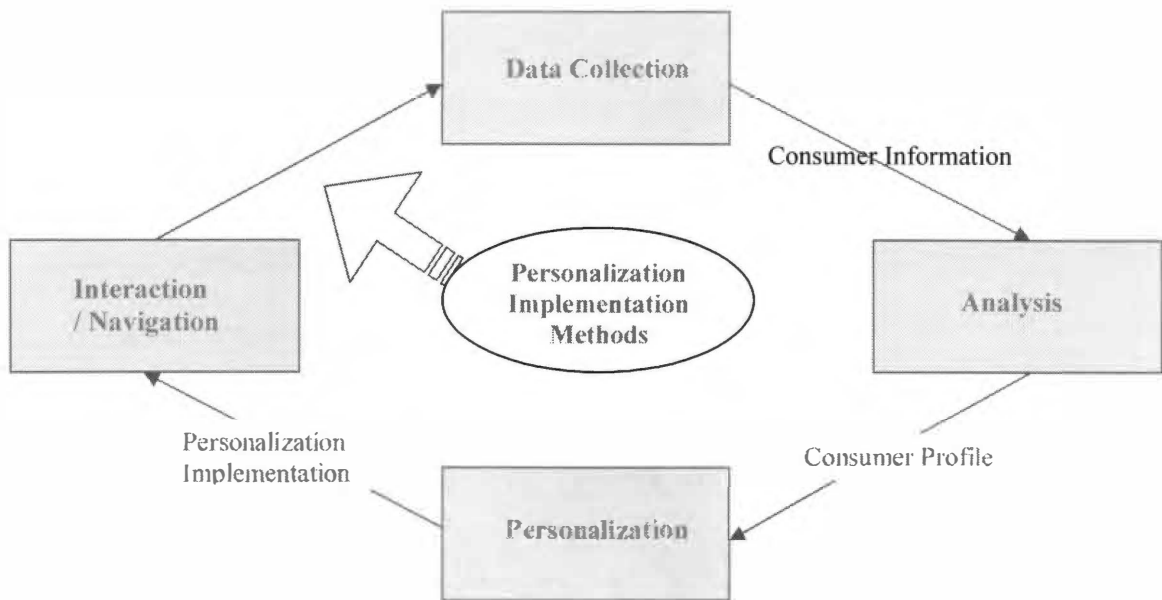
Figure 3.   Personalization Implementation Method in the System

Perkowitz and Etzioni (2000) have suggested three different approaches for information access for personalization implementation in their research. Their study suggests personalization can be implemented, first, for adaptive websites for improvement of site organization based on user access logs, second, for page-gathering based on the clustering algorithm, processing the access log and measuring the co-occurrence frequencies between pages to generate a similar matrix and corresponding graph, and finally, a clusters method which eliminates overlap. Wang, Siew & Yi (2000) proposed a personalized product information filtering model to filter and rank product information with linear functions on the user preference so that only matched items are presented to the user for selection by updating the user preference with inductive learning methods in the selection process. A study by Delicato, Pirmez, & Carmo Csta (2001)

identifies web technologies that make personalization possible as follow. First, HTTP requests are sent from a computer to a server asking for a file. The HTTP requests contain information about the IP number and host requesting file, the software that is sending the file. Thus the file makes personalization possible by providing e-mail addresses in the header of HTTP requests and cookies. Second, every time a consumer surfs an online store and requests information, the response may contain a cookie. A cookie is a small piece of information stored on the consumer's computer. Whenever the consumer revisits the same store, the retailers' websites will recognize the consumer thanks to the cookie. Next, user logs are used to analyze click-patterns both on an individual basis and from aggregated user data. Every HTTP - request including cookie information is stored in a log file by the server and those log files show not only how consumers use the online service, but also what individual consumers are interested in and what they do. Finally, user input is the most common way to get to know customers and often takes the form of personalized services available only to members, thus rewarding those who submit the information. Also, when a purchase is made online, a great deal of information is required from the consumer. The consumer is asked to reveal preferences or sensitive information, and this knowledge is used to customize the web experience. The information provided by the consumer is used to create better profiles, thus increasing the value of the customer database.

Personalization Features

Since the meaning of personalization in e-tail sites has a different definition from traditional retail formats, the features suggested in this study may not neccesarily be

regarded as personalization features in the traditional sense. However, the ultimate goal of personalization features is the same as it relates to consumer benefits (Wind & Rangaswamy, 2001), consumer revelation of personal information for personalization implemetation (Goldsmith, 2002), and consumer interaction (Bittner et al., 1994). The foundational concept of personalization is to identify individual customers and to collect information (Peppers & Rogers, 1997). Personalized features for the implementation of personalization could be any form of customization that occurs because of specific recognition of given consumers (Kalyanam & McIntyre, 2002).

IQVC, the web version of the successful QVC shopping channel, has been evaluated as one of the most successful online stores, having set new standards with their personalized online business. Within 18 months of opening, the site reached $2 million in monthly sales. A large part of its growth potential stems from the use of interactivity, especially with the appearance of a personalized website where consumers can dictate the kinds of products they want to have offered using intensive personalized shopping selection aids such as reviews from experts, a frequently-asked-questions section, recommendations and knowledgeable customer service online (Kinkella, 1999). The most significant efforts of personalization of IQVC have been identified as their "Q member number", which is assigned to consumers the first time an order is placed and allows consumers to expedite and automate future orders (Kinkella, 1999). Recommendations, made on products based on individual consumer's preferences in the online store, are suggested as one of the promising Internet marketing areas to explore by Rowley and Frances (2001).

Customer service is identified as one of the key personalized features in retail or service transactions because it provides consumer benefit and interaction. Positive personalization from retail employers and service providers can provide customers with personally rewarding shopping and service experiences (Mittal & Lassar, 1996). Customer service is often identified as a variable in service quality studies of responsiveness and contributes to service quality evaluations and customer patronage decisions. Also, customer service in an online store is an important factor for consumer choice regarding product availability, service plans, pricing, and promotions (Levy & Weitz, 2001).

Gomez.com is an online-store research company that conducts consumer evaluations of online sites. The company measures the performance of online stores and assigns ratings based on various criteria. The categories that are measured by the company are broadly classified into certain sub categories. Among the sub categories, incentives for consumers such as a loyalty program (mileage and points), e-mail annoucement of promotion and price changes (personalized e-mail by consumers' setting), and wish lists (listings of products and services that individual consumers may be interested in) are features that increase personalization in online store evaluations. According to an empirical study, the reward program is one of the most successful personalization features for retailers to build a more loyal following and for developing long term relationships with customers (Agrawal, Kumaresh & Mercer, 2001).

Store search engine and comparison shopping features are discussed in marketing terminology as Internet Shopbots (shopping robot). Internet shopbots are automated tools that allow consumers to search easily for prices and product characteristics from online

retailers by providing this benefit to the consumers at the expense of the retailers (Smith, 2002). A search engine is defined as a retrieval service to consumers, consisting of a database describing mainly resources available via online stores for personalized service such as personalized recommendations for individual consumers from other consumer databases (Kim, Kim & Kumar, 2002). Several articles have argued that the in-store search engine is an efficient tool for personalization since it provides consumer benefits (Greenwald & Kephart, 1999: Smith, 2002; Pedesen & Nysveen, 2001). Pedesen and Nysveen (2001) have suggested that it may be possible for shopbots to improve interfaces by learning customer preferences for product characteristics and by personalizing the display and ordering of price comparison tables in response to these characteristics.

Customer identification is another important personalization feature that online stores can take advantage of (Kalyanam & McIntyre, 2002). Retailers can identify consumers who make repeat visits to their websites and then deliver website content specifically targeted to those individuals (Hallman, 2001).

Choice in product delivery services is another personalized benefit that online stores can provide (Goldsmith, 1999). In online transactions, consumers can choose how they wish to receive a product: by mail, delivery via specific service provider, store pick-up, e-mail notification, or tracking and confirming the order in one click. Delivery-related features in online stores have been suggested as a promising significant personalization feature for e-tailers (Hof, 1998).

The option of storing personal or financial information such as size, weight, purchasing history, or payment options has been identified as yet another method to implement personalization (Raghu, et al., 2001). E-marketers.com (2002) suggests that

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voluntary information storage is a desirable personalization feature that offers the customer an overall relationship with the organization that is valuable and compelling.

A review of the literature shows that problems have been identified related to the lack of a common vocabulary regarding personalization features and the inability to define and compare personlized features in both e-commerce and traditional retail stores. However, any online feature that increases consumer benefits by individualizing services, using consumer information and offering interactions with consumers can possibly qualify as a personalization feature for this study.

The Prospects and Challenges of Personalization: Privacy and Security

Goldsmith (1999) has argued that the most important new idea in marketing is personalization. Goldsmith regards personalization as the pinnacle of the development of marketing thought and practice: from mass marketing to market segmentation to niche marketing to micro marketing to mass customization , with personalization as the most recent innovation. He emphasizes personalization as a very important element of the overall marketing strategy that should be jointly analyzed for product development and market analysis for consumer segmentation. Another study by Ang and Leong (1996) finds that a higher level of service customization by retailers would mean more options for consumers as well as allowing greater discretion to the retailers in service delivery. The power of personalization in online environments is to tailor itself to each consumer, and a recent report suggests that personalization may yield improved sales and profits to e-tailers and may be the feature of online stores most desired by e-tailers (Hof, 1998; E-tailing Group Inc., 2003).

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Issues of privacy and security generate great concerns from consumers in an e-tailing environment. Most e-tailers' sites have privacy policies and publish security statements, documents describing how they collect information, what it will be used for and why they need it, in order to relieve consumers' concerns about privacy and security in their transactions.

In order to make e-commerce work for consumers, adequate security for transactions must be ensured. Security and privacy have been a central concern both for consumers and retailers. In the early stage of e-commerce development, some determinants of the security environment were identified: prior arrangements, tokens, encryption, and electronic cash (Rowley, 1996). The major privacy concerns have been identified by several researchers: the use of personal information freely given by individuals to business in the process of making purchases, transfers of personal information, and access to private information (Peterson, 2001; Prabhaker, 2000; Gurau, Ranchhod, & Hackney, 2001). Prabhaker (2000) has identified two asymmetric interests for individuals versus companies regarding consumer concerns about privacy and security on the Internet: economies of scale and economies of sharing. Research has shown that the intention to purchase products is inversely related to the amount of perceived risk associated with the purchase (Sharma & Sheth, 1983).

The issue of cookies has been discussed by many researchers (Peng & Cisna 2000). A cookie is an electronic piece of data or record transmitted by a web server to a client computer and saved on the hard drive in a text file (Peng & Cisna, 2000). The cookie has been an issue because of its contradictory implications for consumer privacy and security. From a positive point of view, cookies can make shopping more convenient

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and personal by memorizing customers' personal information and thus reducing the number of clicks for each purchase. Cookies can also be very useful to retailers, allowing them to collect consumer data and build their own databases for customer management (Peng & Cisna, 2000). However, as Peterson (2001) reports, privacy is not guaranteed or technically verifiable in the present web environment with the cookie technology. Researchers have found that consumer behavior on the web site can be easily traceable by the cookies and can be sold to third parties without consumers' knowledge.

Personalization raises a number of challenges, including issues related to obtaining information from consumers. Privacy is essentially the question of the individual's right to anonymity and control over personal information. Consumers' personal information is sometimes collected with consumers' own acknowledgement, but then revealed to third parties without consumers' consent (Hallman, 2001). Privacy and security are important for e-tailers who are pursuing greater personalization of services, because e-tailers' requests for sensitive information such as social security numbers, credit card numbers, home address, phone number, health information, and account numbers for financial institutions could frighten potential customers and hinder successful transactions in online stores. Furthermore, negative experiences related to privacy and security could lessen future intentions of consumers' to purchase online (Phelps, D'Souza & Nowak, 2001). Another important aspect of information privacy is the consequences of consumer concerns, because understanding the behavioral reactions that come from privacy concerns is as important as understanding the antecedents of such concerns. Milne and Boza (1999) have empirically examined the potential consequences of privacy concerns and related factors on purchasing behavior and the purchase decision

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process. Salisbury et al. (2001) have found from empirical tests that usefulness, ease of navigation and security are salient beliefs about online shopping and that an increased level of perceived online security leads to greater intention to purchase products on the web.

The degree of consumer concerns about security may be defined as the extent to which they believe that the World Wide Web is secure for transmitting sensitive information (Salisbury et al, 2001). Perceived Web security is relevant to introduce to the study because the purchase of products using personalized services on the Internet may involve a greater degree of risk than the purchase of products without such services. When one purchases products online, there may be a perception of the risk involved in transmitting sensitive information. In the case of purchasing products online, it is possible that potential adopters may perceive that their privacy or security information may be at risk, and that they have no control over this. Even though potential Web shopping adopters might not regard the risk as being all that high, the extreme risk involved with having one's sensitive information stolen by a third party agent may cause potential users of personalized services to perceive a greater risk than is actually present (Salisbury *et al*, 2001). According to a recent study (Hallman, 2001), online consumers in the United States overwhelmingly want the presumption of privacy when they go online, and many consumers in an online store do not know the basics of how their online activities are observed. The results show that 54 percent of online consumers believe that tracking is harmful to their privacy, 24 percent of them have provided false names or personal information to avoid giving websites real information, and 94 percent of American consumers want privacy violators to be disciplined. In spite of consumer

concerns about privacy and security, 48 percent of Internet users have bought something online with a credit card (Internet Life Report, 2000). Another study on personalization investigated by Yen and Kong (2002) suggests that information overload and access problems on the Internet due to personalization are critical factors for consumer frustration with online shopping, and that system redesign with implementation should follow. An experimental study by Huffman and Kahn (1998) reports that retailers, even in traditional retail settings, who implement various strategies of mass customization for consumers need to ensure that consumers are not confused. The study found that consumers are likely to be more satisfied and perceive less complexity in the choice set when they are asked to indicate their preferences explicitly. This finding has significant implications for and challenges to personalization in the e-tailing environment. Even though personalization may promise great profits to e-tailers, there are few theoretical models that can be used to acquire and analyze preference information and customize such information gathering experiments. At the same time, there is limited knowledge about the characteristics of the information acquisition process itself (Raghu et al., 2001).

Consumer Attitudes and Intentions in an E-commerce Context

Attitude can be defined as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly & Chaiken, 1993) and as a learned predisposition to respond to an object or class of objects in a consistently favorable or unfavorable way (Gordon, 1935). Attitudes are formed based on some previous experience with or information about an object, and then reside in the mind, causing responses in future behavior (Sheth & Mittal, 2003). The Fishbein Model

is the most widely accepted means of explaining and measuring attitude and behavioral intentions and its measurement is widely accepted.

Non-store retailing studies of the role of attitude (Donthu & Gilliland, 1996; Shim & Eastlick, 1998) have shown that a positive attitude towards a non-store shopping environment is a significant predictor of the adoption of the new shopping environment. In the fields of Internet and online shopping, a prospective consumer's attitudes toward using the new technology have been shown to be a major determinant of actual use (Davis, 1989). Helander and Khalid (2000) have confirmed that a positive attitude towards e-commerce has a significant influence upon usage of the Internet for purchasing products. However, in the e-tailing area, emphasis has been placed on perceived usefulness (Salisbury et al., 2001; Fenech & O'Cass, 2001) as a significant contributor to attitudes and thus adoption of new technology as a new retailing channel. It appears that if system users believe that a new system will enhance the performance of a task, their perception of its usefulness is likely to be higher and they are likely to hold a more positive attitude toward the system than non-users (Davis, 1989). In the theory of reasoned action, subjective norms are difficult to isolate from behavioral intentions (Salisbury et al., 2001). A technology acceptance model has been developed by Davis (1989) for the purpose of providing an explanation of computer acceptance that is in general, capable of explaining user behavior across a broad range of end-user computing technologies and user populations, while at the same time being both parsimonious and theoretically justified. Basically, the technology acceptance model explains that perceived usefulness and ease of use influence an individual's intention to utilize information technology by defining perceived usefulness as the degree to which a person

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believes that using a particular system will enhance his job performance and by defining ease of use as the degree to which a person believes that using a particular system will be free of effort. Much research has been conducted based upon the technology acceptance model, and the general framework of the technology acceptance model has also been used to predict user intentions with various technologies such as electronic mail, text editors, spreadsheets, voicemail, word processors, and data management systems (Davis, 1989; Adams, Nelson & Todd, 1992; Hendrickson, Massey, & Cronan, 1993; Szajna, 1994; Chin and Todd, 1995; Salisbury *et al.*, 2001).

Goldsmith (2002) has found that general innovativeness, innovative pre-deposition toward buying online, and involvement with the Internet are important predictors of consumers' online purchasing intention. Teo, Lim and Lai (1999) have shown that an individual's perception of the usefulness of online shopping influences the adoption of that shopping environment. Therefore, it is anticipated that if Internet users have a higher perception of usefulness and positive attitudes toward online shopping, they also will have a greater likelihood of being adopters of this retailing environment (Fenech & O'Cass, 2001). Perceptions about using the Internet for online shopping will lead to the formation of attitudes that will influence intentions to purchase online (Salisbury et al., 2001).

The formation of perceptions for attitude can be transferred to previous online experience, since past behavior is a good predictor of future behavior. In the Theory of Planned Behavior (Azjen, 1991), past behavior is not treated as a predictor for behavioral intention; however, many researchers have asserted that inclusion of past behavior in a model significantly improves the prediction of behavior (Bentler & Speckart, 1981;

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Sutton & Hallett, 1989). Past online purchasing experience has been demonstrated to have a significant direct influence on intentions to use online shopping (Shim et al, 2001). Shim et al. have also confirmed that past online experiences directly and indirectly decrease consumers' levels of perceived risk associated with online shopping, leading to future continued online behavioral intentions. Extensive research in marketing, retailing, and social behavior suggests that prior experience or pre-existing states play an important role (Mano, 1999; Eastlick, 1996). In the electronic format of retailing, previous experience in non-store retailing has a significant positive effect on the acceptance of interactive online shopping formats (Liang & Huang, 1998; Eastlick, 1996; Weber & Roehl, 1999). The research on moderating and predicting the behavioral consequences of of pre-existing experiences has found that it may effect emotions (Mano, 1999), mood, quality, and involvement (Swinyard, 1993), persuasion (Bless, Schwarz & Mohr, 1990), and product searching (Shim et al., 2001).

CHAPTER III

METHODOLOGY

The primary purpose of this research has been to investigate consumer attitudes toward personalization features and intention to purchase. To accomplish this end, the study has three objectives: (1) to identify the structure of consumer intention to make product purchase using personalization features. To compare intention to purchase, consumer attitudes toward personalization features were measured by investigating the belief (B) and importance (I) of each feature to respondents; (2) to investigate overall online components of personalization features and to develop categories of features that might increase or decrease consumer intentions to purchase online; (3) to observe the relative importance of attitude, previous purchase, and privacy and security concerns in influencing consumers' intentions to purchase using personalization features.

To test the model, structural equation modeling has been utilized with the AMOS 4 computer program. Structural equation modeling is among the most powerful instruments of theory-guided data analysis in marketing and consumer research because structural equation models allows researchers to specify the exact relationship between the common factors and items used to measure them as well as linkages among the factors (Kim, Kim and Kumar, 2003; Davies, Goode, Mazanec & Moutinho, 1999; Ryan, 1982).

Survey Instrument

The instrument was developed by the researcher, utilizing and adapting previous behavioral intention models and other e-commerce consumer behavioral studies. The survey was developed in HTML format using Microsoft's FrontPage® (Appendix A). The survey questionnaire file was transferred to the survey company's website (Surveypro.com) using a File Transfer Protocol (FTP). The final administration of the survey met several objectives (O'cass & French, 2003): all respondents could be contacted through a single common medium, the questionnaire 's Hypertext Markup Language (HTML) format could be transparently incorporated into the questionnaire to prompt respondents to review questions with incomplete or dual responses, the survey was easy to read, complete, and return, so as not to overburden respondents, and the data were easily transferred to a database for analysis without added data entry.

The survey was organized into six sections, grouped by research questions. Respondents could see only one section in one page and proceeded after completing a section by clicking a "continue" button. Also, the survey included a statement guaranteeing the respondent's anonymity and specifying that only those respondents who completed the survey could participate in the hundred dollar cash drawing at the end of every page, which was incorporated to increase the response and completion rate. Sections were organized as follows: The first section was a consent statement providing information about the research and explaining the cash- drawing rules. The second section addressed general questions regarding online shopping from questionnaires given at the Georgia Institute of Technology (GVU's WWW user surveys, 1998). These included questions on frequency of online purchases in the previous 12 months, online

spending, comfort with online shopping, number of online stores where the respondent had passwords and was registered, and estimated percentage of the respondent's purchases that were made online. The third and fourth sections were designed to measure attitudes toward personalization features. As previously discussed, attitude was defined as consisting of beliefs about the personalization features and about the importance of those features. The third and fourth sections had additional questions at the end of the sections regarding respondents' attitudes toward the privacy and security issues. The attitudinal questions used a 7 point Likert scale with responses ranging from 'very unimportant' to 'very important'. The fourth section was another set of attitudinal questions probing respondents' beliefs on each of the 13 personalization features. These attitudinal questions for belief used a 7 point Likert scale with responses ranging from 'disagree' to 'agree'. In the fifth section, intention to purchase using each personalization feature was measured using a 7 point Likert scale with responses ranging from 'highly unlikely' to 'highly likely'. Finally, general demographic questions asked for gender, marital status, age, education, income and state of residence. HTML drop boxes and bubble-clicks were used to facilitate fast and convenient responses. Privacy and security concern questions were asked in the general, attitudinal, and intentional sections.

The design of an online survey poses an unusual challenge. Instead of designing at the cutting edge of the evolving technology, online survey writers must hold back (Dillman, 2000). Based on principles for constructing online surveys established by Dillman (2000, p. 352 - 398), the following recommendations have been followed:

a. Introduce the online questionnaire with a welcome screen that is motivational, emphasizes the ease of responding, and instructs respondents about how to proceed to the next page.

b. Choose for the first question an item that is likely to be interesting to most respondents, easily answered, and fully visible.

c. Present each question in a conventional format similar to that normally used on paper self-administered questionnaires.

d. Restrain the use of color so that figure/ground consistency and readibility are maintained.

e. Avoid differences in the visual appearance of questions that result from different screen configurations, operation systems, browsers, and partial screen displays.

f. Do not require respondents to provide an answer to each question before being allowed to answer any subsequent ones.

g. Exercise restraint in the use of question structures that have known measurement problems on paper questionnaires.

The survey was thus designed using light background with black letters and a font size of 12. Most of the sections were designed for full-screen display of questions to avoid the need to scroll down the page, and drop-down boxes were used only in the demographic section for state of residence and education. All other questions used a radio-button. A progress indicator was also provided, to let respondents keep track of

where they were in the survey. Finally, the cash drawing for completing the survey was emphasized at the beginning of every section.

Before the survey was distributed, the instrument was refined in a pretest process. The survey was pretested by faculty and graduate students in the Retail and Consumer Sciences program at The University of Tennessee, who were consulted about the ease of response, time of response, and appropriateness of vocabulary (Dillman, 2000). Improvements were made to the instrument such as deletion or addition of items, rewording of items and directions, changes in the structure of some questions and corrections of typing errors and misspellings.

Personalization Features for Measurement

The model for this study has four factors: attitudes toward personalization features, previous purchases online, consumer concerns on privacy and security, and purchase intentions. The two independent factors (i.e. previous purchases online, consumer concerns on privacy and security) are linked to the other factors by a series of regression paths, as indicated by the unidirectional arrows (see Figure 1, p.8). Attitudes toward personalization features and purchase intentions are identified as dependent variables in the model and thus have one way arrows pointing to them. Fishbein and Middlestadt (1995) suggest that it is an incorrect measurement of attitudes if researchers develop a set of attributes based on their own intuition or knowledge. The study measured the following items of personalization features in online stores based on the review of literature in Chapter 2.

1. Comparison shopping features according to shopper's preferences.

2. In-store search engines for consumers' own needs.

3. Shopping selection aids such as product selection guides, reviews from expert, frequently asked question (FAQ) menus, or cross recommendations.

4. Login and password for site entry and final transaction by registration

5. Wish Lists that organize a personal list of preferred products and their changing features such as price and promotion

6. Reward programs such as mileage and points

7. Personalized e-mail alerts for promotions and events

8. Personalized Web pages of the consumer's own choice

9. Automatic identification or recognition of consumers without login

10. Customer service in an online store with 800 numbers or online chatting with customer service representative for personal immediate needs

11. Order and Delivery tracking

12. Options for personal information to be saved

13. Options for financial information to be saved

Sample and Data Collection

The sample of 7,000 used for this study was randomly drawn from a database of 500,000 adults who had made at least one online transaction (see Table 1). The permission-based e-mail list was purchased from an e-mail list broker who had a nationwide data base.

Table 1. Sample and Data Collection Procedure

Sample Frame (U.S. residents who are18 or over and have at least online purchase experience in the SurveyPro database)	Random Sample (E-mail survey distributed)	Respondents	Usable Sample (Data Cleaning)
500,000	7,000	1212	1140

The broker has partnerships with more than 50 online retail stores with credit card information screening. The survey company (http://www.surveypro.com) also provided IP addresses to prevent double-counting of survey respondents. The validation error was minimized. Since the survey targeted only people who use electronic mail or the web, the lack of coverage error was not assumed to be a problem (Dillman, 2000). Data were collected using a self-administered e-mail survey by purchasing the service from a professional online survey company. The e-mail invitations were distributed to 7000 online consumers who fit the criteria of the study. The invitation included the URL address and statement of the study's purpose. The time frame to collect data was a week. A total of 1212 responses were received, and the returned questionnaires were screened for completeness. 1140 responses were usable after data cleaning of missing data and sections. The response rate was 16.3 percent.

Data Analysis

Statistical analyses were completed using the statistical software SPSS version 10 and AMOS version 4.0. The proposed model of attitude toward personalization features and intention to purchase was tested with the Structural Equation Model (SEM) because SEM can be used to test the paths implied by the hypotheses developed. Because structural equation modeling specifies the number of components and items to be analyzed, SEM made it possible to specify the exact relationship among the common factors and the features used to measure them as well as the linkages among the factors (Salisbury et al., 2001). Also, structural equation models belong to the most powerful instruments of theory-guided data analysis in marketing and consumer research (Davies et al., 1999) and thus were appropriate to the study. First, attitudes and intentions have many facets and cannot be directly observed but only be measured through observable measures or indicators that vary in their degree of observational validity (Kim et al., 2003). With the multiple predictors in the model, SEM's focus on construct operationalization is probably its most distinguishing feature for this study. Second, SEM is covariance-based rather than variance-based. The estimation techniques used in SEM attempt to minimize a function that depends on the differences between the variance and covariance implied by the model and the observed variance and covariance (Steenkamp & Baumgartner, 2000). Finally, SEM conveys two important aspects of the procedure for the behavioral intention model: first, that the causal process under study is represented by a series of structural equations, and second, that these structural relations can be modeled pictorially to enable a clear conceptualization of the theory underlying the study (Byrne, 2000).

The full measurement models with latent variables as well as the structural equation model were evaluated using common procedures of examining the path coefficients. Goodness of fit was determined using the following measures: the Chi-square, Root Mean Square Error of Approximation (RMSEA), Adjusted Goodness-of-Fit Index (AGFI), the Goodness-of-Fit Index (GFI) and the Normed Fit Index (NFI). The guidelines for goodness-of-fit are a value less than .05 for the RMSEA, higher than .90 for the GFI and the AGFI. The NFI ranges from 0 to 1 where scores approaching 1 indicate a better fit. The Chi-square, the GFI, and the RMSEA are considered as basic measures of absolute fit. Because of the sensitivity of the Chi-square to the sample size and the number of indicators, the GFI and RMSEA were also included.

CHAPTER IV

ANALYSIS AND RESULTS

The purpose of this chapter is to present the data analysis of the study and its results. First, characteristics of the final sample with descriptive statistics on general questions regarding the online shopping of respondents are presented. Second, the personalization features are factor analyzed to categorize the personalization feature into categories depending on consumers' attitudes toward personalization features and intention to purchase. Third, the model is tested utilizing structural equation modeling with measurement of attitude and intention to observe the relative importance of attitude, previous purchase, and privacy and security concerns in influencing consumer intention to purchase using personalization features.

Sample Characteristics

The average income of the sample was $41,886 and the average age was 41.8 years old , with a range from 18 to 70 years old. For marital status, 55.7 percent were married while 33.6 percent were single. Forty-seven percent of respondents were high school graduates, 28 percent held bachelors' degrees and 16 percent held vocational or technical degrees. The majority of the respondents 73.8 percent were female (see Table 2). According to the Harris Interactive Poll (2002), the gender ratio of consumers online is 49 percent male and 51 percent female (2002).

Table 2.   Sample Characteristics

Characteristics	Number of Response	%
Gender		
Male	296	26.2
Female	832	73.8
Education		
High School	524	46
Bachelor's Degree	326	28.6
Master's Degree	71	6.2
Ph.D.	20	1.8
Vocational/Technical	183	16.3
Marital Status		
Single	373	32.7
Married	640	56.4
Others	121	10.7

*Missing values are not included

MANOVA tests were performed for possible differences between female and male respondents (see Table 3). The results showed no difference due to gender in behavior in this model. The results support findings by Donthu and Garcia (1999) that there are no gender differences between male and female shoppers as well as survey results by Nua Internet Surveys (2000) which suggest that almost two-thirds of online shoppers are women.

Table 3. MANOVA Test for Possible Gender Difference

Effect		Value	F	df	Error df	Sig.
Intercept	Pillai's Trace	.990	136 4.579	62.0	848.0	.000
	Wilks' Lambda	.010	136 4.579	62.0	848.0	.000
	Hotelling 's Trace	99.769	136 4.579	62.0	848.0	.000
	Roy's Largest Root	99.769	136 4.579	62.0	848.0	.000
GENDER	Pillai's Trace	.102	1.548	62.0	848.0	.005
	Wilks' Lambda	.898	1.548	62.0	848.0	.005
	Hotelling 's Trace	.113	1.548	62.0	848.0	.005
	Roy's Largest Root	.113	1.548	62.0	848.0	.005

a Exact statistic
b Design: Intercept+GENDER

Characteristics of Respondents on General Online Shopping

The characteristics of respondents with regard to general online shopping are presented for descriptive purposes and to provide a context for further analysis. In response to a question about the dollar amount of online purchases made in the past 12 months (i.e. How much would you estimate you have spent shopping online in the past 12 months), the largest percentage (26.1%) of respondents said they had made purchases online in the amount of less than $100 followed by 24.7% that spent more than $500, $101 - $200 (16.7%), $201 - $300 (14.1%), $301 - $400 (10.3%), and $401 - $500 (7.9%). For percentage of overall spending online relative to traditional retail stores (i.e. On average, what percentage of your overall purchases are made online?), the majority of respondents (64.2 %) used an online shopping channel for less than 20 percent of their purchases. This was followed by 18.9 % who made 21 to 40 percent of their purchases online, 9.8 % who made 41 to 60 percent, 4.7 % who made 61 to 80 percent, and 1.7 % who made 81 to 100 percent of their purchases online. Table 4 shows general characteristics of the respondents' online shopping behavior. For detailed descriptive statistics refer to Appendix B. In terms of usage of the Internet for shopping, more than half of the respondents perceive themselves as light Internet shoppers, followed by moderate (34.6%), heavy (7.6%), only Internet (0.7%) and none of these (2.6%). In response to a question about comfort with online shopping, more than 75% of the respondents said that they felt very comfortable (36.6 %) or somewhat comfortable (38.7%), while 13.5% of respondents feel uncomfortable.

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Table 4. Characteristics of Respondents' Online Shopping

Frequency	How many times have you purchased products online in the past 12 months? (%)	How many online retailers have you purchased from in the past 12 months? (%)	How many online retailers have you registered for purchases of services? (%)	How many different login & passwords do you have for your online shopping? (%)
1 – 3	31.5	50.4	41.9	61.5
4 – 6	23.4	29.6	26.4	20.4
7 – 9	14.2	10.2	11.4	7.1
10 – 12	11.6	6.3	9.7	4.4
13 – 15	2.8	0.6	2.1	1.7
More than 16	16.3	2.6	8.1	4.8
No Response	0.2	0	0.6	0.4

Reliability Analysis

Before the statistical analysis is discussed, the reliability of each measure should be addressed. The five scales were analyzed to determine their reliability: privacy and security concerns, previous purchase experience in an online store, attitudes toward personalization features for belief, attitudes toward personalization features for importance, and intentions to purchase using personalization features. The Cronbach's coefficient alpha for all scales were suitable (see Table 5). Refer to Appendix C for detailed reliability analysis results.

Table 5. Reliability of Scales

Scale	Number of Items	Cronbach's Coefficient Alpha
Privacy and security concerns	8	0.79
Previous purchase experience in an online store	5	0.8289
Attitudes toward personalization features for belief	13	0.8785
Attitudes toward personalization features for importance	13	0.8755
Intention to purchase using personalization features	13	0.8755

Measurement of Attitudes and Intentions

To obtain a measure of attitude, the score for each of the 13 belief items for the personalization features was multiplied by the correspondent importance on personalization features score for each belief item. In the Fishbein model, attitude is the sum of weighted consequences of belief (B), the object has a certain consequence by using it or purchasing it and the importance of the object (I) via evaluation of the object. So the formula can be demonstrated as follows:

$$A = \sum BI$$

where A is the overall attitude toward personalization feature

B is the belief that any personalization feature has certain consequences by using it

I is the evaluation of that consequence that people think it is important or not for their shopping online

Table 6 illustrates the scores of importance, belief, and attitude toward personalization features. The overall mean for belief was 4.22 and importance was 4.36. Among the attitude factors, the personalization feature believed in most strongly by respondents was "order and delivery tracking service" (M = 6.11), followed by "customer service" (M = 6.02), "search feature" (M = 5.74), "product selection aids" (M = 5.2), "comparison shopping feature" (M = 5.13), "option to save personal information" (M = 5.07), "login and register" (M = 4.83), "reward program" (M = 4.79), "promotion notification" (M = 4.41), "recognition of name" (M = 4.28), "option to save financial information" (4.24), and "given ability of personalizing page for my own preference" (M = 4.02) .The lowest was "wish list" (M = 3.44). The most important personalization feature was "order and delivery tracking service" (M = 6.35), followed by "customer service" (M = 6.17). Again, the lowest feature was "wish list" (M = 3.71), after "option to save financial information" (M = 4.06). Principal component factor analysis with varimax rotation was employed to identify the underlying dimensions of the group of personalization features. Only those features with an eigenvalue of higher than 1.0 and a factor loading of 0.5 were retained. Factor analysis produced three factors of attitudes toward personalization features and accounted for 64.93 percent of total variance (See Table 7).

Table 6. Descriptive Statistics: Attitude toward Personalization Features

Personalization Features	Attitude	Belief	Importance
Order and Delivery Tracking	39.55	6.11	6.35
Customer Service	38.052	6.02	6.17
Search Features	34.78	5.74	5.89
Comparison Shopping Features	29.62	5.13	5.51
Option to Save Personal Information	27.90	5.07	5.15
Reward Program	27.29	4.79	5.3
Product Selection Aids	26.04	5.2	4.84
Login & Register	25.95	4.83	5.03
Promotion Notification	22.43	4.41	4.61
Recognition of My Name	20.94	4.28	4.4
Option to Save Financial Information	20.24	4.24	4.06
Given Ability of Personalizing my own page preference	19.39	4.02	4.38
Wish List	15.11	3.44	3.71
Overall Mean	23.15	4.22	4.36

Table 7. Principal Component Analysis with Varimax rotation for Attitude toward Personalization Features.

	Implicit implementation	Explicit implementation	Permission based implementation
Component	Core function of retail personalization	Target marketing of interactive personalization	Value added Convenience
Search Features	.852	.167	2.717E-02
Customer Service	.775	.108	.217
Order and Delivery Tracking	.762	5.511E-02	.281
Comparison Shopping Features	.727	.242	1.754E-03
Product Selection Aids	.592	.438	.103
Promotion Notification	.215	.765	8.248E-02
Given Ability of Personalizing page my own preference	.154	.747	.380
Wish List	-3.251E-03	.733	.220
Reward Program	.333	.686	-2.705E-02
Recognition of My Name	.148	.561	.532
Login & Register	.342	.513	.339
Option to Save Personal Information	6.060E-02	.145	.854
Option to Save Financial Information	.256	.228	.840

a. Rotation converged in 6 iterations.

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Factor 1 was labeled as "core function of retail personalization for implicit implementation" which includes 5 personalization features: search features, customer service, order and delivery tracking, comparison shopping feature, and production selection aids. Factor 2 was labeled as "target marketing of interactive personalization for explicit implementation" and consisted of 4 personalization features: promotion notification, given ability of personalization, wish list, reward program, recognition of name, and login and register. Finally, factor 3 labeled "value – added convenience for personalization" included 2 personalization features: option to save financial information and option to save personal information.

Test of the Proposed Model

To test the hypotheses and analyze the features that measure each latent variable, the measurement model assessed how privacy and security concerns, previous purchases, attitudes, and intentions to purchase are measured in terms of observed indicators. The structural equation model was applied to the causal relationships among these latent variables to test the hypotheses. The results of the measurement model suggest coefficients of attitude toward personalization features were significant at the 0.001 level for attitude toward personalization features, privacy and security concerns, and intention to purchase (Appendix D). Consequently, the measurement models in the proposed model were deemed valid in testing hypotheses for a structural equation model. As indicated in Chapter 3, the guidelines for goodness-of-fit were a value less than .05 for the RMSEA, and higher than .90 for the GFI and the AGFI. The NFI ranges from '0 to 1', where the value closer to 1 indicates a better fit. The Chi-square, the GFI, and the

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RMSEA are basic measures of absolute fit because of the sensitivity of the Chi-square to the sample size and the number of indicators.

In the structural equation model, all observed variables are assumed to be normally distributed. After the first run of the structural equation model with 30 variables with 1140 cases using the Maximum Likelihood method for estimation, the results indicate that the data do not follow multivariate normality. The Asymptotic distribution-free (ADF) estimator method from AMOS 4 recommended by Browne (1984) was used for further structural equation model analysis. Browne's (1984) Asymptotic Distribution Free (ADF) estimator is available in AMOS 4. Fortunately, the requirement for use of ADF requires sample sizes that exceed at least 1000 cases. Due to the non-normality of data, the measurement indices were not considered for further analysis (Table 8).

Next, the first structural equation model was performed using the asymptotic distribution free method with the same 30 variables with 1140 cases. The chi-square value was 3972.12 at 401 degree of freedom, the RMSEA value was 0.088 (p=0), and CFI was 0.691 (Table 9). The results showed significant improvement from the previous results with the maximum likelihood estimation method. However, the overall fit required improvement for better estimation.

Three paths were insignificant from previous purchase experience to attitude toward personalization features, security in an online store from privacy and security concerns, and wish lists in purchase intention. Also, in purchase intention constructs, the results from modification indices showed heavy correlation among their errors.

Table 8.   The Results from the Initial Model for the Structural Equation Model

Fit Measures								
	Chi-square	DF	P	GFI	AGFI	CFI	NFI	RMSEA
Default model	9490.868	401	0	0.554	0.483	0.569	0.559	0.141

Table 9.   The Results from the Initial Model with ADF Method

Fit Measures								
	Chi-square	DF	P	GFI	AGFI	NFI	CFI	RMSEA
Default model	3972.122	401	0	0.691	0.641	0.417	0.44	0.088

The paths and correlation variables were carefully examined and dropped one by one

after observing the modification indices. Almost all indices for fitting were better than the

measures in the previous model. However, the consistent p-value was less than 0.001. If

the Chi-square value is below the significance level of 0.05, the data do not fit the model

well. However, the chi-square measure is sensitive to sample size, and a large sample

can cause a significantly poor fit even though the model explains the data well (Bagozzi

& Yi, 1988; Lee, 1990; Kim et al., 2003). The structural equation model was refined by

modification index guidelines to see if the overall fit indices for model fit improved by

elimination of each path for four variables (Appendix D). After close examination of

modification index and eliminations of paths, the model improved in fit indices (see

Table 10 and Table 11).

Table 10. The Results from the 5th Model

Fit Measures								
	Chi-square	DF	P	GFI	AGFI	NFI	CFI	RMSEA
5th Refined Model	1873.911	226	0	0.796	0.751	0.546	0.574	0.08

Table 11. The Results from the 15th Model

Fit Measures								
	CMIN	DF	P	GFI	AGFI	NFI	CFI	RMSEA
15th Refined Model	404.691	61	0	0.921	0.882	0.752	0.779	0.07

Modification indexes from AMOS results were used for elimination of each path with one by one removal procedure. Modification indexes are regarded as evidence of misfit captured, which can be conceptualized as a chi-square statistic (Joreskog & Sorbom, 1988). After the 15th refinement of the model, the fit was closer to the guidelines of better fit, but there were still modification indexes higher than 10 (see Table 12). The variables of attitude on product and price search engine (a2), comparison shopping feature(v55), and promotion notification (e61) were considered for elimination by modification indices. Finally, after the removal of three paths, the chi-square value greatly improved with 31 degrees of freedom. The model estimated and the results found that the model fit the data well. The basic measures of absolute fit for RMSEA was greatly improved and there was no path that had a modification index over 10 (Table 13).

Table 12. Modification Indices for 15th Refinement of the Model

Covariances:			M.I.	Par Change
Promotion	↔	Comparison Shopping Feature	10.023	0.159
Given ability of personalization	↔	Promotion	15.003	-0.211
Recognition of name	↔	Given ability of personalization	11.490	0.185
Reward program	↔	Promotion	15.569	0.293
Login and registration	↔	Comparison shopping feature	10.426	-0.187
Search features	↔	Comparison shopping feature	68.765	0.425
Search features	↔	Promotion	22.914	-0.276
Search features	↔	Recognition	16.763	-0.284
Search features	↔	Reward program	11.361	0.277
Search features	↔	Login and registration	12.551	0.248
Given ability of personalization	↔	Comparison shopping feature	10.637	0.091
Option to save financial info	↔	Previous purchase	11.051	-0.215
Option to save financial info	↔	Search features	20.080	-0.281

Table 13. The Results from the Final Model

Fit Measures								
	CMIN	DF	P	GFI	AGFI	NFI	CFI	RMSEA
Default model	75.326	31	0	0.982	0.969	0.94	0.964	0.035

Structural equation modeling was used to test each of the hypotheses, which are depicted in Figure 4.

Hypothesis 1

H1: Attitudes toward personalization features are important determinants of consumer intention to purchase online (Supported).

Hypothesis 1 was supported because attitude toward personalization features had a positive causal effect on behavioral purcahse intention using personalization features (standardized coefficient = 0.67, t = 14.340). Consumers who had more favorable attitudes toward personalization features had higher intentions to purchase using personalization features. This result implies that "target marketing of interactive personalization features for explicit personalization implementation" such as site login and registration (coefficient λ = 0.78), reward program (coefficient λ = 0.79), and recognition of consumers in an online store (coefficient λ = 0.69) are the features that significantly explain consumer attitude toward personalization features. As discussed, charateristics of those three features represent consumer sharing of information in the personalization implementation process. The results indicate consumer attitudes toward personalization can be best explained by those features. For intention to purchase online using personalization features, the features that explain the intention to purchase using personalization features were all from target merketing personalization and wish lists (coefficient λ = 0.88) and given ability to personalize store (coefficient λ = 0.94).
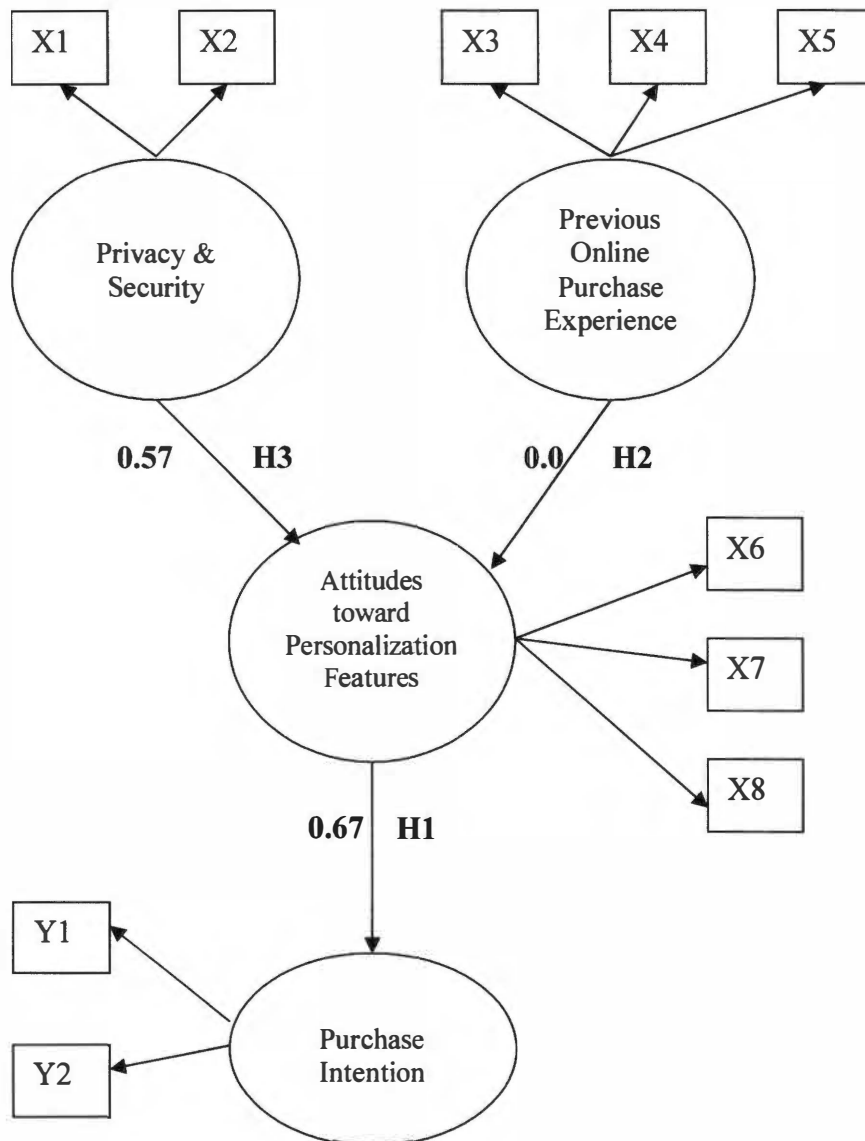
Figure 4. Final Structural Equation Model

X1: privacy concern on online shopping

X2: security concern on online shopping

X3: frequency of purchase

X4: number of retailers purcased from

X5: percentage of overall purchase made online

X6: site login and registration*

X7: reward program*

X8: recognition of my name*

Y1: intention to purchase online using wish lists*

Y2: intention to purchase online using given ability of my own personalization store*

* target marketing for interactive personalization for explicit implementation

Figure 4.   Final Structural Equation Model (continued)

In the attitude formation stage, consumers have a certain perception toward features of personalization but in the intentional behavior stage, they consider different features for their purchase. The results from the attitude calculation by Fishbein's method (see table 7) indicate the lowest weighted attitude features were wish list (15.11) and given ability of personalizing page to my own preference (19.39) which were included in the factor of "target marketing of interactive personalization". Even though the two features had the lowest attitude measurement, they were the features that consumers perceive as personalization features in intention to purchase online.

Hypothesis 2

H2: Previouse online purchase experience will significantly influence consumer attitudes toward personalization features (Not supported).

Hypothesis 2 was not supported because previous online purchse experience had no influence on consumer attitudes toward personalization features (standardized coefficient = 0, t = 0.045). According to past studies, previous experience is the formation of perception on the object for attitude and behavioral intention since past behavior is a predictor of future behavior (Bentler & Speckart, 1981). Since the personalization procedures for consumers in an e-commerce environment are often instantaneous, previous online purchase may not necessarily be a predictor for attitude formation. In addition, the personalization features are not always available as one set in an online store for consumers, thus, consumer experience and attitudes toward personalization features might differ from individual to individual. At the same time,

even through the previous online purchase, consumers may not perceive the features in online stores as personalization features or as part of the personalization process.

Hypothesis 3

H3: Consumer concern about privacy and security has a siginificant influence on consumer attitudes toward personalization features (Supported).

Hypothesis 3 was supported because consumer concerns about privacy and security had a significant influence on consumer attitudes toward personalization features (standardized coefficient = 0.568, t = 13.427). Since personalization is the process of information exchange between consumers and e-tailers, consumer concerns about their sensitive information lead to privacy and security concerns. The results indicate that consumer concerns about privacy and security are natural phenomena of e-commerce and are important to study in consumer research.

CHAPTER V

DISCUSSION AND IMPLICATIONS

The primary purpose of this study has been to investigate how consumers' attitude toward personalization features in e-tailing influence consumer intentions to purchase in online stores. This chapter provides discussion and conclusions drawn from the results of the study. In addition, limitations of this study and implications for future research are discussed.

Discussion and Findings

In this section, results of the hypothesis testing and conclusions are discussed. Using AMOS 4, structural equation modeling was used to test hypotheses. The first hypothesis (H1: Attitudes toward personalization features are important determinants of consumer intention to purchase online) concludes that consumers who had more favorable attitudes toward personalization features had higher intentions to purchase online. This is a major finding of the study. The results support Fishbein's behavioral intentions model. In this study, attitude towards personalization features was important in affecting behavioral intention. This finding is consistent with previous behavioral intentions studies indicating that attitude is a strong determinant of behavioral intention and the best predictor of behavior (Fishbein, 1985; Eagly & Chaiken, 1993; Shim et al., 2001).

From the factor analysis results, attitude toward personalization features was composed of three factors:

a) "Core function" of retail personalization represents the implicit implementation of personalization. Some consumers may not perceive these "core functions" as personalization features. Thus, consumer data (i.e. secondary or behavioral data) may be revealed to e-tailers without consumer knowledge or agreement (i.e., search features, customer service, order and delivery tracking, comparison shopping feature, and production selection aids),

b) "Target marketing of interaction" for personalization represents explicit implementation of personalization that consumers may perceive as personalization features through the interaction with e-tailers and consumers (i.e. permission based data collection - promotion notification, given ability of personalization, wish list, reward program, recognition of name, and login and register), and

c) "value – added convenience" for personalization represents a completely voluntary personalization feature that consumers can choose such as option to save financial information and option to save personal information.

The factor analysis results showed consistent features in attitude and intention. The five features significant for attitude and intention were from the second factor: target marketing of interactive personalization. For intention to purchase online using personalization features, the features that explain the intention were the wish list, and

given ability to personalize store. Features that explain attitude were site login and registration, reward program, and recognition of consumers in an online store. In the attitudinal stage, consumers have a certain perception toward features for personalization but in the stage of behaviroal intention, they use different features for their intention to purchase. Distinctive differences can be found between attitude and intention variables. Even though all five features for attitude and intention come from the "Target marketing of interactive personalization" from the factor analysis results which are explicit implementation features for personalization, two features for intentional behavior had the lowest weight on attitude which was wish list (15.11) and given ability of personalizing page with my own preference (19.39) (see Table 6). The results from the attitude measurements from Table 6 verify inconsistency in consumers' attitudes and behavioral intention. The inconsistency of consumer behavior in selecting the features may provide implications for the e-tailer. First, during the purchase and transaction, consumers intend to utilize two features even though they do not think those are important. Second, three features, which were left after the model refinement for attitudes come from the consumer's information sharing or prior information during the e-tailers for the personalization process and provide no relation to transaction. Two features which were left after the model refinement for intention to purchase come from benefits of already given consumer information to retailers and are related to purchase. In the aspect of attitude measurement, the features that explained attitude toward personalization had comparably higher weights than intention features which were reward program (27.9), login and register (25.95), and promotion notification (22.43). The results would indicate that consumers are more likely to be concerned about their privacy and security towards

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their information before the behavioral intention stage, however, they enjoy convenience and utilize personalization features that is already in place as personalization due to the information revealed.

The finding from the second hypothesis (H2: Previouse online purchase experience will significantly influence consumer attitudes toward personalization features) is not consistent with previous studies in which previous experience influences future behavior (Shim et al., 2001; Weber and Roehl, 1999). This non-significant relationship can be justified in several ways. First, the results indicate that a consumer who purchased more products or services online does not necessarily use the personalization features. On the other hand, a consumer who purchased comparably fewer products or services online does not always indicate that the consumer had less experience in using personalization features. The exposure to personalization features or the decision to use personalization features may be dependent on an individual consumers' preferences. For example, a heavy user of online stores may purchase products strictly on the price of product. Thus, the consumer does not register with the specific store, does not personalize the webpage, but just goes from online store to store for bargain deals without taking advantage of any personalization benefits. In contrast, even the consumer with just a one time online purchasing experience may utilize personalization features just for the information and other benefits. Further implications and future research will be discussed in the next sections.

Academic Contributions

Previous research on behavioral intention in an e-commerce context indicates consumer acceptance of new technology such as personalization and behavioral intention may be explained by the Technology Acceptance Model (TAM), which evolved from the behavioral intention model (Davis, 1989). Also, TAM has been empirically tested and proved to be an appropriate model to explain consumer's behavioral intention with new technology. However, empirical studies using TAM have focused only on usefulness and ease of use as measures of consumers' behavioral intentions. In e-tailing environments, security and privacy seem likely to be more important influences on consumers' willingness to accept the new technology than usefulness and ease of use. Much research has been conducted to investigate consumer concerns about security and privacy in online transactions, but no empirical studies have investigated how consumers' privacy and security concerns influence consumer acceptance of the personalization process.

Another contribution of this study is to provide insight about the existence of previous online purchase experiences and its affect attitude formation. According to Shim *et al* (2001), consumers' previous experience with online purchasing is a significant predictor of behavioral intentions because it indicates that consumers have the necessary computer skills to complete all the stages of the online transaction. Even though in the Theory of Planned Behavior (Azjen, 1991), past behavior is not a predictor for behavioral intentions, many researchers have asserted that the inclusion of past behavior significantly improves the prediction of behavior (Bentler & Speckart, 1981; Sutton & Hallett, 1989). However, the results of the current study showed no influence of previous online purchase on attitudes toward personalization features. As discussed above, there

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are possible explanations for this finding to make an academic contribution. One likely explanation is that consumers now generally have enough long-term exposure to e-environments that their computer skills or previous online purchases are no longer a factor affecting their attitude on that subject. Second, previous online experience would not have any influence on only the personalization process in an online store because the characteristic of the personalization involves instant interaction and different immediate results each time the consumers are exposed to personalization.

Managerial Implications

One of the ways e-tailing and information sites can create viable and sustainable business models is to implement personalization features in their sites. Consumers now expect and demand well-organized personalization features responsive to their exact preferences, and studies have shown that e-tailers who want to have a competitive advantage need to make increasing commitments to finding out which personalization features consumers want, and offer them. Personalization is an expensive commitment, in terms of implementation for software, consumer data processing and personnel. At the same time, e-tailers have yet to develop any standardized implementation methods, industry-by-industry or product-by-product or consumer by consumer. However, the results of this study may suggest solutions for how much implementation and what kinds of features would be appropriate for e-tailers. The study categorized personalization features and one of them was "core function of retailing for personalization" which is a set of very implicit features, even consumers do not feel that it is personalization. E-tailers should implement the features considered "core function of retailing for

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personalization" in their website for the first trial stage of personalization implementation. After implementing the core personalization features, e-tailers should precede very carefully, using cost and benefit analysis to implement other features, stage by stage.

The second group of functions for personalization consists of the features that are marketing-oriented and require the provision of consumer information. In this second stage of personalization implementation, the study suggests accurate forecasting of consumer demand. As the results indicate, consumers perceive personalization in this second stage, however, the characteristics of each feature are perceived very differently depending on consumers' stage of usage in personalization (i.e. information revelation or purchase stage). For example, the wish list feature was found to increase purchase intentions in the purchasing process, but it was not found to affect attitudes comparably. The emphasis of personalization features should be enhancing purchase intention to increase transactions. E-tailers may classify the features in the category of "target marketing explicit personalization features" into "information exchange interactive features" and "purchase-stage personalization features" as the results show. The implementation of features in these two classifications should be considered at the same time, but depending on the consumer's exposure to personalization (i.e. loyal customer or new customer), the two features may create further complicated and accurate personalization.

Personalization also involves web design and consumer information processing depending on each individual's wants and needs at the right time and place including customer data in decision making about marketing efforts. The key for e-tailers is to understand the main principles of personalization, to have basic knowledge of the

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implementation process, to use consumer profiles to learn consumers' preferences regarding personalization features, and to find opportunities to fit personalization features into their own e-tailing environment to produce value. Comparably, small sized e-tailers can use personalization strategies to increase sales and consumer loyalty by utilizing core features. Instead, as the study suggests, they might focus on privacy and security, order/delivery, customer service, comparison shopping features, selection aids, and Search engines.

Future Research

Since personalization features are evolving every day with the development of new personalization technologies, future research with an experimental design would be appropriate. While the results of this study indicate that previous online purchase experience is not a significant factor influencing consumer attitudes toward personalization features, a study with an experimental design, using real features might provide more conclusive results. First, it would be valuable to repeat this study at a later time with the same general format, since the results are likely to be affected by the fact that consumers are constantly accumulating more experience and exposure to personalization features.

M-commerce (mobile commerce) personalization would be a meaningful topic for further research in order to expand on the findings of this study. In the near future, personalization technologies and methods will move beyond e-commerce to M-commerce, as it becomes possible to pinpoint personalized information to consumers with GPS (Global Positioning System) technologies. In fact, once M-commerce is firmly

established, it may provide better opportunities than e-commerce to personalize purchasing experiences, because it will provide more detailed customer databases, with exact records of time and place, than the anonymous secondary information currently gathered by many e-tailers. However, the future of M-commerce personalization may depend on the current success of e-commerce personalization.

Knowledge of personalization features and procedures can only be attained by exposing consumers to personalization features and exploring their effects on consumers. Personalization features are not always guaranteed to have a direct value to e-tailers. However, through increased consumer conversion rates, lower rates of shopping cart abandonment and higher customer retention rates, personalization may be beneficial to e-tailers. The direct value of personalization features can be investigated in future research by combining measures of shopping cart abandonment or cart analysis with real secondary data from wish lists and shopping carts. At the same time, the indirect value of personalization features can be investigated by using measures of loyalty or satisfaction. If future studies can develop standardized measures to access customers needs and wants based on product category and consumer demographics, this will help in developing continuous relationship-based marketing with each individual consumer or segment. Finally, studies can be expanded to develop models for dynamically profiling consumer preferences on personalization features in online stores to aid e-tailers in the personalization process.

Limitations

Although the study contributes significantly to the understanding of how personalization features affect consumer attitudes and intentions and provides a useful description of the personalization process based on consumer-oriented theories, it did not incorporate actual behavior into the model. Current empirical research indicates inconsistencies between actual behavior and behavioral intentions (Shimp & Kavs, 1984). As discussed previously, an actual behavioral study of personalization is possible with new technologies such as web-log files, cookies, and other tracking technologies.

In a study of this nature, in which consumer attitudes and purchase intentions are analyzed with regard to personalization features, it is obvious that not all the various personalization features can be considered such as secondary data implementing personalization. Key features had to be selected for the study based on literature in marketing, retailing, and computer science.

The notion of personalization is evolving thanks to fast growing computer technologies. The concept of personalization may not reflect consumers' perception of the features that are discussed in this study. Many of these features, especially the implicit ones, may not be perceived by consumers as personalization features but rather simply standard services that they are accustomed to receiving when they shop on line.

Finally, the measurement of the model changed due to the model fits. Although the final model was reliable, deleted items may have different and significant meanings in an authentic personalization process than they do in the theoretical model.

LIST OF REFERENCES

REFERENCES

Adams, D. A., Nelson, R. R., & Todd, P.A. (1992). Perceived usefulness, ease of use and usage of information technology: a replication, Management of Information Quarterly, 16 (2), 227-247

Agrawal, M., Kumaresh, T. V., & Mercer, G. A. (2001). The false promise of mass customization, The McKinsey Quarterly, 3, 62 – 71

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

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Ed.), New York: Springer-Verlag.

Ajzen, I. & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. NJ: Prentice-Hall, Englewood Cliffs

Allen, E., & Fjermestad, J., (2001). E-commerce marketing strategies: An integrated framework and case analysis, Logistics Information Management, 14 (2), 14-23.

Ang, S. H. & Leong, S. M. (1996).The mediating influence of pleasure and arousal on layout and signage effects: Comparing more and less customized retail service, Journal of Retailing and Consumer Services, 4 (1), 12-24

Bagozzi, R. P. & Yi, Y. (1998). On the evaluation of structural equation models, Journal of the Academy of Marketing Science, 16 (1), 74-94

Bentler, P. M. & Speckart, G. (1981). Attitudes cause behaviors: a structural equation analysis, Journal of Personality and Social Psychology, 40, 226-238

Bettencourt, L. A. & Gwinner, K. (1996). Customization of the service experience: the role of the frontline employee, International Journal of Service Industry Management, 7 (2), 3-20

Bitner, M. J., Bernard, H. B., & Mohr, L. A. (1994). Critical service encounters: the employee's viewpoint, Journal of Marketing, 58 (3), 95-106

Bless, H. B., Schwarz, G. N., & Bohner, F. (1990). Mood and persuasion: a cognitive response analysis, Personality and Social Psychology Bulletin, 16 (2), 331–345.

Bobbitt, L. M. & Dabholkar, P. A. (2001). Integrating attitudinal theories to understand and predict use of technology-based self-service, International Journal of Service Industry Management, 12 (5), 423-450

Boldero, J. (1995). The production of household recycling of newspapers: the role of attitudes, intentions and situational factors, Journal of Applied Social Psychology, 25, 440-462

Browne, M. W. (1984). Asymptotically distribution free methods fro the analysis of covariance structures, British Journal of Mathematical and Statistical Psychology, 37, 62-83

Burn, J., Marshall, P., & Barnett, M. (2002). E-business strategies for virtual organization (First ed.). Worburn, NJ: Butterworth-Heinemann

Burt, S., & Sparks, L. (2003). E-commerce and the retail process: a review, Journal of Retailing and Consumer Services, Article in press

Byrne, B. M. (2000). Structural equation modeling with AMOS: basic concepts, applications, and programming. Mahwah, NJ: Lawrence Erlbaum Association, Inc.

Chaffey, R., Meyer, K., Johnston, F., & Ellis-Chadwick, F. (2000). Internet Marketing. , London: Financial Times Prentice-Hall

Chang, Y., Burns, L. D., & Noel, C. J. (1996). Attitudinal versus normative influence in the purchase of brand-name casual apparel. Family and Consumer Sciences Research Journal, 25 (1), 79-109.

Chin, W. W. & Todd, P. R. (1995). On the use, usefulness, and use of structural equation modeling in MIS research: a note of caution, Management Information Systems Quarterly, 19 (2), 237-246

Cook, A. J., Kerr, G. N., & Moore, K. (2002). Attitudes and intentions towards purchasing GM food, Journal of Economic Psychology, 23, 557-572

Dabholkar, P. A. (1992). Role of affect and need for interaction in on-site servie encounters, Advances in Consumer Research, 19, 563-169

Davies, F., Goode, M., Mazanec, J., & Moutinho, L. (1999). LISREL and neural network modeling: tow comparison studies, Journal of Retailing and Consumer Services, 6, 249-261

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology, MIS Quarterly, 13 (3), 319–340

Delicato, F. C., Pirmez, L., & Carmo Csta, L. F. R. (2001). Fenix – personalized information filtering system for WWW pages, Internet Research: Electronic Networking Applications and Policy, 11 (1), 42-48

Dholakai, R. R., Zhao, M., Dholakai, N., & Fortin, D. R. (2000). Interactivity and revisits to websites: A theoretical framework, Working paper of Research Institutes for Telecommunication and Information Marketing

Dillman, D. A. (2000). Mail and Internet surveys (Second ed.). New York: John Wiley & Sons

Donthu, Naveen & Garcia, Adriana (1999). The Internet shopper. Journal of Advertising Research, (3), 52-58.

Donthu, N. & Gilliland, D. (1996). Observations: the infomercial shopper, Journal of Advertising Research, 36 (2), 69-76.

Eastlick, M. A. (1996). Consumer intention to adopt interactive teleshopping, Market Science Institute Working Paper, 96-113, Cambridge, MA: Marketing Science Institute

Eagly, A. H. & Chaiken, S. (1993). The Psychology of Attitudes (Second ed.) London: HBJ

E-tailing group. Inc. (2003). Monthly report: survey on e-tailers. [On-line]. Retrieved April 10, 2003, from http://www.e-tailing.com

E-marketer. (2003). Worldwide Internet and ecommerce usage. [On-line]. Retrieved March 15, 2003, from http://www.emarketer.com

Fenech, T. & O'Cass, A. (2001). Internet users' adoption of web retailing: user and product dimensions, Journal of Product and Brand Management, 10 (6), 361-381

Fishbein, M. & Ajzen, I. (1975). Belief, attitude, intention, and behavior : an introduction to theory and research. Reading, MA: Addision-Wesley.

Fishbein, M. & Middlestadt, S. (1995). Noncognitive effects on attitude formation and change: fact or artifact?, Journal of Consumer Psychology, 4 (2), 181-202.

Fraser, J., Fraser, N., & McDonald, F. (2000). The strategic challenge of electronic commerce. Supply Chain Management: An International Journal, 5(1), 7-14

Goldsmith, R. E. (1999). The personalized marketplace: beyond the 4Ps, Marketing Intelligence & Planning, 17 (4), 178-185

Goldsmith, R. E.(2002). Explaining and predicting consumer intention to purchase over the Internet: Exploratory study, Journal of Marketing Theory and Practice, 27 (1), 22-28

Gordon, W. A. (1935). Attitudes, (Murchison, ed.), A Handbook of Social Psychology, Worchester, MA. Clark University Press, 798-844

Gosh, A. K.(2001). Security and privacy for e-business, (first ed.). New York, John Wiley and Sons, Inc.

Greenwald, A. R. & Kephart, J. O. (1999). Shopbot and pricebot. Conference proceeding, Conference of International Intelligence, July-August, Stockholom, Sweden

Gurau, C., Ranchhod, A., & Hackney, R. (2001). Internet transaction and physical logistic or complementarity?. Logistic Information Management, 14 (2), 33-43.

Graphics, Visualization, and Utilization Center (1998). GVU's WWW User Surveys. [On-line]. Retrieved May 10, 2002, from http://www.gvu.gatech.edu

Hallman, P. (2001). An introduction to personalization and online privacy and their impacts on legislation and the online business, Internet Economics, 4D1176, Royal Institute of Technology

Harris Interactive (2002). Online survey for online shopper. [On-line]. Retrieved March 27, 2003, from http://www.harrisinteractive.com/harris_poll/

Hart, C.W.(1996). Made to order, Marketing Management, 5 (2), 12-22

Hart, C., Doherty, D., & Ellis-Chadwick, F. (2000). Retailer adoption of the Internet - Implications for retail marketing, European Journal of Marketing;34 (8), 954-974

Helander, M.G. & Khalid, H.M. (2000). Modeling the customer in electronic commerce, Applied Ergonomics, 31 (6), 609- 619

Hendrickson, A. R., Massey, P. D., & Cronan, T. P. (1993). On the test-retest reliability of perceived usefulness and perceived ease of use scales, Management Information Systems Quarterly, 17 (2), 227-230

Hof, R. D. (1998, December 2). Now it's your web. Business week, October, p.164-178

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

79

Hoffman, D. L. & Novak, T. P. (1997). A new marketing paradigm for electronic commerce, The Information Society, 13, 43-54

Huffman, C. & Kahn, B. E. (1998). Variety for sale: Mass customization or mass confusion?, Journal of Retailing, 74 (4), 491-513

Internet Life Report (2000). Tracking online life: how women use the Internet to cultivate relationship with family and friend. [On-line]. Retrieved January 13, 2003, from http://www.pewinternet.org/reports/pdfs/Report1.pdf

Joreskog, K. & Sorbom, D. (1993). LISREL 8: Structural Equation Modeling with the SIMPLIS Command Language. SSI, IL: Chicago.

Jupiter Communications (2002). Vision report [On-line]. Retrieved January 23,2002, from http://www.jupitercommunications.com/bin/home.pl

Kalyanam, K. & McIntyre, S. (2002, Fall). The e-marketing mix: A contribution of the e-tailing wars, Journal of the Academy of Marketing Science, 30 (4), 487-499

Keen, P. & McDonald, M. (2000). The eprocess edge (n.d.). Berkeley, Osborn: Mcgrw Hill.

Keen, C., Wetzels, M., Ruyter, K. D., & Feinberg, R. (2002). E-tailers versus retailers; which factors determine consumer preferences, Journal of Business Research, 5750, 1-11

Kim, Y., Kim, E. Y., & Kumar, S. (2003). Testing the behavioral intentions model of online shopping for clothing, Clothing and Textile Research Journal, 21 (1), 32-40

Kim, J. K., Cho, Y. H., Kim, W. J., Kim, J. R., & Suh, J. H. (2002). A personalized recommendation procedure for Internet shopping, Electronic Commerce Research and Applications, 1, 23-34

Kinkella, K. (1999). The value added consumer benefits of online shopping, Journal of Integrated Commujnications, 2, 12-21

Lee, S. (1990). Covariance structure modeling in social science research, Seoul, Sung-Won Sa, Korea

Levy, M. & Weitz, B. E. (2001). Retailing Management, New York: McGraw – Hill

80

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

Mano, H. (1999). The influence of pre-existing negative affect on store purchase intentions, Journal of Retailing, 75 (2), 149-172

Milne, G. R. & Boza, M. E. (1999). Trust and concern in consumers' perceptions of marketing information management practices, Journal of Interactive Marketing, 13 (1), 5-24

Mittal, B. & Lassar, W. M. (1996). The role of personalization in service encounter, Journal of Retailing, 72 (1), 95-109

Mohammed, R. A., Fisher, R. J., Jaworski, B. J., & Cahill, A. M. (2002). Internet Marketing: building advantage in a network economy, New York, NY: McGrw-Hill.

Morganosky, M.A. (1997). Retailing and the Internet: a perspective on the top 100 US retailers, International Journal of Retail & Distribution Management; 25 (11), 372-377

Nua Internet Surveys (2000). Majority of online shoppers are women. [On-line] Retrieved May 2, 2003, from http://www.nua.ie/surveys/index.cgi

Nysveen, H., & Pedersen, P. E. (2003). An exploratory study of customers' perception of company web sites offering various interactive applications: moderating effects of customers' Internet experience, Decision Support Systems, 1046, 1-14

O'cass, A. & Fenech, T. (2003). Web retailing adoption the nature of internet users web retailing behavior, Journal of Retailing and Consumer Services, 10, 81-94

Pedesen, P. E. & Nysveen, H. (2001), Shopbot banking: an exploratory study of customer loyalty effects, International Journal of Bank Marketing, 19 (4), 146 -155

Peng, W., & Cisna, J. (2000). Cookie – a promising technology, Online Information Review, 24 (2), 150-153

Peppers, D., & Rogers, M. (1997). Enterprise One to One. New York: Double Day

Peppers and Rogers Group. Inc. (2002). 1 to 1 magazine. [On-line]. Retrieved June 10, 2002, from http://www.1to1.com

Perkowitz, M., & Etzioni, O. (2000). Towards adaptive websites: conceptual framework and case study, Artificial Intelligence, 118 (2), 245-275

Peterson, R. A. (2001). Electronic marketing and the consumer, Thousand Oaks, CA: Sage Publication

Phelps, J. E., D'Souza, G., & Nowak, G. J. (2001). Antecedents and consequences of consumer privacy concerns: an empirical investigation, Journal of Interactive Marketing, 15 (4), 2-17

Prabhaker, P.R. (2000). Who owns the online consumer? Journal of Consumer Marketing, 17(2), 24-32

Rafaeli, Sheizaf and Fay Sudweeks (1997). Networked Interactivity, Journal of Computer Mediated Communication, 2, (4), 71-78

Raghu, T.S., Kannan, P.K., Rao, H. R., & Whiston, A. B. (2001). Dynamic profiling of consumers for customized offerings over the Internet: a model and analysis, Decision Support Systems, 32, 117 – 134

Rowley, J. (1996). Product search in e-shopping: A review and research propositions, Journal of Consumer Marketing; 17(1), 20-35

Rowley, J. & Frances, S. (2001). Leveraging customer knoledge – profiling and personalization in e-business, International Journal of Retail and Distribution Management, 29 (9), 409 - 415

Ryan, M. J., (1982). Behavioral intention formation: the interdependency of attitudinal and social influence variables. Journal of Consumer Research, 9, 263-278

Salisbury, W. D., Pearson, R. A., Pearson, A,. W., & Miller, D. W. (2001). Perceived security and World Wide Web purchasing intention, Industrial Management and Data System, 101 (4), 165-176

Sharma, A., & Sheth, J. N. (2002). Web-based marketing, the coming revolution in marketing thought and strategy, Journal of Business Research, 5744, 1-7

Shaw, M. J. (2003). E-business management: integration of web technologies with business models, Norwell, MA, Kluwer Academic Publisher

Sheppard, B. H., Hartwick, P. R., & Warshaw, P. R. (1998). The theory of reasoned action: a meta-analysis of past research with recommendations for modifications and future research. Journal of Consumer Research, 15 (4), 325-343

Sheth, J. & Mittal, B. (2003). Customer Behavior: a managerial perspective (Second ed), Mason, Thomson South-Western

Shim, S., Eastlick, M. A., Lotz, S. L., & Warrington, P. (2001). An online prepurchase intentions model: the role of intention to search, Journal of Retailing, 77, 397-416

Shim, S. & Eastlick, M.A.(1998). The hierarchical influence of personal values on mall shopping attitude and behavior, Journal of Retailing, 74 (1), 139-60

Shimp, T. A. & Kavas, A. (1984). The theory of reasoned action applied to coupon usage, Journal of Consumer Research, 11, 24-35.

Shop.org & Boston Consulting Group. (2001). Shop.org Press Room, Washington, D. C.: National Retail Federation [On-line]. Retrieved August 18, 2001, from http://www/shop.org

Smith, M. D. (2002). The impact of shopbots on electronic markets, Journal of the Academy of Marketing Science, 30 (4), 446 – 454

Solomon, M. R., Surprenant, C. F., Czepiel, J. A., & Gutman, E. G. (1985). A role of theory perspective on dynamic interactions: The service encounter, Journal of Marketing, 49 (4), 99-111

Sparks, P. & Shepard, R. (1992). Self-identity and the theory of planned behavior: assessing the role of identification with green consumerism, Social Psychology Quarterly, 55 (4), 388-399

Strader, T.J. & Shaw, W. (1999). Consumer cost differences for traditional and internet markets. Internet research: Electronic Networking Application s and Policy, 9(2), 82-92

Steenkamp, J. E. M., & Baumgartner, H. (2000). On the use of structural equation models for marketing modeling, International Journal of Research in Marketing, 17, 195-202

Suprenant, C. F. & Solomon, M. R. (1987). Predictability and personalization in the service encounter, Journal of Marketing, 52 (2), 86-96

Sutton, S. R. & Hallet, R. (1989). Understanding seat-belt intentions and behavior: a decision making approach, Journal of Applied Social Psychology, 19, 1310-1325

Swinyard, W. R. (1993). The effects of mood, involvement, and quality of store experience on shopping intentions, Journal of Consumer Research, 20 (2), 271-280

Szajna, B. (1994) Software evaluation and choice: predictive validation of the technology acceptance instrument, <u>Management of Information Systems Quarterly, 18</u> (4), 319-324

Taylor, S. & Todd, P. A. (1995a). Understanding household garbage reduction behavior: a test of an integrated model, <u>Journal of Public Policy and Marketing,</u> 14 (2), 192–204

Taylor, S. & Todd, P. A. (1995b). Understanding information technology usage: a test of competing models, <u>Information Systems Research 6</u> (2), 144–175

Teo, T.S.H., Lim, V.K.G., & Lai, R.Y.C. (1999). Intrinsic and extrinsic motivation in Internet usage, <u>International Journal of Management Science, 27,</u> 25-37

Wang, A., Siew, C. K., & Yi, X. (2000). A new personalized filtering model in Internet commerce, <u>Proceeding of Scuola Sueriore G. Reiss Romoli,</u> Rome, Italy

Weber, K. & Roehl, W. S. (1999). Profiling people searching for and purchasing travel products on the world wide web, <u>Journal of Travel Research, 37</u> (2), 291-298

Wind, J. & Rangaswamy, A. (2001). Customerization: the nest revolution in mass customization, <u>Journal of Interactive Marketing, 15</u> (1), 13-32

Windham, L., & Orton, K. (2000). <u>The soul of the new customer,</u> Oxford, UK: Windsor Books

Wothke, W. (1993). <u>Testing structural equation models: Nonpositive definite matrices in structural equation modeling,</u> (Second ed). Newbury Park, CA: Sage

Yen, B. P. & Kong, R. C. W. (2002). Personalization access for electronic catalog on the web, <u>Electronic Commerce Research and Application, 1,</u> 20-40

APPENDICES

APPENDIX A

E-MAIL SURVEY INSTRUMENT

Personalization of Online Store and Shopping Intentions Survey

Thank you very much for considering participation in this research study. As part of my doctoral dissertation, I am interested in online shopping features that may influence your purchase.

I hope you will complete the questionnaire. It should take no more than 10 or 15 minutes of your time. There are no right or wrong answers.

Be sure to click on the submit button when you have finished. You will see a confirmation screen after submitting the survey.

Thank you for your participation.

Regards,

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E-MAIL SURVEY INSTRUMENT – CONSENT FORM

Consent For Research Study

The following information is provided to inform you about this research project and your participation in the study. Please read this form carefully. You may wish to print a copy of this consent form.

The purpose of the study is to get consumers' responses to and evaluations of online retailers' personalization features. In order to collect this information, you will be given the opportunity to become familiar with these features, and asked to answer a variety of different types of questions about these features and your intention for future online shopping. We will be asking you to answer all of the questions about these features. We will also be asking you some background questions. Under no circumstance is any type of product solicitation affiliated with this study.

If you complete the study, you will be entered into a drawing for a cash prize of $100. Everyone who is entered has the same chance of winning a prize, and the total number of entrants will be no larger than 1000 people. Your participation in this study is voluntary. You are free to choose not to participate in this study or to withdraw at any time if you choose not to answer some of the questions. However, if you choose not to participate or withdraw, then you will not be eligible for the drawing. The cash prize drawing will take place no later than the end of the business day seven weeks following the launch of the study (5:00pm, Wednesday, May 15, 2003) and the winner will be notified by e-mail.

Although we plan to analyze a number of demographic variables from study participants (i.e., age, gender, education) your individual results in the study will be kept anonymous and you will not be identified individually in the data that will be collected or in the results that will be reported. No personal information will be revealed.

After you have finished the study, you will be given the opportunity to request an aggregate summary of the results from the study, which will be made available once the data collection and analysis has been completed.

If you should have any questions about this research study before you begin, please feel free to contact the primary researcher (e-mail: jpark3@utk.edu). For additional information about giving consent or your rights as a participant in this study, please feel free to contact the University of Tennessee Institutional Review Board Office (865-974-7697).

Statement by person agreeing to participate in the study

- ☐   I have read this consent form and I freely and voluntarily choose to participate. Completion of the survey constitutes your consent to participate. I understand that I may withdraw at any time.
- ☐   I am 18 years of age or older.

For $100 Drawing   To sign in to the experiment, please enter your email address and the password we provided in the invitation (the email address is the one where you received the invitation to participate in this experiment) or just type for 'pass' into password box. Anonymity will be protected during online survey and your participation on drawing:

16% Complete

1. How many times have you purchased products online in the past 12 months?

○ 1 -3

○ 4 -6

○ 7 - 9

○ 10 - 12

○ 13 - 15

○ 16 or more

2. Approximately, how many online retailers have you purchased from in the past 12 months?

○ 1 -3

○ 4 - 6

○ 7 - 9

○ 10 - 12

○ 13 - 15

○ 16 or more

3. How much would you estimate you have spent shopping online in the past 12 months?

○ Less than $100

○ $101 - $200

○ $201 - $300

○ $301 - $400

○ $401 - $500

○ $501 or More

4. How comfortable do you feel using the Internet for shopping?

○ Very comfortable

○ Somewhat comfortable

○ Neutral

○ Somewhat uncomfortable

○ Very uncomfortable

5. How many different password and login names do you have for your online shopping?

○ 1 -3

○ 4 - 6

○ 7 - 9

○ 10 - 12

○ 13 - 15

○ 16 or more

6. How many online retailers have you registered for purchase or services?

○ 1 -3

○ 4 - 6

○ 7 - 9

○ 10 - 12

○ 13 - 15

○ 16 or more

7. How many online retailers have you used for your online shopping in the past 12 month?

- ○ 1 -3
- ○ 4 - 6
- ○ 7 - 9
- ○ 10 - 12
- ○ 13 - 15
- ○ 16 or more

8. What kind of Internet shopper do you consider yourself to be:

- ○ Light
- ○ Moderate
- ○ Heavy
- ○ Only Internet
- ○ None of this

9. On average, what percentage of your overall purchases are made online?

- ○ Less than 20 %
- ○ 21% - 40 %
- ○ 31% - 60%
- ○ 61% - 80 %
- ○ 81% - 100%

10. Please provide the product or service category you most FREQUENTLY purchased from an online store.

[   ]

Please contact viroid2000@hotmail.com if you have any questions regarding this survey. To sign in to the drawing of $100, please enter your email address at the end of the survey (the email address is the one where you received the invitation to participate in this experiment). Anonymity will be protected during online survey and your participation on drawing.

41% Complete

The next series of questions are asking you importance of each features.
How important is each of the following online features when you decide where to shop online?

1. Comparison shopping features

Very Unimportant ○ ○ ○ ○ ○ ○ ○ Very Important

2. Product or price search features

Very Unimportant ○ ○ ○ ○ ○ ○ ○ Very Important

3. Product selection aids

Very Unimportant ○ ○ ○ ○ ○ ○ ○ Very Important

4. Site entry such as login or register

Very Unimportant ○ ○ ○ ○ ○ ○ ○ Very Important

5. Wish lists

Very Unimportant ○ ○ ○ ○ ○ ○ ○ Very Important

6.Reward programs

Very Unimportant ○ ○ ○ ○ ○ ○ ○ Very Important

7.Promotion and event notifications

Very Unimportant ○ ○ ○ ○ ○ ○ ○ Very Important

8. Given ability of personalizing an online store by my preference set

Very Unimportant ○　○　○　○　○　○　○ Very Important

9. Recognition of my name

Very Unimportant ○　○　○　○　○　○　○ Very Important

10. Customer services

Very Unimportant ○　○　○　○　○　○　○ Very Important

11. Order and delivery tracking services

Very Unimportant ○　○　○　○　○　○　○ Very Important

12. Options to save my personal information

Very Unimportant ○　○　○　○　○　○　○ Very Important

13. Options to save my financial information

Very Unimportant ○　○　○　○　○　○　○ Very Important

14. Security of an online store

Very Unimportant ○　○　○　○　○　○　○ Very Important

15. Privacy in an online store

Very Unimportant ○　○　○　○　○　○　○ Very Important

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93

81% Complete

The next series of questions are related to your attitudes about available features in an online store (s). There are no right or wrong answers. Please indicate your degree of agreement with the following statements. Please select a response that best describes how you evaluate the statement about online store features.

When I shop online, I use the site (Store) because:

1. I like comparison shopping features (For example: price or product comparison table)

Disgree ○   ○   ○   ○   ○   ○   ○   Agree

2. I like product or price search features

Disagree ○   ○   ○   ○   ○   ○   ○   Agree

3. I like product selection aids such as recommendations by experts or other consumers

Disagree ○   ○   ○   ○   ○   ○   ○   Agree

4. I like requirements of site entry such as login or register

Disagree ○   ○   ○   ○   ○   ○   ○   Agree

5. I like wish lists for my future purchases

Disagree ○   ○   ○   ○   ○   ○   ○   Agree

6. I like reward programs such as bonus points or miles

Disagree ○　　　○　　　○　　　○　　　○　　　○　　　○ Agree

7. I like promotion and event notifications and offerings from retailers through e-mail

Disagree ○　　　○　　　○　　　○　　　○　　　○　　　○ Agree

8. I like the given ability of personalizing an online store by my preference set

Disagree ○　　　○　　　○　　　○　　　○　　　○　　　○ Agree

9. I like recognition of my name in the front page

Disagree ○　　　○　　　○　　　○　　　○　　　○　　　○ Agree

10. I like customer services

Disagree ○　　　○　　　○　　　○　　　○　　　○　　　○ Agree

11. I like order and delivery tracking services

Disagree ○　　　○　　　○　　　○　　　○　　　○　　　○ Agree

12. I like options to save my personal information

Disagree ○　　　○　　　○　　　○　　　○　　　○　　　○ Agree

13. I like options to save my financial information such as credit card number

Disagree ○　　　○　　　○　　　○　　　○　　　○　　　○ Agree

14. I care about security of an online store

Disagree ○　　　○　　　○　　　○　　　○　　　○　　　○ Agree

15. I care about the privacy in an online store

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Disagree ○ ○ ○ ○ ○ ○ ○ Agree

16. I feel secure sending personal / financial information across the Internet

Disagree ○ ○ ○ ○ ○ ○ ○ Agree

17. I would safe providing sensitive information about myself over the store (retailer)

Disagree ○ ○ ○ ○ ○ ○ ○ Agree

Please contact viroid2000@hotmail.com if you have any questions regarding this survey. To sign in to the drawing of $100, please enter your email address at the end of the survey (the email address is the one where you received the invitation to participate in this experiment). Anonymity will be protected during online survey and your participation on drawing.

84% Complete

The next series of questions are related to your intention to purchase online in the future. There are no right or wrong answers. Please indicate the likelihood of the following statements.

I am more likely to purchase from an online retailer:

	Highly Unlikely			Neutral			Highly Likely
1. If comparison shopping features for products and prices are provided	○	○	○	○	○	○	○
2. If product and price search features are provided	○	○	○	○	○	○	○
3. If I can have shopping selection aids such as recommendations, FAQs, or expert's comments	○	○	○	○	○	○	○
4. If I am required to login and register for site entry	○	○	○	○	○	○	○
5. If "Wish lists" are available for future transactions	○	○	○	○	○	○	○
6. If the retailer offers a reward program	○	○	○	○	○	○	○
7. If the retailer alerts me about promotions or events by e-mail	○	○	○	○	○	○	○

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E-MAIL SURVEY INSTRUMENT – CONTINUED

87% Complete

The next series of questions are related to your intention to purchase online in the future. There are no right or wrong answers. Please indicate the likelihood of the following statements.

I am more likely to purchase from an online retailer:

	Highly Unlikely			Neutral			Highly Likely
8. If I can personalize the online store with my own preferences	○	○	○	○	○	○	○
9. If the retailer recognizes me whenever I login or enter the site	○	○	○	○	○	○	○
10. If customer services are available such as a phone number, e-mail, or chatting are offered	○	○	○	○	○	○	○
11. If the retailer provides order/delivery tracking services	○	○	○	○	○	○	○
12. If the retailer saved my personal information	○	○	○	○	○	○	○
13. If the retailer saved my financial information such as credit card number	○	○	○	○	○	○	○
14. If the retailer has secured their online store	○	○	○	○	○	○	○
15. If the retailer would protect my privacy	○	○	○	○	○	○	○

Please contact viroid2000@hotmail.com if you have any questions regarding this survey. To sign in to the drawing of $100, please enter your email address at the end of the survey (the email address is the one where you received the invitation to participate in this experiment). Anonymity will be protected during online survey and your participation on drawing.

96% Complete

Gender

Male ○   ○ Female

Status of Marriage

Single ○   ○ Married   ○ Others

Year of Birth

[   ]

Education

[-- Select -- ▼]

Your approximate annual income?

[   ]

State of Residence

[   ]

Please contact viroid2000@hotmail.com if you have any questions regarding this survey. To sign in to the drawing of $100, please enter your email address at the end of the survey (the email address is the one where you received the invitation to participate in this experiment). Anonymity will be protected during online survey and your participation on drawing.

100% Complete

Thank you for your participation. Now, you will have a chance to enter into a drawing for a cash prize of $100. Everyone who is entered has the same chance of winning a prize, and the total number of entrants will be no larger than 1000 people. You are free to choose not to participate in the drawing. The cash prize drawing will take place no later than the end of the business day seven weeks following the launch of the study (5:00pm, Wednesday, May 15, 2003) and the winner will be notified by e-mail.
Please, provide your e-mail address for the drawing following box.

E-mail Address (Option)

Please contact viroid2000@hotmail.com if you have any questions regarding this survey. To sign in to the drawing of $100, please enter your email address at the end of the survey (the email address is the one where you received the invitation to participate in this experiment). Anonymity will be protected during online survey and your participation on drawing.

APPENDIX B

DESCRIPTIONS OF RESPONDENTS ON GENERAL ONLINE SHOPPING

APPENDIX B

DESCRIPTIONS OF RESPONDENTS ON GENERAL ONLINE SHOPPING

Q) How many times have you purchased products online in the past 12 month?

Online Purchase in the Past 12 Months

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-3 times	359	31.5	31.5	31.5
	4 - 6 times	267	23.4	23.5	55.0
	7 - 9 times	162	14.2	14.2	69.2
	10 - 12 times	132	11.6	11.6	80.8
	13 - 15 times	32	2.8	2.8	83.7
	More than 16 times	186	16.3	16.3	100.0
	Total	1138	99.8	100.0	
Missing		2	.2		
Total		1140	100.0		

Q) Approximately, how many online retailers have you purchased from in the past 12 months?

How Many Retailers Have You Purchased?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-3 times	575	50.4	50.6	50.6
	4 - 6 times	338	29.6	29.7	80.3
	7 - 9 times	116	10.2	10.2	90.5
	10 - 12 times	72	6.3	6.3	96.8
	13 - 15 times	7	.6	.6	97.4
	More than 16 times	29	2.5	2.6	100.0
	Total	1137	99.7	100.0	
Total		1140	100.0		

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Q) How much would you estimate you have spent shopping online in the past 12 months?

Estimation of Purhcase Amount

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than $100	298	26.1	26.2	26.2
	$101- $200	190	16.7	16.7	42.9
	$201 - $300	161	14.1	14.1	57.0
	$301 - $400	117	10.3	10.3	67.3
	$401 - $500	90	7.9	7.9	75.2
	$501 or more	282	24.7	24.8	100.0
	Total	1138	99.8	100.0	
Missing		2	.2		
Total		1140	100.0		

Q) How comfortable do you feel using the Internet for shopping?

Perceived comfortability for online shopping

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very comfortable	415	36.4	36.6	36.6
	Soewhat comfortable	441	38.7	38.9	75.6
	Neutral	123	10.8	10.9	86.4
	Somewhat uncomfortable	113	9.9	10.0	96.4
	Very comfortable	41	3.6	3.6	100.0
	Total	1133	99.4	100.0	
Missing		7	.6		
Total		1140	100.0		

Q) How many different password and login name do you have for your online shopping?

Number of login name for online shopping

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-3 times	701	61.5	61.7	61.7
	4 - 6 times	231	20.3	20.3	82.0
	7 - 9 times	81	7.1	7.1	89.2
	10 - 12 times	50	4.4	4.4	93.6
	13 - 15 times	19	1.7	1.7	95.2
	More than 16 times	54	4.7	4.8	100.0
	Total	1136	99.6	100.0	
Missing		4	.4		
Total		1140	100.0		

Q) How many online retailers have you registered for purchase or service?

Number of Registered Online Store(s)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-3 times	475	41.7	41.9	41.9
	4 - 6 times	301	26.4	26.6	68.5
	7 - 9 times	130	11.4	11.5	80.0
	10 - 12 times	111	9.7	9.8	89.8
	13 - 15 times	24	2.1	2.1	91.9
	More than 16 times	92	8.1	8.1	100.0
	Total	1133	99.4	100.0	
Missing		7	.6		
Total		1140	100.0		

Q) On average, what percentages of your overall purchases are made online?

Percentage of Overall Purchases Made Online

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 20%	732	64.2	64.7	64.7
	21% - 40%	215	18.9	19.0	83.7
	31% - 60%	112	9.8	9.9	93.6
	61% - 80%	54	4.7	4.8	98.3
	81% - 100%	19	1.7	1.7	100.0
	Total	1132	99.3	100.0	
Missing		8	.7		
Total		1140	100.0		

Q) What kind of Internet shopper do you consider yourself to be:

Internet shopper

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	LIGHT	618	54.2	54.5	54.5
	MODE RATE	395	34.6	34.8	89.3
	HEAVY	83	7.3	7.3	96.6
	ONLY INTER NET	8	.7	.7	97.4
	NONE OF THIS	30	2.6	2.6	100.0
	Total	1134	99.5	100.0	
Missing	System	6	.5		
Total		1140	100.0		

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APPENDIX C

RELIABILITY ANALYSIS RESULTS

RELIABILITY ANALYSIS RESULTS

1. IMPORTANCE

R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E   (A L P H A)

```
  1.      V17
  2.      V18
  3.      V19
  4.      V20
  5.      V21
  6.      V22
  7.      V23
  8.      V24
  9.      V25
 10.      V26
 11.      V27
 12.      V28
 13.      V29
```

        N of Cases =   1092.0

Statistics for	Mean	Variance	Std Dev	N of Variables
Scale	63.3214	177.8260	13.3351	13

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.8709	3.4405	6.1044	2.6639	1.7743	.6314

Item Var	Mean	Minimum	Maximum	Range	Max/Min	Variance
	2.6816	1.7104	4.0759	2.3654	2.3829	.3992

Inter-item Covariances mean	Minimum	Maximum	Range	Max/Min	Variance
.9164	.1969	2.2217	2.0248	11.2852	.1335

Hotelling's T-Squared =2329.7205   F =192.1859   Prob. = .0000
  Degrees of Freedom: Numerator 12   Denominator = 1080

Reliability Coefficients   13 items

Alpha =   .8710   Standardized item alpha =   .8755

RELIABILITY ANALYSIS RESULTS – CONTINUED

2. BELIEF

R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E   (A L P H A)

```
 1.      V38
 2.      V39
 3.      V40
 4.      V41
 5.      V42
 6.      V43
 7.      V44
 8.      V45
 9.      V46
10.      V47
11.      V48
12.      V49
13.      V50
```

N of Cases =   1078.0

	Mean	Variance	Std Dev	N of Variables
Statistics for Scale	65.3108	181.2766	13.4639	13

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	5.0239	3.6929	6.3544	2.6614	1.7207	.6616

Item Var	Mean	Minimum	Maximum	Range	Max/Min	Variance
	2.8768	1.1111	4.8517	3.7406	4.3667	1.0185

Inter-item Covariances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.9223	.1856	2.4367	2.2511	13.1303	.2206

Hotelling's T-Squared =   2334.3740 F =   192.5443   Prob. =   .0000
   Degrees of Freedom: Numerator =   12   Denominator =   1066

Reliability Coefficients   13 items

Alpha =   .8598   Standardized item alpha =   .8649

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RELIABILITY ANALYSIS RESULTS - CONTINUED

3. INTENTION

```
 R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E   (A L P H A)

    1.    V55
    2.    V56
    3.    V57
    4.    V58
    5.    V59
    6.    V60
    7.    V61
    8.    V62
    9.    V63
   10.    V64
   11.    V65
   12.    V66
   13.    V67

        N of Cases =       1104.0
```

				N of
Statistics for	Mean	Variance	Std Dev	Variables
Scale	63.4176	161.4529	12.7064	13

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.8783	3.8107	6.0444	2.2337	1.5862	.4061

Item Var	Mean	Minimum	Maximum	Range	Max/Min	Variance
	2.4203	1.6635	3.6219	1.9585	2.1773	.2665

Inter-item Covariances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.8333	.2314	2.1330	1.9016	9.2164	.0920

```
Hotelling's T-Squared = 1803.0699  F =148.7574      Prob. =   .0000
  Degrees of Freedom:    Numerator =    12      Denominator =   1092
```

Reliability Coefficients   13 items

Alpha =   .8722   Standardized item alpha =   .8758

RELIABILITY ANALYSIS RESULTS – CONTINUED

4. PRIVACY AND SECURITY

R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E   (A L P H A)

```
    1.    V30
    2.    V31
    3.    V51
    4.    V52
    5.    V53
    6.    V54
    7.    V68
    8.    V69

         N of Cases =       1090.0
```

```
                                              N of
Statistics for      Mean    Variance    Std Dev   Variables
      Scale      47.9514    40.1804     6.3388        8

Item Means  Mean    Minimum    Maximum      Range    Max/Min    Variance
           5.9939     4.4119     6.6587     2.2468     1.5093      .7809

Item Var Mean     Minimum    Maximum     Range    Max/Min   Variance
         1.7811      .7466     3.3554    2.6088     4.4943     .9963

Inter-item
Covariances Mean    Minimum    Maximum      Range    Max/Min   Variance
          .4631      .0373     2.3719     2.3346    63.6620     .2459
```

```
Hotelling's T-Squared =1546.2634   F = 219.6777     Prob. =    .0000
   Degrees of Freedom:     Numerator =   7  Denominator =   1083
```

```
Reliability Coefficients     8 items

Alpha =   .7376          Standardized item alpha =   .7900
```

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RELIABILITY ANALYSIS RESULTS - CONTINUED

5. Previous Online Purchase

R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E   (A L P H A)

```
1.    V7
2.    V8
3.    V11
4.    V12
5.    V13

      N of Cases =      1122.0
```

```
                                              N of
Statistics for     Mean    Variance   Std Dev  Variables
      Scale      10.6783   29.8759    5.4659      5

Item Means  Mean    Minimum    Maximum     Range    Max/Min    Variance
          2.1357    1.7736     2.7995     1.0258    1.5784      .1759

Item Var Mean    Minimum    Maximum     Range   Max/Min   Variance
        2.0479    1.3087     3.1507     1.8419   2.4074     .5153

Inter-item
Covariances Mean    Minimum    Maximum     Range    Max/Min    Variance
         .9818       .3238     1.5358     1.2120    4.7436      .1649
```

```
Hotelling's T-Squared = 696.0192    F =  173.5391    Prob. =   .0000
   Degrees of Freedom:      Numerator =  4      Denominator =   1118
```


```
Reliability Coefficients    5 items

Alpha =   .8216          Standardized item alpha =   .8289
```

APPENDIX D

THE REFINEMENT OF THE MODEL FIT MEASURE

THE REFINEMENT OF THE MODEL FIT MEASURE
FIRST MEASURE WITH MLE
(STANDARDIZED REGRESSION WEIGHT AND FIT MEASURES)

Standardized Regression Weights			
			Estimate
AP	<--	P/S	0.556
AP	<--	POP	0.008
PI	<--	AP	0.682
v28	<--	P/S	0.409
v29	<--	P/S	0.222
v30	<--	P/S	0.916
v31	<--	P/S	0.947
v7	<--	POP	0.898
v8	<--	POP	0.73
v9	<--	POP	0.782
v15	<--	POP	0.608
a1	<--	AP	0.613
a2	<--	AP	0.673
a3	<--	AP	0.68
a4	<--	AP	0.629
a5	<--	AP	0.477
a6	<--	AP	0.604
a7	<--	AP	0.596
a8	<--	AP	0.653
a9	<--	AP	0.59
a10	<--	AP	0.663
a11	<--	AP	0.64
v65	<--	PI	0.605
v64	<--	PI	0.608
v63	<--	PI	0.625
v62	<--	PI	0.63
v61	<--	PI	0.551
v60	<--	PI	0.559
v59	<--	PI	0.471
v58	<--	PI	0.591
v57	<--	PI	0.656
v56	<--	PI	0.707
v55	<--	PI	0.689

Fit Measures								
	CMIN	DF	CMINDF	RMR	GFI	CFI	RMSEA	AIC
Default model	9490.8	401	23.66	0.35	0.55	0.56	0.14	9618
Independence	21508.3	435	49.44	0.84	0.28	0	0.20	21568

THE REFINEMENT OF THE MODEL FIT MEASURE
FIRST MEASURE WITH ASYMPTOTIC DISTRIBUTION FREE ESTIMATION

Standardized Regression Weights			
			Estimate
AP	<--	P/S	0.283
AP	<--	POP	0.043
PI	<--	AP	0.512
v28	<--	P/S	1.445
v29	<--	P/S	0.433
v30	<--	P/S	-0.689
v31	<--	P/S	-0.082
v7	<--	POP	0.982
v8	<--	POP	0.688
v9	<--	POP	0.747
v15	<--	POP	0.638
a1	<--	AP	0.736
a2	<--	AP	0.853
a3	<--	AP	0.758
a4	<--	AP	0.705
a5	<--	AP	0.336
a6	<--	AP	0.731
a7	<--	AP	0.613
a8	<--	AP	0.608
a9	<--	AP	0.522
a10	<--	AP	0.802
a11	<--	AP	0.794
v65	<--	PI	0.96
v64	<--	PI	0.834
v63	<--	PI	0.662
v62	<--	PI	0.492
v61	<--	PI	0.664
v60	<--	PI	0.878
v59	<--	PI	0.104
v58	<--	PI	0.625
v57	<--	PI	0.673
v56	<--	PI	0.937
v55	<--	PI	0.837

Fit Measures									
	CMIN	DF	CMINDF	GFI	AGFI	PGFI	CFI	RMSEA	AIC
Default model	3972.12	401	9.90	0.7	0.64	0.6	0.4	0.08	4100
Independence	6817.02	435	15.67	0.5	0.43	0.44	0	0.11	6877

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THE REFINEMENT OF THE MODEL FIT MEASURE
FINAL – CONTINUED

Standardized Regression Weights			
			Estimate
AP	<--	P/S	0.656
AP	<--	POP	0.001
PI	<--	AP	0.719
v28	<--	P/S	0.908
v29	<--	P/S	0.763
v7	<--	POP	0.869
v8	<--	POP	0.765
v15	<--	POP	0.605
a4	<--	AP	0.63
a6	<--	AP	0.498
a9	<--	AP	0.804
v62	<--	PI	0.803
v59	<--	PI	0.648

Fit Measures									
	CMIN	DF	CMINDF	GFI	AGFI	NFI	CFI	RMSEA	AIC
Default model	75.326	31	2.43	0.982	0.969	0.94	0.96	0.035	123.3
Independence	1260.386	45	28.0	0.706	0.641	0	0	0.154	1280.3

THE REFINEMENT OF THE MODEL FIT MEASURE
FIFTEENTH – CONTINUED

Standardized Regression Weights			
			Estimate
AP	<--	P/S	0.645
AP	<--	POP	0.005
PI	<--	AP	0.72
v28	<--	P/S	0.951
v29	<--	P/S	0.723
v7	<--	POP	0.852
v8	<--	POP	0.787
v15	<--	POP	0.612
a2	<--	AP	0.605
a4	<--	AP	0.707
a6	<--	AP	0.607
a9	<--	AP	0.737
v62	<--	PI	0.776
v61	<--	PI	0.635
v59	<--	PI	0.61
v55	<--	PI	0.658

Fit Measures							
	CMIN	DF	CMINDF	RMR	GFI	CFI	RMSEA	AIC
Default model	404.691	61	6.634	0.23	0.921	0.779	0.07	464.6
Independence	1630.532	78	20.904	0.947	0.682	0	0.132	1656.5

Standardized Regression Weights			
			Estimate
AP	<--	P/S	0.571
AP	<--	POP	0.002
PI	<--	AP	0.679
v28	<--	P/S	1.026
v29	<--	P/S	0.633
v7	<--	POP	0.912
v8	<--	POP	0.72
v9	<--	POP	0.795
v15	<--	POP	0.631
a2	<--	AP	0.791
a4	<--	AP	0.686
a6	<--	AP	0.587
a9	<--	AP	0.645
a10	<--	AP	0.724
v62	<--	PI	0.731
v61	<--	PI	0.577
v59	<--	PI	0.496
v55	<--	PI	0.701

Fit Measures									
	CMIN	DF	CMINDF	RMR	GFI	AGFI	CFI	RMSEA	AIC
Default model	582.55	86	6.77	0.31	0.91	0.883	0.76	0.071	650.5
Independence	2169.04	105	20.65	0.96	0.68	0.642	0	0.131	2199.0

Standardized Regression Weights			
			Estimate
AP	<--	P/S	0.659
AP	<--	POP	-0.077
PI	<--	AP	0.873
v28	<--	P/S	0.815
v29	<--	P/S	0.797
v30	<--	P/S	0.005
v31	<--	P/S	0.047
v7	<--	POP	0.938
v8	<--	POP	0.682
v9	<--	POP	0.802
v15	<--	POP	0.605
a1	<--	AP	0.659
a2	<--	AP	0.546
a3	<--	AP	0.714
a4	<--	AP	0.695
a5	<--	AP	0.898
a6	<--	AP	0.662
a7	<--	AP	0.877
a8	<--	AP	0.906
a9	<--	AP	0.78
a10	<--	AP	0.258
a11	<--	AP	0.233
v62	<--	PI	0.79
v61	<--	PI	0.776
v59	<--	PI	0.897
v55	<--	PI	0.579

Fit Measures									
	CMIN	DF	CMINDF	RMR	GFI	AGFI	CFI	RMSEA	AIC
Default model	1873	226	8.29	0.59	0.8	0.75	0.6	0.08	1973
Independence	4125	253	16.30	1.12	0.6	0.51	0	0.116	4171

VITA

Jungkun Park was born in Seoul, Korea on May 24, 1970. He received Bachelor of Art in Economics from the University of Tennessee, Knoxville in 1998. After completing his undergraduate degree, he began his Master's degree and completed his Master of Science in Economics at the University of Illinois, Urbana-Champaign in 2000. In January of 2000, he began his doctoral studies in the Department of Consumer Services Management concentrating on Retail and Consumer Sciences at the University of Tennessee, Knoxville. In summer of 2003, he completed his doctoral program with degree in Human Ecology and a minor in Statistics. He will begin his academic career as an Assistant Professor in the Department of Consumer Sciences and Retailing, at Purdue University.