2009

Innovativeness and Online Shopping Adoption

Blake Edward Hodges
Cleveland State University

INNOVATIVENESS AND ONLINE SHOPPING ADOPTION

BLAKE E. HODGES

Bachelor of Science in Psychology

Oklahoma City University

May, 2002

submitted in partial fulfillment of requirements for the degree

MASTER OF ARTS IN PSYCHOLGY

at the

CLEVELAND STATE UNIVERSITY

JUNE, 2009

This thesis has been approved

for the Department of PSYCHOLOGY

and the College of Graduate Studies by

_____

Dr. Brian Blake, Thesis Committee Chairperson

_____

Department & Date

_____

Dr. Kimberly Neuendorf

_____

Department & Date

_____

Dr. Ernest Park

_____

Department & Date

INNOVATIVENESS AND ONLINE SHOPPING ADOPTION

BLAKE E. HODGES

ABSTRACT

This study was designed to examine the role of innovativeness in online shopping. Innovativeness is one of the more widely studied phenomena in the domain of consumer research and is said to play a prominent role in the adoption of new products (Im, Bayus & Mason, 2003, Midgley & Dowling, 1978). However, issues regarding the validity of the innovativeness construct as well as its scales still remain. Using responses from an online survey given in the United States regarding online shopping habits, the effectiveness and validity of two innovativeness scales were examined both alone as well as in larger models which incorporate other variables. Direct relationships were examined with simple correlation, while the role of the types of innovativeness with other variables was tested using regression. Finally, complete models were tested using structural equation modeling. Results indicate that when used alone, the innovativeness scales are significantly related to the adoption of online shopping. However, it was found that the Doman Specific Innovativeness scale (DSI) as a predictor becomes ineffective in predicting online purchase frequency when used in a model which incorporates a measure of purchase intention. However, this effect was not seen for a new scale, the General Shopping Innovativeness scale (GSI). Results of this study will allow researchers to better understand and measure the innovativeness construct as well as increase marketers understanding of when and why people are likely to adopt innovations.

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

Figure Page

CHAPTER I

INTRODUCTION

Innovativeness is one of the more widely studied phenomena in the domain of consumer research and plays a prominent role in adoption of new products (Im, Bayus & Mason, 2003; Midgley & Dowling, 1978). Because new product adoption is said to be done by a specific group of consumers who adopt products faster than others in their social system (Rogers, 1995), knowledge regarding this group can be very valuable to behavioral scientists and marketers. Identifying these adopters can decrease the chance of new product failure (Im et al., 2003), help firms market new products, and help in other areas such as targeting, segmentation and positioning (Hirunyawipada & Paswan, 2003). In their review, Goldsmith and Foxall (2003) state six benefits of identifying innovative consumers: 1) innovators can help refine and improve new products, 2) enhance the speed of new product diffusion, thereby generating cash flow, 3) promote new products to other buyers, 4) are often heavy users of a product, 5) help create a "market leader image", and 6) may stop the diffusion of an undesirable innovation.

Even though the importance of identifying these innovators has been recognized, the study of consumer innovativeness has remained an elusive topic, yielding inconsistent

and sometimes conflicting results (e.g., Citrin, et al., 2000, Im, et al., 2003). One of the reasons for this is differences in conceptualizations of innovations. For example, traditional innovation research has focused on the behavioral aspects of the consumer, classifying innovative consumers according to how early they adopt a product in relation to other consumers (Ostlund, 1974; Rogers, 1964; Summers, 1970). However, this type of classification has been challenged on conceptual and methodological grounds (e.g., Midgley & Dowling, 1978). This has prompted others to focus less on examining the behavioral definition of innovation but instead to identify an "innovative personality", which is seen as a stable trait across many domains (Lassar, Manolis & Lassar, 2005; Midgley & Dowling, 1978). Building on this, other research has focused on the innovative consumer (Leavitt & Walton, 1975) and, further, consumer innovation in relation to a specific product or domain (Goldsmith & Hofacker, 1991) (see Table 1).

Table 1

Definition of Innovativeness at Different Levels of Abstraction

Conceptualization	**Definition**	**Measurement/Scales Used**
behavioral innovativeness	"the degree to which an individual adopts innovations relatively earlier then other members of his system" (Rogers, 1995, p.11)	Adoption/non adoption, Time of adoption
innate/global innovativeness	"a generalized unobservable trait that reflects a person's inherently innovative personality, predisposition, and cognitive style" (Im, Mason, & Houston, 2007, p. 64)	Leavitt & Walton (1975); Kirton (1976); Goldsmith et al., (2003); Hurt et al. (1977); Venkatraman & Price (1990)
consumer innovativeness	"the tendency to buy new products soon after they enter the marketplace" (Goldsmith & Foxall, p. 327, 2003)	Raju (1980); Hirschman (1980); Baumgartner & Steenkamp (1996)
domain specific innovativeness	"the tendency to learn about and adopt innovations within a specific domain of interest" (Citrin et al., 2000, p. 296)	Goldsmith & Hofacker (1991)

According to McDonald and Alpert (2007), studies on innovation can be grouped into two categories; those that focus on identifying and describing early adopters of a product, and those that attempt to identify and describe innovators. Those that attempt to identify early adopters focus on Rogers' (1995) behavioral model mentioned above and study the segment of the population who fall into the category early adopters. Studies that attempt to identify true innovators on the other hand can examine things such as general personality, attitudes related to a given product or product category, or the relationship between perceptions such as novelty seeking and perceived innovation characteristics (McDonald & Alpert, 2007).

These differences in conceptualization have led to a wide range of scales which have been developed to measure innovativeness at different levels of abstraction. In general, these scales range from a global or abstract level (cf. Hurt et al., 1977; Kirton, 1976) to consumer specific innovativeness (cf. Baumgartner & Steenkamp, 1996) to more concrete scales which attempt to measure consumer innovativeness within a specific product domain (cf. Goldsmith & Hofacker, 1991). However, different research goals and conceptualizations have also led to scales designed to measure, among other things, hedonic and social innovativeness (Roehrich, 1994), global consumer innovativeness (Tellis, Yin, & Bell, 2009) and even teen innovativeness (Hartman, Gehrt & Watchrevringskan, 2004). While a sizable number of scales have been developed to measure innovativeness at these different levels, they also are not without problems. For example, some research has found that the predictability of scales measuring innate innovativeness to be low, due in part to the generality of the measurement (Roehrich, 1994). On the other hand, findings have also lead researchers to question the validity of

more domain specific scales, such as the DSI, specifically whether they measure innovativeness per se and not some other construct such as attitudes towards a certain product or product domain (e.g., Blake et al., 2007; Park et al., 2003).

To further complicate matters, some studies use innovativeness scales independently, while others have used them with variables such as demographics, or personality traits such as novelty seeking, risk taking, social mobility and opinion leadership. In addition to comparing the direct impact of innovativeness and adoption behavior, a large number of studies have attempted to develop more sophisticated models which incorporate other constructs (e.g., perceived risk, attitudes, and cognitive style) in order to better examine what influences consumers' likelihood of new product adoption. While many of these studies base their models on previous general purpose models such as the Technology Acceptance Model (TAM) (Davis, 1989) and the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), other studies have developed completely original models, making comparison of the relative value or effectiveness of the different models difficult.

In sum, the wide range of conceptualizations, models, research goals and analysis have made it difficult to determine the effectiveness of the innovativeness construct. Indeed, when commenting on the state of innovation research it has been said: "Over decades, researchers have developed and proposed numerous scales that differ in their theoretical premise, internal structure, and purpose. There has been no attempt to synthesize the research or findings across all these different scales" (Hauser, Tellis & Griffin, 2006, p. 689).

Because of the reasons mentioned above we will begin with a review of the different definitions, concepts and research methodologies used to study this construct. To structure this review we will use the classification proposed by Midgley and Dowling (1978) in which innovativeness has been conceptualized at multiple levels of abstractness. First, we will examine the different conceptual levels of innovation independently, including relevant literature and findings, as well as the different scales used. After this, these different conceptualizations will be compared (see Table 2).

The second part will review studies which attempt to explain new product adoption by incorporating innovativeness into a larger model along with other personal (e.g., demographics) or trait variables (i.e. novelty seeking, risk taking). Finally, we will attempt to synthesize the different views in order to obtain a viable, functional, and definitional picture of consumer innovativeness.

Table 2

Review of Empirical Studies on Innovativeness

Author	**Conceptualization**	**IV**	**DV**	**Findings**
Summers (1971)	Behavioral	Time of Adoption	Demographics	Income/involvement related to time of adoption
Ostlund (1974)	Behavioral	Demographics	Time of adoption	Demographics not related/perceived risk and relative advantage related
Frank et al. (2006)	Behavioral	Demographics	Time of Adoption/attitudes	Usage and incomer related/age not
Wood & Swait(2002)	Innate	Need for cognition and need for change	Innate innovativeness	Differences in innovativeness was found among the segments based on their classification system
Im et al. (2003)	Innate	Demographics, innate innovativeness	Number of products owned in a specific category	Demographics age and income stronger predictors of new product adoption than innate innovativeness
Ha & Stoel (2004)	Innate	Innate innovativeness	# times during past 6 months used	General innovativeness related to using the

			internet to purchase or info gathering	internet to search for information, but not actual purchases
Tellis et al. (2005)	Innate	Demographics	Global innovativeness scale	Variable age explained the most variance, followed by income, mobility, education and then gender
Clark & Goldsmith (2006)	Innate	Susceptibility to interpersonal influence, attention to social comparison information	Innate innovativeness	Susceptibility to interpersonal influence was negatively related to innate innovativeness
Goldsmith (2001)	Domain specific	DSI scale	Current internet use, internet purchasing, likelihood of future purchasing,	DSI predicted hours of current internet use, internet purchasing, likelihood of future purchasing, and use of the internet to download music, few demographic variables were related to these variables
Blake et al. (2003)	Domain specific	DSI scale	# times respondent shops online (for both info and to make purchase	DSI related to internet shopping, using the internet to gather product information, # of different product classes shopped online
Park & Jun (2003)	Domain specific	DSI scale	# times purchase online per month	DSI not able to significantly predict purchasing behavior in Korean sample
Blake et al. (2007)	Domain specific	DSI scale, perceived newness	7 facet online shopping profile (OSP)	DSI predictive across nation sample, but does not interact with perceived newness
Manning et al. (1995)	Consumer/domain specific	Independent judgment making scale, consumer novelty seeking scale	New product awareness and new product trial	Consumer novelty seeking related to new product awareness, consumer independent decision making related to new product trial
Baumgartner & Steenkamp (1996)	Consumer/domain specific	Exploratory acquisition of new products (EAP), exploratory information seeking (EIS) scale	Purchase of lottery ticket, amount of time spent examining product information	Exploratory acquisition of new products (EAP) scale related to innovativeness, exploratory information seeking (EIS) has been found to be related to information seeking
Goldsmith et al. (1995)	Innate/domain specific	Domain specific innovativeness scale, innate innovativeness scale	# products owned from a list in the category fashion and new electronics	Global innovativeness more strongly correlated with DSI then with innovative behavior, DSI is more strongly

				correlated with innovative behavior, relationship between innate and innovative behavior is mediated by the DSI
Citrin et al. (2000)	Innate/domain specific	Innate innovativeness domain specific innovativeness	How often respondents used internet to purchase products over online in the past year	DSI/usage predict new product adoption, innate scale does not, relationship between innate and innovative behavior is mediated by the DSI
Lasser et al. (2006)	Innate/domain specific	Innate innovativeness, domain specific innovativeness, attitudes	Group membership (adopter and non-adopter)	Positive relationship between domain specific innovativeness/significant negative relationship for innate innovativeness and online banking

CHAPTER II

LITERATURE REVIEW

2.1 *Innovation, Innovator, and Innovativeness*

The terms innovation, innovator and innovativeness have often been given different meanings, used interchangeably, and sometimes misinterpreted altogether. Before we can review the concept of innovation, we need to clearly define the terms that are used. *Innovativeness* itself can also have several meanings. It can mean a person is creative or inventive. We might call Bill Gates or Steve Jobs innovative because of their actions. However, in the domain of consumer research innovativeness is not used to describe the producer of innovations, but the receiver of them. While there are other operational definitions of innovativeness such as Rogers (1995) temporally based definition, we will refer to innovativeness as "*inter-individual differences that characterize how people respond to new things*" (Goldsmith & Foxall, 2003, p. 324). In this definition innovativeness is a characteristic that is possessed by all people to a greater or lesser degree and influences their degree of acceptance of innovations.

Commonly, the term "*innovation*" is used to refer to the process of creating a new thing or idea. A new way of pasteurizing milk at one time was an innovation. In addition

it can also be used to refer to a new thing such as the computer. Consumer research definitions of innovation incorporate both, where innovation is *a thing, practice, or idea that is perceived to be new to the people to whom it is introduced* (Rogers, 1995)

Finally, the term innovator can refer to someone who creates new or different things. For example, Bill Gates can be viewed as an innovator. However, in our review, we use the term innovator to describe a special group of consumers. In summary, *innovators* are identified by their relative openness to *innovations*, which in turn is a measure of their *innovativeness*.

2.2 *Conceptual levels of innovation*

2.2.1. *Innovation as Behavior.*

One way consumer innovation has been defined is in terms of an individual's actual behavior. At a basic level, this is based according to whether a person adopts or does not adopt a single innovation (Midgley & Dowling, 1978; Rogers, 1995). In addition, this can be based according to how quickly a person adopts an innovation after encountering it. This type of innovativeness is known by several names including behavioral, actualized or realized innovativeness, is due largely to the work of Rogers' (1964) conceptualization of innovativeness, and has traditionally been the most common way to measure innovativeness (Goldsmith & Foxall, 2003). According to Rogers (1995) this is "the degree to which an individual adopts innovations relatively earlier then other members of his system" (p. 11). In this view innovative behavior is temporally based in relation to other members of a social system, and "innovativeness" is operationalized as the amount of time which has passed between the introduction of an innovation and the person's adoption of it (Rogers, 1995).

A large number of studies have used this conceptualization of innovation as both their independent as well as dependent variables. From a marketing perspective, innovators and early adoptors are especially important in the launch and marketing of new products (Goldsmith & Foxall, 2003). For this reason many of these early studies attempt to look for differences in personal characteristics such as demographics of innovators and early adopters versus the rest of the population.

In one study, Summers (1971) found that early adopters (as defined by time of adoption) have higher incomes and are more involved in the product. However, Ostland (1974) also examined the relationship between demographics and early product adoption and found that demographics such as age, income and education are not strongly related to time of adoption. Further, Ostland did find that other characteristics such as perceived risk and relative advantage are related to time of adoption (Ostland, 1974).

In more recent work, researchers Frank et al. (2006) identified wireless service innovators in Finland, Germany and Greece. In addition to measuring attitudes, the researcher's classified innovativeness as the amount of time since the respondent first adopted a mobile phone ranging from less than 6 months to over 6 years (Frank et al. 2006). In analyzing the results of an online survey they found that amount of usage and attitudes towards online shopping effect whether someone is an innovator or not. In addition, they found that early adopters have higher incomes, but that age does not effect when people will adopt a product (Frank et al., 2006).

While several of these studies have found correlations between demographic variables and innovations (as defined by time of adoption), other research has questioned the role that demographics play in describing innovators and predicting innovation use. In

one study researchers, Neuendorf, Atkin and Jeffres (1998), examined the adoption of two kinds of innovations, fax services and audio information services. Examining 331 respondents the researchers found that demographics and other social indicators do not play a large role in the prediction of all innovation use. Specifically, using hierarchical regression, they found that when social indicators such as age, income and political affiliation were added after other variables in the model (block 2), the set of variables become non-significant, leading to the contention that "social indicators are important in the prediction of fax use but not audio information use" (Neuendorf, et al., 1998, p. 89). Based on these results, the researchers contend that the importance of social indicators such as demographics in predicting innovators and adopters has weakened over time.

While Rogers' definition of innovativeness has been widely adopted, many researchers have questioned the validity of this view (e.g., Midgley & Dowling, 1978). According to Goldsmith and Foxall (2003), this concept of innovation is lacking due to the fact that it "confuses the behavioral phenomenon to be explained and predicted with one of the chief concepts employed to explain and predict it" (p. 325). That is, adoption is partially explained by innovativeness, but innovativeness is a latent construct in which people differ, cannot be observed, and is not the same as the act of adoption. In addition to this circular conceptualization, it has been said that people adopt for different reasons, and at the actual moment of adoption a wide range of internal and external (situational) variables may influence this decision (Midgley & Dowling, 1978). Other methodological shortcomings that have been voiced are that there would be no way to evaluate the reliability and validity of such a construct, that the findings cannot be compared across

studies, and that generalizability is limited to that single study (Goldsmith & Hofacker, 1991).

2.2.2. *Innovation as a Global Personality Trait.* Due in part to the weakness of Rogers's behavioral based conceptualization of innovation; researchers have focused on identifying innovativeness at a more abstract level. This type of innovativeness has been known by several names including innate or general innovativeness (Citrin, Sprott, Silverman & Stem, 2000) and global innovativeness (Goldsmith, 1991). We will refer to this conceptualization of innovativeness as innate or global innovativeness (Midgley & Dowling, 1978). Innate innovativeness can be defined as "a generalized unobservable trait that reflects a person's inherently innovative personality, predisposition, and cognitive style" (Im et al., 2007, p. 64). At this level, researchers have primarily focused on examining consumer's innovativeness without a specific referent or domain, attempting to understand the construct by examining aspects of the consumers themselves. This view of innovativeness as a universal trait possessed by all individuals makes sense conceptually, as Citrin et al. (2000) state "all individuals…in the course of their lives, adopt some objects or ideas that are new in the context of their individual experience" (p. 295).

Much of the work on innate innovativeness sprang from authors Midgley and Dowling (1978) who proposed measuring innovation through the use of a cross-sectional approach. Specifically, they had respondents identify the number of products from a list of new products that they had adopted. Through the use of a list as opposed to a single observation, the authors argued respondents are not subject to the influence of external or situational variables, and that this cross-sectional method measures innovation at a higher

level of abstraction. Still not fully breaking from Rogers's diffusion framework, the authors contend that innate innovativeness is based on communication independence. According to this, it is defined as "the degree to which the individual is receptive to new ideas and makes innovation decisions independently of the communication experiences of others" (Midgley & Dowling, 1978, p. 236).

Related to this, Clark and Goldsmith (2006) examined the relationship between a person's susceptibility to interpersonal influence (in a consumer context), attention to social comparison information (regarding product choices), consumption habits and innate innovativeness. The authors define interpersonal influence as the degree to which individuals enhance their self image to important others through the purchase and/or use of products and brands, are willing to conform to others expectations regarding purchases, and learn about products and services by observing and seeking information from others (Clark & Goldsmith, 2006). This was measured by a scale developed by Bearden et al. (1989) which measures consumer's susceptibility to interpersonal influence as a personality trait that varies across individuals (Clark & Goldsmith, 2006). Further, attention to social comparison information is defined as the "extent to which individuals are influenced by what others may think about their product selections and use" (Clark & Goldsmith, 2006, p. 36). Innate innovativeness was measured using a scale measured by Hurt et al. (19767 which measures willingness to try new things. Using survey data from 326 college students, the researchers found that interpersonal influence, as well as attention to social comparison was negatively correlated with innovation, suggesting that innovators are less likely to be influenced by others and do not pay attention to social cues when making purchase decisions. However, after simple

correlations the authors ran a regression analysis in which innate innovativeness was the dependent variable and found only susceptibility to interpersonal influence was significantly related to innate innovativeness.

While these results seem promising, the authors themselves question the validity of the findings; specifically they state that since they "conceptualized and measured innovativeness at the domain general level and not the domain specific level of a product category, the extent of the generalizability of our findings depends on replicating them in multiple product categories" (Clark & Goldsmith, 2006, p. 41). In addition, interpersonal influence and attention to social comparison information were also measured at a general level, which could also limit the generalizability because, as several studies have shown both susceptibility to interpersonal influences as well as attention to social comparison information to be situational or topic specific (Clark & Goldsmith, 2006).

Another study which examined innate innovativeness was done by researchers Wood and Swait (2002). Building on the work of Vankatraman and Price (1990), the researchers stated that "innovators have previously been predicted to be both comfortable with novelty or stimulation and prone to cognition" (Wood & Swait, 2002, p. 2). Because of this, the researchers attempted to examine the differences in individuals' innovativeness when classified into groups based on two variables, need for cognition and need for change. The researchers define need for change as the amount to which people innately value novelty and innovation. In addition they further describe it as an individual's "comfort level" with change. Need for cognition is described as the amount that individuals engage in and enjoy thinking "for the sake of thinking". Using latent class analysis authors tested the theoretical structure which predicted four distinct

segments: 1) high need for cognition and high need for change, 2) high need for cognition, low need for change, 3) low need for change and high need for cognition, and 4) low need for cognition and low need for change. The authors found differences in innovativeness among the segments and that each latent segment corresponded to the predicted segments (Wood & Swait, 2002).

In their 2004 study authors Ha and Stoel used Rogers (1995) Diffusion of Innovations (DOI) model as the framework to examine the adoption of internet apparel shopping. The researchers state that the nature of online apparel shopping makes it risky due to the fact that consumers may not be able to physically examine the attributes of the product such as color or size and fit (Ha & Stoel, 2004). Because of this the researchers believe that innovative people might be more likely to adopt the internet for apparel shopping than non-innovative people. In order to examine general innovativeness the researchers used scales developed by Leavitt and Walton (1975) as their independent variable. As a dependent variable the researchers examined both online apparel purchasing behavior, defined as the amount of times during the past 6 months the respondent had used the internet for purchase of apparel related products and online apparel information gathering, which was how many times in the last 6 months the individual used the internet to gather information related to apparel products. Through a convenience sample survey of 178 college students, they found that general innovativeness is related to using the internet to search for information, but not actual purchases. They state that because internet shopping is an innovative behavior the fact that it is not related to innovativeness refutes Rogers framework (Ha & Stoel, 2004).

Related to this, researchers Im et al. (2003) examined the relationship between innate innovativeness, personal characteristics and adoption of new products. To determine adoption characteristics the researchers used the cross-sectional method proposed by Midgley and Dowling (1978). The data was gathered from a household panel concerning a list of 10 products in the domain of consumer electronics. To test the predictive ability of innate innovativeness the researchers used the Kirton adaptation-innovation inventory (KAI). In addition the respondents were asked a host of personal or demographic variables such as age, income and education. Using structural equation modeling the researchers found the best predictors of new product adoption were personal characteristics, especially age and income. While they did find a significant relationship between innate innovation and new product adoption, they state that the relationship is weak (Im et al., 2003). Further the researchers found no relationship between personal characteristics and innate innovativeness and that these personal characteristics did not moderate the relationship between innate innovativeness and new product adoption. Indeed, as Roehrich states "when measured at a general level, innovativeness has no predictive validity" (p. 675). In response to these findings, researchers have developed scales which conceptualize innovativeness at a less general level of abstraction.

In another study, researchers Tellis, Yin & Bell (2009) conducted a cross-cultural study to create a scale which attempts to measure innate innovativeness across cultures. To examine this the authors first gave a survey involving 15 different countries examining possible determinants of innovativeness including novelty seeking, risk taking, variety seeking, enjoyment, stimulus variation, opinion leadership, eagerness,

inertia, frugality, and suspicion. From these items the authors identified 3 basic factors: openness, enthusiasm, and reluctance which they believed were related to innate innovativeness. As a dependent variable the authors examined how well each factor predicted aggregated market penetration for 16 different products for each country. Market penetration numbers were found from Euromonitor's market data. It was found that of the three factors only reluctance was significantly related to innovativeness. Further the authors examined demographic variables across the different countries. The variables they examined were: gender, age, education, income, family size, and mobility. In order to examine their relationship with innovativeness and demographics they regressed these variables onto the significant innovativeness factor, reluctance. Results indicate that 5 of the 6 demographic variables were related to reluctance. The variable age explained the most variance, followed by income, mobility, education and then gender. Family size was insignificant. The results suggest that the profile of an innovator across countries is someone who is wealthy, young, mobile, educated, and male, and that a negative valenced measure of innovativeness, reluctance, may be better at examining innovativeness across cultures.

In their review of consumer innovativeness Roehrich (2004) describes four possible explanations for innate innovativeness: innovativeness as an expression of need for stimulation, innovativeness as an expression of need for novelty, innovativeness as an expression of independence of others' communication, and innovativeness as an expression of need for uniqueness. The author goes on to review several different kinds of scales which have been developed to measure innovativeness at this level. These scales can be described as *life innovativeness scales* because they do not specifically focus on

purchasing innovativeness but tap it at a more general level. He describes them as measuring the general ability to accept newness in a person's life (Roehrich, 2004, p. 673).

The most widely adopted of these life scales is Kirton's (1976) innovators-adaptors inventory (Hauser, Tellis, & Griffin, 2006). In this scale Kirton defines innovators as people who have a tendency to search for new and original problems and solutions within an organization (Roehrich, 2004). In addition to the KAI other examples of scales which tap innovativeness at a general level include Levitt and Walton's (1975) scale and Hurt et al. (1977) scale. As a whole these scales are found to have good psychometric properties, be multidimensional and are said to be very close to each other. However, because of their high level of abstractness they are said to have poor predictive validity. For this reason they may not be very successful at predicting the adoption of a specific product or product category (Roehrich, 2004).

To sum up, innovativeness at this level is described as an innate or global personality trait which is present in all individuals to some extent (Midgley & Dowling, 1978). In addition to the studies reviewed above, other studies have attempted to identify a wide variety of components which are thought to relate to innovativeness including *openness to change* (Goldsmith, 1984; Hurt et al., 1977; Raju, 1980; Steenkamp & Baumgartner, 1992), *novelty seeking* (Goldsmith, 1984; Hirschman, 1980; Rogers, 1995), *perceived risk* (Goldsmith, 1984; Hirunyawipada & Paswan, 2006; Steenkamp & Baumgartner, 1992), *need for cognition and need for change* (Wood & Swait, 2002), and *opinion leadership (*Goldsmith et al., 2003; Im et al., 2003; Rogers, 2003*)* . In describing the results of these studies researchers Wood and Swait (2002) state that "most studies

describe the innovative consumer as a dynamic, curious, communicative, stimulation-seeking, venturesome, and cognitive individual" (p. 2).

However, while studies have found success in identifying related components, the overall predictive validity of innovativeness at the innate level of measurement is low. Further, as we will see, several studies have found that the relationship between innate innovation and actual behavior is mediated by a more domain specific measure of innovativeness, and after taking this more specific level of innovativeness into account, innate innovativeness's ability to predict innovative behavior is severely limited.

2.2.3. *Domain Specific Innovativeness.* While Midgley and Dowling (1978) proposed a hierarchy that has been widely adopted for the classification of different types of innovativeness, their methodology and operational definitions for measuring innovativeness have been strongly criticized. For example, Goldsmith and Flynn (1992) argue that it would be very difficult to administer such a scale. One reason for this is that each time the researcher has to determine which product categories are selected, which products are selected within each of these categories and which products are new. Besides these administrative issues, it has been argued that because the cross-sectional procedure is an aggregated measure from a wide variety of products, the construct tapped is more abstract then intended and is not a measure of innovativeness in any specific product category and is therefore not as useful as it could be to marketers and researchers (Goldsmith, 1995; Goldsmith & Flynn, 2002). It is defined as "the tendency to learn about and adopt innovations within a specific domain of interest" (Citrin et al., 2000, p. 296).

This has lead researchers to develop scales which measure innovativeness at a less abstract level. Some of these scales specifically relate to consumer innovativeness while others measure innovativeness in certain domains. In his review, Roehrich (2004) describes these scales as *adoptive* innovativeness scales, and explains that they are designed to focus specifically on the adoption of new products as opposed to innate or *life* innovativeness scales, which are designed to tap innovativeness at a more general level. Examples of these scales include Raju's (1980) innovativeness scale, Baumgartner and Steemkamp's (1996) Exploratory Buying Behavior Tendency (EBBT) scale, and Goldsmith and Hofacker's (1991) Domain Specific Innovativeness Scale. The author found that these scales have better predictive validity than other scales discussed in the previous sections, which attempt to measure innovativeness at a more general or abstract level (Roehrich, 2004).

Goldsmith and Hofacker (1991) developed such a scale that measures innovativeness within a specific domain or product category. Basing their scale on King and Summer's (1971) opinion leadership scale and Hirschman's (1980) scale the researchers tested the domain specific innovativeness (DSI) scale over six studies. The first study was designed to test the items in the scale. The researchers tested these items using college students in the domain of rock music. Innovativeness was measured in four different ways relating to their purchasing habits in that domain. These four measures were done by self report and were designed to improve on some of the methodological issues with the cross sectional method used by Midgley and Dowling (1978). The second study repeated the first and tested students' innovativeness in the domain of rock music but this time with a different sample. The results of these two studies showed the scale to

be balanced, unidimensional and reliable. The third study was similar to the first two but in a different product domain, fashion innovativeness. The fourth study went beyond the student population and used actual consumers to test the validity of the scale, this time in the domain of new clothing and household electronics. It should be noted however that this study was slightly different from the previous ones in the fact that only a single measure of innovativeness was used; the number of products owned from a list of new products in the two domains. The fifth study was designed to examine test-retest reliability, predictive validity, and social desirability. Using college students again, the researchers tested these psychometric properties in the domain of rock music and found positive results. Finally convergent and discriminant validity were tested in the sixth study. Over the six studies the researchers developed a six item self report scale that is both reliable and valid. In addition the researchers found the scale to be applicable over different product domains (Goldsmith & Hofacker, 1991).

Because of the relative newness of the internet, the domain of online shopping has provided a fertile ground for the study of innovativeness. The usefulness of the DSI was tested another in study by Goldsmith (2001), in the domain of internet shopping. Using a sample of 117 students, the author found that the DSI predicted hours of current internet use, internet purchasing, likelihood of future purchasing, and use of the internet to download music. In addition, the authors found few demographic variables were related to these variables.

In another study which examined innovativeness and online shopping, Blake et al. (2003) surveyed 208 internet users to examine the relationship between internet shopping and innovativeness. Supporting earlier results they found that the DSI is related to

internet shopping. In addition they found that the DSI is also related to using the internet to gather product information. This would seem to support Baumgartner and Steenkamp's (1996) two factor view of exploratory buying behavior in which exploratory purchasing can be subdivided into exploratory acquisition of new products (EAP) and exploratory information seeking (EIP). In addition Blake et al. (2003) found that the DSI is related to the number of different product classes shopped online, and that this relationship is stronger in the more popular product classes than the unpopular ones. Another interesting finding is that when internet shopping innovativeness is controlled, the relationship between internet experience and online shopping is reduced. This is important as several studies have found a strong relationship between internet experience and online shopping (e.g., Citrin et al., 2000).

However, evidence for the effectiveness of the DSI in a cross-cultural context has been mixed. For example, in their 2003 study, researchers Park and Jun examined the relationship between internet usage, domain specific innovativeness, perceived risk, and internet shopping in Korea and the United States. They found that the two countries significantly differed in internet usage and perceived risks, with Korean users spending more hours per week on the internet and having a higher perceived risk. However this did not translate into differences in buying intention or online buying experiences between the two samples.

Importantly, the researchers also found that the DSI was not able to significantly predict actual purchasing behavior (Park & Jun, 2003). The authors speculate this could be due to the fact that the Korean sample assumed that use of the internet itself is innovative and rated themselves higher. In addition, they speculate that this difference in

scores on the DSI could be offset with a higher perceived risk in the Korean sample. These results seem to refute the findings of other researchers (cf. Citrin et al., 2000). However, it should be noted that the dependent variable was not actual behaviors but intention and attitudes towards online shopping. In addition other cross-cultural research has found that scales based on mixed valenced Likert type formats can have problems with equivalence in a cross-cultural context (Wong, Rindfleisch & Burroughs, 2003). The results above lead one to question the validity of the DSI and to ask what impact perceived newness or novelty of the innovation could have on the predictability of the DSI.

While the majority of studies have found the DSI to be related to consumer adoption behavior (Blake et al., 2003; Citrin et al., 2000; Goldsmith 2000; Park et al., 2006), evidence has been found which could call the validity of the scale into question. In their 2007 article Blake et al., examined the relationship between innovativeness, perceived newness and online shopping adoption in a multi-national context. As opposed to a unidimensional measure, online shopping adoption was broken down into a seven facet online shopping profile (OSP). Using the DSI as their measure of innovativeness they found overall predictive validity for the scale to be good, being related to most facets of OSP. However, they also found that the DSI was predictive for people regardless of whether or not they viewed the innovation as new. This would seem counter-intuitive due to the fact that a person's innovativeness is traditionally defined as the readiness to try something perceived as new.

Results found by Citrin et al. (2000) could also be viewed as questioning the validity of the DSI. In their study, they found previous internet usage to be the strongest

predictor of online purchasing. However, they found that "every standard deviation increase in the level of domain specific innovativeness results in a .15 standard deviation increase in the effect of internet usage on the adoption of the internet for commerce" (Citrin et al., p. 298). They explain that general use of the internet is a form of vicarious adoption and may facilitate using the internet for commercial purchases and speculate that the DSI will actually work better for those who have more experience with online use in general.

Besides the domain specific innovativeness scale developed by Goldsmith and Hofacker, numerous scales have been developed to measure innovativeness not at the general personality level but at a more specific level (e.g., Baumgartner & Steenkamp, 1996; Hartman, Gehrt & Watchrevringskan, 2004; Hirschman, 1980; Raju, 1980; Tellis, Yin & Bell, 2005). Because many of these scales are measured in the general domain of consumer purchasing innovativeness, but not within a given product category, some researchers (e.g., Goldsmith & Foxall, 2003) have classified this level of innovativeness specificity as a subcategory which is less abstract than innate innovativeness, but more abstract than domain specific innovativeness. Goldsmith and Foxall (2003) call this consumer innovativeness and define it as a tendency to buy new products soon after they appear in the marketplace (Goldsmith & Foxall, 2003). One of the earliest of these scales is Raju's (1980) innovativeness scale, which is part of a larger scale designed to measure consumer's tendencies towards exploratory behavior and was proposed to be strongly related to buying behavior.

Building on Raju's work, authors Baumgartner and Steenkamp (1996) developed a scale in which exploratory consumer buying behavior is broken down into two separate

factors. The first factor involves the exploratory acquisition of new products. The second factor is exploratory information seeking. In their (1996) article, the authors propose and test the exploratory buying behavior tendency scale (EBBT). This scale has two sets of questions measuring the two factors. The first factor, exploratory acquisition of new products (EAP), is described as a desire to seek sensory stimulation in product purchases through risky and innovative product choices. The second factor, exploratory information seeking (EIS), is obtaining cognitive stimulation through the acquisition of consumption relevant knowledge (Baumgartner & Steenkamp, 1996). Over six studies in two countries the authors found the two subscales to be distinct facets of exploratory buying behavior and each scale had strong convergent as well as discriminant validity (Baumgartner & Steenkamp, 1996). Further, the researchers found the EAP scale to be strongly related to innovativeness (as defined by whether or not the subject purchased a lottery ticket) and the EIS to be related to information seeking (the amount of time spent examining product information). In support of this, Roehrich, 2004 states that these scales have been found to be strongly related to other constructs such as stimulation need and sensory sensation seeking. It has also been found to exhibit strong predictive validity, being correlated with variety seeking as well as the innovative behavior such as the purchase of lottery tickets (Roehrich, 2004).

The scale developed by Baumgartner and Steenkamp (1996) has also been tested in a cross-cultural context by Singh (2005). In this study a cross national sample was used to investigate the relationship between adoption of innovations among different countries. Using the four dimensions of Hofstede's cultural values to distinguish between two different cultures, Germany and France, the authors used country as an independent

variable and the country's score on the Baumgartner and Steenkamp (1996) exploratory acquisition of new product (EAP) scale as a measure of consumer innovativeness. Comparing the differences in means between the two samples, the author found that the two countries significantly differed in innovativeness. Further, the authors examined differences in Hofseteds's cultural dimensions between the countries to examine if they are related to innovativeness. The author found that weak uncertainty avoidance, small power distance, and masculinity are all associated with more innovativeness.

Another scale which was designed to explicitly test consumer innovativeness was developed by Manning et al. (1995). The researchers break down two forms of consumer innovativeness. The first type of innovativeness involves independent judgment making, which the authors define along the lines of Midgley and Dowling (1979) as the degree to which an individual makes decisions independent of the communication of others. The second is consumer novelty seeking, which is defined as a desire to seek out novel information regarding new products. Using confirmatory factor analysis in three different samples, the authors find that consumer novelty seeking is related to new product awareness and that consumer independent decision making is related to new product trial. And that the scales had high internal consistency as well as reliability (Manning, Bearden & Madden, 1995).

In summary, the conceptualization of innovativeness at this level has been shown to have advantages over innate innovativeness. Most importantly, studies have shown that the scales developed at this level have a higher predictive validity than scales which were developed to tap innovativeness at the general or innate level (Roehrich, 2004). Further, as we will review next, studies have shown that domain specific innovativeness

can mediate the relationship between innate or general innovativeness, and when taken into account, the variance directly explained by innate innovativeness scales decreases significantly (Citrin et al., 2000; Goldsmith et al., 1995; Im et al., 2003). Taken into account this seems to imply that people who are innovative in one domain may not actually be innovative in another. For example, a person who is innovative in the domain of fashion may not be innovative in the domain of technology. Finally, in addition to domain specific innovativeness, some researchers specify another level of the innovativeness construct, consumer innovativeness (Goldsmith & Foxall, 2003). This level of innovativeness is less abstract than innate innovativeness, but more abstract than domain specific innovativeness.

2.3. *Comparison of levels of abstraction*

In addition to examining studies from a behavioral, innate or domain specific level of innovativeness, several studies have examined the relationships between these different levels of abstraction, including the different scales predictive validity and the extent to which domain specific innovativeness mediates the more abstract innate innovativeness.

In one such study authors Goldsmith, Freiden and Eastman (1995) conducted a survey of 456 respondents which compared the predictive validity of domain specific innovation to innate or global innovation in two different domains; clothing and consumer electronics. As a measure of global innovation the authors used a 6 item form of a scale created by Hurt et al. (1977) which the authors state can be interpreted as a consumers' willingness to try new things (Goldsmith et al., 1995). To measure domain specific innovativeness the authors used the scale developed by Goldsmith and Hofacker

(1991). The authors speculated that global innovativeness is correlated with both DSI and concrete behaviors, but it is correlated more strongly with DSI. DSI on the other hand, is more strongly correlated with innovative behavior, that is, actual purchasing behavior. To examine this the author's first factor analyzed both innate innovativeness and the domain specific scales and found that each of these scales measured separate constructs and were unidimensional. Next the authors determined the predictive ability of each type of innovativeness using regression analysis.

It was found that global innovativeness was more strongly correlated with DSI than with actual innovative behavior. In addition, DSI is more strongly correlated with innovative behavior than global innovativeness. Finally, the association between innate innovativeness and innovative behavior was found to be mediated by the DSI and when factoring in the DSI the relationship approaches zero. Mediation was assessed through examining the partial correlations between global innovativeness and purchasing behavior controlling for DSI. The results of this study further reinforces the contention that a general personality trait is often a poor predictor of actual behavior and that for predictive purposes the domain specific innovativeness construct is going to have a stronger relationship with actual behavior. However, as with other studies, the authors did not directly test the "innovativeness" of the behavior in question. Because of this, there is no way of knowing whether the individuals actually perceived the innovation as innovative.

In another study Citrin et al. (2000) surveyed 403 undergraduate students in order to determine how well each of the two types of innovativeness (innate and domain specific) predict internet shopping. Using regression they find that internet shopping is

best predicted by actual usage, which was measured by the number of hours per week respondents used the internet either for communication purposes or as a search tool for education or entertainment. However, they found that this relationship was moderated by the DSI. Specifically, as people's scores on the DSI increase, the effect of internet usage on adoption of the internet for commerce also increases (Citrin et al., 2000, p. 299). In addition, domain specific innovativeness itself was significantly related to internet shopping habits. Further, the researchers found that innate innovativeness was not related to adoption of internet shopping and further did not moderate the relationship between usage and internet shopping. The results of this study seem to imply that domain specific innovativeness as well as internet usage has a direct impact on internet shopping. In addition, as with other studies (e.g., Goldsmith et al., 1995), the DSI was found to moderate the relationship between internet usage and internet shopping. Finally innate or open processing innovativeness was not found to be related to internet shopping.

Researchers Lasser, Manolis and Lassar (2006) examined the relationship between innovation (both innate and domain specific), attitudes and adoption of online banking. To do this they incorporated the technology acceptance model (TAM) to predict banking adoption. Conducting a survey of 349 college students the researchers used Rogers (1995) conceptualization of innovation as a dependent variable in which they classified innovativeness into two categories "adopter and non-adopter". Because of this logistic regression was used to test the relationship between attitudes and the different types of innovation to adoption behavior. Interestingly the researchers found that while there was a positive relationship between domain specific innovativeness and online banking, there was a significant negative relationship for innate innovativeness.

Specifically, the higher an individual was in innate or general innovativeness the less likely they were to adopt online banking. In attempting to explain these results the researchers state that it could be possible that the nature of purchasing a financial product online is different than the purchasing of other products online, and that in general online shoppers are different than traditional (offline shoppers). Finally, the researchers found no relationship between demographics age, education and online banking but a significant relationship for income.

Taken together the results of these studies would seem to support the contention that domain specific innovativeness is a better predictor of new product adoption then innate or general innovativeness (Citrin et al., 2000; Goldsmith et al., 1995; Im et al., 2003). In addition, while many of the studies which explicitly tested the predictive validity of scales based on different levels of abstraction used the DSI as a measure of domain specific innovativeness, other reviews have maintained that the predictive superiority of measuring innovativeness at this level can be applied to other scales as well (Roehrich, 2004).

2.4. *General Purpose Models*

In addition to comparing the direct impact of innovativeness and adoption behavior, a large number of studies have attempted to develop general purpose models which incorporate other variables (e.g., perceived risk, attitudes, and cognitive style) in order to better examine what influences consumers likelihood of new product adoption. In this section we will provide a brief overview of four of these models which have served as a framework for other research. Some of these models such as Fishbein & Ajzen's Theory of Reasoned Action (1975) were developed to predict behavior in general

and have been applied to the innovativeness field. Others such as the Technology Accpetance Model (TAM) (Davis, 1989) were developed specifically to explain adoption. In addition, we will review models developed intentionally to predict the adoption of innovations in a consumer context. In addition to highlighting the role innovativeness plays in adoption in a larger context, these models could help identify alternative variables which might play a role in the adoptions of innovations.

2.4.1. *Diffusion of Innovation model.* One of the first models developed to explain innovativeness was Rogers' (1995) diffusion of innovations (DOI) model. In his seminal work Rogers (1995) states that all adopters of an innovation fall somewhere on a normally distributed curve. An individual's location on this curve represents the time that the individual adopts a innovation relative to the other members in their social system. Based on how quickly an individual adopts an innovation Rogers states that people can fall into one of five categories. The first category is "innovators". According to Rogers (1995), this group is highly venturesome and can handle a high degree of uncertainty. "Early adopters" are the second to adopt a product, after innovators. This group is said to have a high degree of opinion leadership, and they serve to decrease uncertainty among others about an innovation. Following this group is the "early majority". Next is the "late majority", a group which can be characterized by skepticism, and they are motivated by peer pressure to adopt a product. Finally is the "late adopter" or "laggards". This group is the last to adopt a new product, and, by the time they do, it's not usually that new. They are characterized by making decisions based on past experience and want to wait until the innovation has a proven track record.

According to this model, the likelihood that someone will adopt a product or not is based on five attributes of the innovation. The first is relative advantage, which is the degree to which the innovation is better than what it supersedes. The second is compatibility, which is the extent to which the innovation is perceived to be consistent with existing values, past experiences and present needs. The third is complexity, which is the degree to which the innovation is easy to understand and use. The fourth is trialability which is the degree to which the innovation can be used on a limited basis. The fifth is observability, which is the degree to which a person can see and understand the results of adopting the innovation before the full adoption.

Further, according to Rogers (1995) innovations can spread to other members of the social system through a communication process called diffusion. This is basically the spread of the innovation from adopters to non-adopters, and in marketing terms could be seen as the increasing popularity or use of a product in the market. The spread of an innovation is said to involve five basic stages for the individual; knowledge, persuasion, decision, implementation and confirmation. Knowledge is where members first gain information about the innovation (e.g., “I found a new kitchen appliance that does this/has these aspects”). In persuasion, members use this knowledge to develop an attitude about the innovation (e.g., “This new kitchen appliance is great!”). This stage is particularly important because sometimes consumers may perceive an innovation as useful but may not adopt it. This can happen when they either a) do not view it as useful or relevant, or b) are conflicted about its usefulness or relevance. Next is the decision stage where participants decide to adopt or reject the innovation (e.g., “I am going to buy this kitchen appliance”). The implementation stage is where consumers act on this

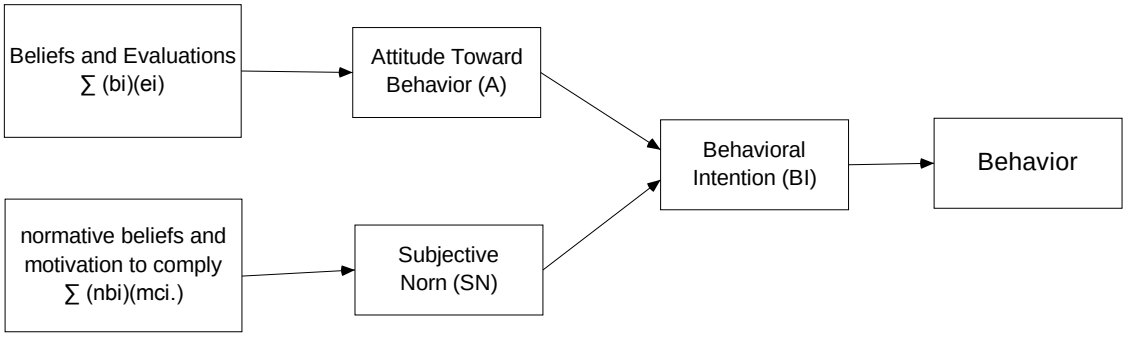
decision. Finally there is the confirmation stage in which consumers reconsider the innovation as a function of their satisfaction or dissatisfaction and decide whether to continue use of the innovation.

2.4.2. *Theory of Reasoned Action.* Many of the models used to explain why an individual chooses to adopt or not adopt a product are based on the Fishbein and Ajzen's (1975) Theory of Reasoned Action (TRA). This model states that an individual's behavior is determined by their behavioral intention (BI). Because of this the model can be classified into a broader category called intention models (Davis, Bagozzi & Warsaw, 1989). In the TRA, an individual's intention is a product of the individual's attitude (A) and their subjective norm (SN) (Fishbein & Ajzen, 1975). The basic model of behavior states that:

$$BI = A + SN$$

Figure 1

Theory of Reasoned Action



Note: Figure adapted from Davis, Bagozzi & Warsaw, 1989, p. 894

A person's attitude (A) is defined as positive or negative feelings regarding the attitude object or target behavior (Fishbein & Ajzen, 1975). These feelings are in turn a product of the individuals beliefs regarding the probability that performing a given

behavior will have a certain consequence (b_i) and their evaluations (defined as positive or negative affect connected to the outcome) of the consequences (e_i) Based on this a person's attitudes are:

$$A = \sum (b_i)(e_i)$$

Further the TRA postulates that behavioral intention is also influenced by a person's subjective norms (Fishbein & Ajzen, 1975). These normative beliefs (nb_i) are said to be the function of an individual's perceived expectations of the desires of reference others that the individual perform the behavior in question, and the individual's motivation to comply (mc_i.):

$$SN = \sum (nb_i)(mc_i.)$$

In relation to consumer adoption according to this model the likelihood of individual's adoption of an innovation will be the sum of their attitudes (A) and subjective norms (SN). This model provides researchers with a theoretical foundation to examine the factors that predict behavior, and the generality of this model allows it to be applied to a wide variety of domains (Davis, Bagozzi & Warsaw, 1989).

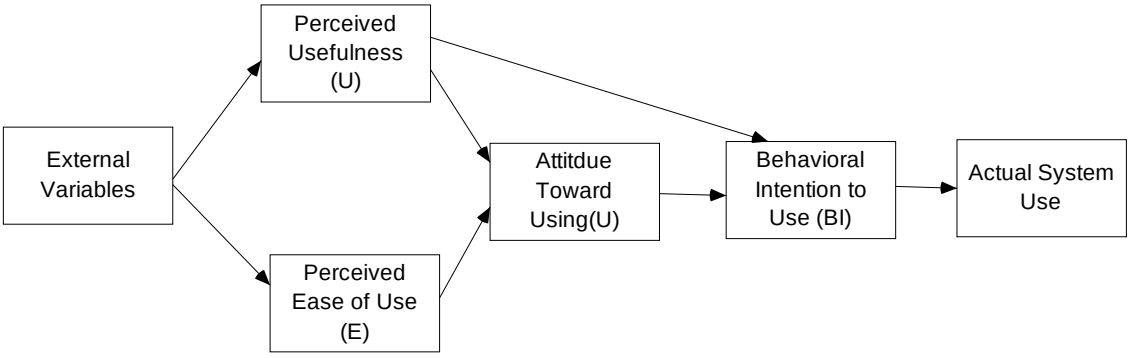
2.4.3. *Technology Acceptance Model.* Building on Theory of Reasoned Action model Davis (1989) developed the Technology Acceptance Model (TAM). This model was specifically developed to explain what makes an individual adopt different technologies. However, this model is less broad than Roger's diffusions of innovation model because it pertains specifically to the adoption of new technology. Like the TRA, this model states that behavior is directed by intention, which is in turn directed by attitude. According to this model, there are two basic beliefs that influence a person's attitude towards a technology: 1) perceived usefulness (U), which is the individuals

perceived benefits that could come from adopting the technology and 2) perceived ease of use (E), which is based on the individuals perceptions of how difficult it will be to learn how to use the new technology (Davis, Bagozzi & Warsaw, 1989) thus:

$$BI = A + U$$

Figure 2

Technology Acceptance Model



Note: Figure adapted from Davis, Bagozzi & Warsaw, 1989, p. 895

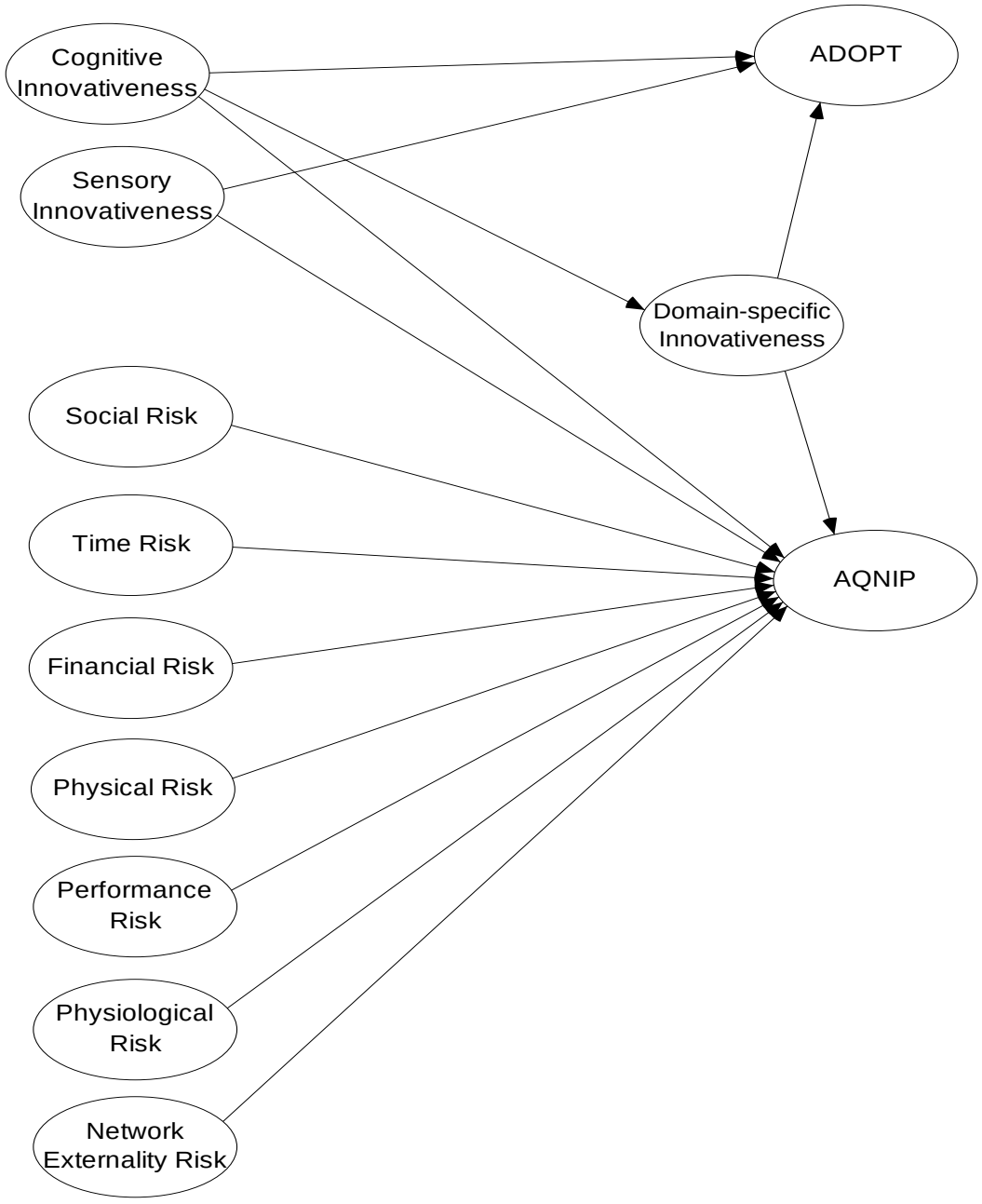
While both the TRA and TAM models state that behavior is determined by an individual's intention, the TRA differs due to the fact that the TAM does not include subjective norms as a direct influence on intention but instead posits that perceived usefulness (U) directly influences behavioral intentions. The author's state that this is because in organizational settings (where the TAM was originally applied) behavior is based more on the likelihood that it will increase job performance more than any other factor (Davis et al., 1989).

2.4.4. *Consumer Adoption Models.* In a study that went beyond direct relationships between innovation and purchasing behavior, researchers Hirunyawipada and Paswan (2006) examined the relationships between both innate and domain specific innovativeness, risk perception and adoption of new products in the domain of high technology. Analyzing data from a sample of 746 college students the researchers tested a

hierarchical model which incorporated multiple levels of innovativeness, perceived risk, and new product adoption (see Figure 3).

Figure 3

Hierarchical Model from Hirunyawipada & Paswan, (2006)



Note: Figure adapted from Hirunyawipada & Paswan, 2006, p. 186

In order to test this relationship the researchers distinguish between two measures of adoption. The first measure was actual adoption of product (ADOPT). This was measured by the self-reported number of new products respondents indicated they owned form a list of high tech products. The list of new products used in the study was based on three criteria. The first was that the subjects were actually able to adopt the products, the second criteria was that these products were to be perceived as high technology, and the third was that the product met the criteria set by Rogers (1995), (relative advantage, compatibility, complexity, trialability, and observability). The other adoption measure was Acquisition of Novel Information (AQNIP). This variable was measured from a scale adapted from Baumgartner and Steenkamp (1996) and operationalized as "the extent to which consumers acquire novel information associated with high-end products and avoid the adoption of new products" (Hirunyawipada & Paswan, 2006, p. 189).

Innate or global innovativeness was also broken down into two dimensions; cognitive and sensory. Cognitive innovativeness is defined as the enjoyment of evaluating information, learning about cause and effect, discovering facts about products as well as learning how to use them (Hirunyawipada & Paswan, 2006). Sensory innovativeness was defined as the degree to which individuals seek arousal and stimulation information that is associated with new products. Cognitive and sensory innovators were identified using a scale based on Venkatraman and Price (1990).

In addition the researchers used Goldsmith's and Hofacker's (1991) scale to measure domain specific innovativeness. The researchers hypothesized that innovativeness at this level would be associated with both adoption measures (AQNIP and ADOPT). Finally the authors examined perceived risk. This was measured through

two different scales and was broken down into six kinds of risk: social, time, financial, physical, performance, psychological, and network externality risk. Based on their review of previous literature, the authors hypothesized that perceived risk enhances people's motivation to acquire novel information about a product, but would not actual adoption. Because of this the authors specifically looked at the relationship between the different kinds of perceived risk and AQNIP.

Using structural equation modeling, the authors were able to obtain general support for the proposed hierarchical model. Specifically, they found that domain specific innovativeness does mediate the relationship between global innovativeness and product adoption and that domain specific innovativeness is a better predictor of actual adoption then cognitive or sensory innovativeness. Further, the authors found that without the presence of domain specific innovativeness, cognitive innovativeness is related to actual adoption while sensory innovativeness is related to acquisition of novel product information. In addition, the authors found that the proposed model, which incorporated perceived risk, showed significantly better fit than the basic hierarchical model (i.e., multilevel approach in which innate innovativeness is mediated by domain specific innovativeness in predicting innovative behavior) and that an increase in sensory innovativeness plus perceived social and physical risks resulted in an increase in novel information seeking but not actual adoption. They believe this is because when consumers perceive risk, they seek out new information to ensure whether the uncertain consequence of new product adoption is at their acceptable level. This study supports the hierarchical model of innovativeness and highlights the salient role that risk plays in adoption, specifically the adoption of novel product information. However, one possible

drawback of this study is that the author's model only examined the direct relationship between perceived risk and acquisition of novel product information but failed to specify any possible direct impact that perceived risk has on actual adoption. Future studies could test a model which also specifies the direct relationship between different kinds of risk and adoption behavior.

In another study that examined the relationship between innovativeness and new product adoption within a larger model, researchers Im, Mason, and Houston (2007) built on previous work in an attempt to examine the mediating role of vicarious innovativeness on the relationship between innate consumer innovativeness and new product adoption of consumer electronics as well as new service adoption. The authors define vicarious innovativeness as "a process by which a consumer experiences and learns about new products through impersonal and/or personal communications" (Im et al., 2007, p. 67). In this model they hypothesize that individuals who are innately innovative express this by actively seeking interpersonal communications and engage in activities about new products. This in turn makes the individuals more likely to adopt.

The authors use structural equation modeling to test two different models. The first model is created from the existing literature and looks at the relationship between innate innovativeness, demographic/personal variables, and new product adoption behavior. The second model incorporates three aspects of vicarious innovativeness; advertising, word of mouth, and modeling, as mediating variables between innate consumer innovativeness and new product adoption behavior. In order to measure new product adoption the authors use a method of self report that incorporates both Rogers (1995) "relative time of adoption" technique as well as Midgley and Dowling's (1978)

cross sectional method, which uses the number of new products from a list (of consumer electronics) that consumers have bought as a measure of innovativeness. New service adoption was measured as the amount of new services used from a list of services that were perceived to be new at the time of the survey (1995). The authors measure innate innovativeness using the Kirton Adaption-Innovation Inventory (KAI) (Kirton, 1976).

Overall the authors found that innate consumer innovativeness (ICI) alone is a weak predictor of adoption behavior for products as well as services (Im et al., 2007). This finding supports other research which has found a week relationship between innate innovativeness and new product adoption (Goldsmith & Hofacker, 1995; Im et al., 2003). In addition, the authors found that ICI explains significantly less variance then personal characteristics such as age and income. However, vicarious innovativeness does mediate the relationship between innate innovativeness and adoption of new products as well as services.

One possible drawback of the study was that the moderating role of vicarious innovation was only applied to the relationship between innate innovativeness. Future studies could examine the relationship that vicarious innovativeness plays in a more domain specific context. Further as with other studies another possible drawback is that the authors did not explicitly test whether any of the products or services used in the studies were viewed as new or innovative by the participants.

In another study that went beyond examining direct relationships between innovation and online purchasing behavior researchers Park et al. (2006) examined how internet innovativeness moderates the relationship between innovativeness in the domain of fashion, materialism and attitudes towards online purchasing in Korea. Innovativeness

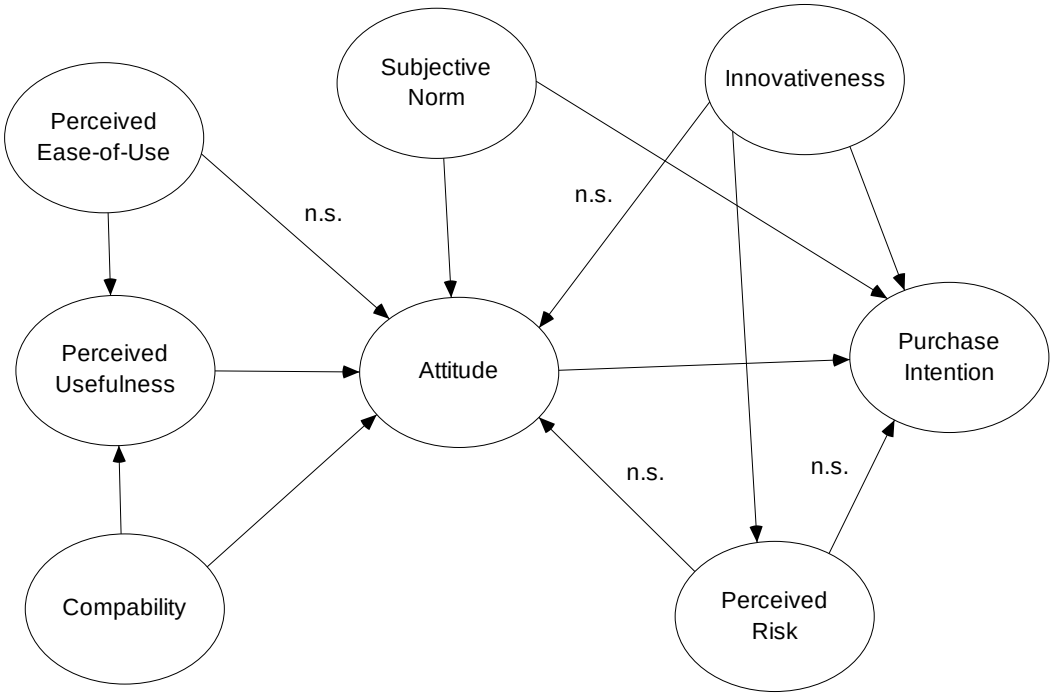
in the domain of the internet was measured using a scale developed by Citrin et al., (2000), and innovativeness in the domain of fashion using the scale developed by Goldsmith and Hofacker (1991). Materialism was measured using a scale developed by Richins and Dawson (1992). The dependent variable, attitude, was measured using a method developed by Azjen and Fishbein (1980) which involved bipolar scales using four semantic differentials, good-bad, pleasant-unpleasant, beneficial-harmful, and rewarding-punishing (Park et al., 2006).

Using correlation as well as regression analysis the researchers found that attitudes regarding online purchasing of fashion goods were significantly related to innovativeness in the domain of fashion as well as materialism. Further they found that the relationship between fashion innovativeness, materialism and attitudes towards the purchase of fashion goods online is stronger in individuals who have lower internet innovativeness then with those who score higher on the internet DSI scale. This study is interesting because it examines the moderating effect that innovativeness in one domain (the internet) has on the relationship between innovativeness in another domain (fashion) and attitudes towards online purchasing. It is also important because it seems to indicate that internet innovativeness is not a prerequisite for consumers to shop online for fashion goods. One possible drawback in this study is that they did not use a concrete measure of online purchasing but instead measured an individual's attitude towards online purchasing. Future studies may attempt to replicate the results using a more concrete measure such as time since last online purchase (in the domain of fashion) or number of fashion goods purchased online.

Another study which examined innovativeness as part of a larger model was done by Crespo and Rodriguez (2007). In addition to innovativeness, the researchers examined several other variables that they propose directly influence purchase decisions: attitude, subjective norms, and perceived risk. Borrowing from previous intentional models such as the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM) and Gatigon and Robertson's (1985) Innovation Adoption Model the model also takes into account the effect that the variables perceived ease of use, perceived usefulness, and perceived compatibility have on attitudes (in this study the extent to which someone has positive or negative evaluation towards internet purchasing), and subsequent intention to purchase on the internet (See Figure 4).

Figure 4

Crespo and Rodriguez (2007) Intention Model



CFI = 0.923 RMSEA = 0.066 IFI = 0.923 BBNFI = 0.889

Note: All paths are significant unless noted. Figure Adapted from Crespo and Rodriguez, 2007, p. 219

As a measure of innovativeness, the researchers used a scale developed by Agarwal and Prasad (1998), which examines innovativeness in the domain of new technologies and is defined as the willingness to try out any new information technology. Attitude was defined as the amount to which a person has a positive or negative evaluation of a given behavior and was examined using a scale developed by Taylor and Todd (1995). Perceived risk was measured using a scale adapted from Stone and Grongaug (1993) and Featherman and Pavlou (2003) and was defined as respondents subjective expectations of loss associated with behavior or innovation. Subjective norm, defined as perceived social pressure to either perform or not perform a given behavior, was measured using a scale developed by Taylor and Todd (1995). In addition, perceived usefulness as well as ease of use was measured from a scale based on Davis (1989). In this study the dependent variable, purchasing intention, was measured with using a scale developed by Taylor and Todd (1995) and Gefen and Straub (1997).

To test the independence of the different constructs, the authors used confirmatory factor analysis and found the relationship between each of the constructs (attitudes, innovativeness, and perceived risk) to be insignificant. Next, the authors used structural equation modeling to test the overall model. They found that attitudes, subjective norms, and innovativeness are the main determinants of internet shopping (IS) with attitudes accounting for the most variance (see Figure 4). Interestingly they found that perceived risk had no effect on either adoption or attitudes. In addition, the authors found that innovativeness is significantly related to and directly affects purchase intention, but does not affect attitudes toward the innovation.

The results of this study indicate that even though individuals may feel a certain amount of risk, this feeling is not considered in the decision to shop online. The authors explain that there could be aspects of risk that have an indirect influence through affecting some of the other constructs (such as perceived ease of use or subjective norm). In addition, innovativeness seems to affect the likelihood that an individual will shop online, but does not affect one's attitude towards the process. One possible drawback of this study is that it uses no direct measure of adoption behavior, instead measuring only behavioral intentions.

While many studies have examined innovativeness within a larger theoretical context, it is sometimes difficult to determine the relative contribution, or value of these models compared to others. As mentioned above, researchers Gounaris and Kuritos (2008) examined the relationship between three different models: the technology acceptance model (TAM) the diffusion of innovations model (DOI) and the perceived characteristics of an innovation model (PCI) and the adoption of online banking. In addition, the researchers examined whether or not the addition of demographics as well as innovation and shopping orientation variables can improve on these models.

Using whether or not someone adopts as their dependent variable, the authors drew two distinct samples, one of adopters of online banking and another of non-adopters and gave a survey testing the three models. They then used hierarchical logistic regression to test the models ability to predict group membership (adopt v. not adopt). The results indicate that the PCI significantly predicted banking adoption better than the other two models. However, out of the 8 characteristics in the PCI model, the advantage in predictive validity is attributed to only four of them. Further, two of these variables

(ease of use and usefulness) are present in the TAM model, therefore only two variables: image and voluntariness (i.e., the degree to which an individual has a choice in the innovation adoption decision) are responsible for the improved performance (Gounaris & Kuritos, 2008).

In examining the effect of demographic variables the researchers found that the additional variables significantly improved the PCI model. Finally, the researchers examined the effect of adding innovation and shopping orientation to the model. The results indicate that the addition of these two variables also improved the performance of the PCI model above and beyond the demographic variables. According to the authors these results highlight the relative inferiority of "simple technology-driven frameworks" and state that they are not good predictors when outcomes are influenced by "various context specific parameters and consumers idiosyncratic characteristics" (Gounaris & Kuritos, 2008, p. 298). Limitations of the study include the non-random sample of both internet banking users and non-users.

2.5. *Conclusion*

The review of this literature tells us several things. First, the research regarding a purely behavioral conceptualization of innovativeness has been mixed at best. While some studies have continued to use this conceptualization of the innovativeness construct (Frank et al., 2006), a purely behavioral measurement of innovation has been widely criticized by researchers (Goldsmith, 1995; McDonald & Alpert, 2007; Midgley & Dowling, 1978). However, even though Rogers's (1995) behavioral definition of innovation may be difficult on methodological grounds, the theoretical framework proposed is still a valuable tool used by researchers to identify what influences adoption

and how this spreads to other members (non-adopters) in the social system. Further, as a dependent variable, Rogers time of adoption measure of innovativeness has been found to be useful when used alongside other measures (e.g., Blake et al., 2007).

In response to some of the shortcomings of a purely behavioral conceptualization of innovation, Midgley and Dowling (1978) introduced the idea of innate or global innovativeness, described as a personality trait which is present in all individuals to some extent. To measure innovativeness at this level of abstraction a cross sectional method is used in which an individual select from a list of "innovative products" the ones which they own. In addition to measuring direct relationships between innate innovativeness and adoption of new products, a large number of studies have attempted to identify a variety of components which are thought to relate to innovativeness. However, studies have found that the relationship between innovativeness and new product adoption at this level of measurement remains low (Citrin, 2000; Im et al., 2003).

The conceptualization of innovativeness at the domain specific level has been shown to have advantages over innate innovativeness. Most importantly, studies have shown that the scales developed at this level have a higher predictive validity than scales which were developed to tap innovativeness at the general or innate level (Roehrich, 2004). Further, domain specific innovativeness has been found to mediate the relationship between innate or general innovativeness, and when taken into account, the variance explained by innate innovativeness scales decreases significantly (Citrin et al., 2000; Goldsmith et al., 1995; Im et al., 2003). However, while domain specific innovativeness has been found to have higher predictive validity, some studies (e.g.,

Blake et al., 2007) have found evidence that calls into question the extent to which the scale actually measures innovativeness as a construct.

Finally, in addition to comparing the direct impact of innovativeness and adoption behavior, a large number of studies have examined innovativeness in a larger context. Some studies use established models that were developed outside the innovativeness literature (TAM, TRA), while other researchers have attempted to develop models explicitly to predict adoption of an innovation. These models have found a variety of other constructs (e.g., perceived risk, attitudes, and cognitive style) can also affect the likelihood of innovation adoption.

2.6. *Current Study*

While the relationship between innovativeness and new product adoption has received considerable attention from researchers, there are still unanswered questions. One important issue that needs to be addressed is in regards to the appropriate level of specificity at which to measure innovativeness. The overall ability of general or innate innovativeness scales to predict adoption behaviors remains lacking (Im et al., 2003; Roerich, 2004). One reason for the weak predictive validity is the fact that when people are making adoption or purchasing decisions, innate innovativeness is just one factor among several (e.g., perceived cost or risk, aspects of the innovation, situational constraints, etc.). Indeed many of the models reviewed above improved their predictive ability when they included other factors. In short, since innovativeness scales are asked without any specific behavior, product or situation in mind, the scales limit their predictive ability in a specific context.

Because of this, researchers have attempted to examine scales that measure innovativeness at a more specific level which have been found to have better predictive validity (Citrin et al., 2000; Goldsmith et al., 1995). However, if innate or global innovativeness scales actually do measure some form of personal innovativeness construct that resides in all people, but this only accounts for a small amount of variance in people's adoption choices, why does measuring innovativeness at a more domain specific level result in improved predictive validity? What exactly is driving the increase in prediction?

One possibility is that while the DSI measures innovativeness it is also measuring behavioral intention towards that specific domain. For example, several studies have used the DSI in the domain of online shopping. In this domain, one question on the scale states: "*in general I am among the last in my circle of friends to visit a shopping website when it appears*" (Goldsmith & Hofacker, 1991). While this may indicate people's levels of innovativeness in the domain of online shopping, it may also be an reflection of their attitudes or behavioral intentions in this domain. However, it should be noted that some researchers have found domain specific innovativeness and attitudes to be unrelated. Specifically, Agarwal and Prasad, (1998) used confirmatory factor analysis and found the constructs to be unrelated and that in their model, the DSI directly effected behavioral intentions, but not attitudes. Based on this, there seems to be a clear need to examine the constructs related to domain specific innovativeness more closely.

Further, while the domain specific innovativeness scale is a useful predictive tool, the fact that it is so specific would seem to limit the information that a scale would give researchers regarding the innovativeness construct in general. For example, if I find that

people who are innovative in the domain of tennis will be more likely to adopt a new tennis racket, this will help identify which people to target, but I cannot infer any relationship outside of the domain of tennis. In short, while the DSI may identify people who have certain behavioral intentions and behave innovatively in a certain domain, it does not actually say anything regarding innovators as a group. Because of this, one goal of future research would be to see the extent to which domain specific innovativeness is a reflection of an innovative personality (a trait on which people differ) or more an indicator of other variables such as behavioral intentions.

One possible way to examine this is to look at the role of perceived newness. This variable might be an indicator of the innovativeness construct because for something to be innovative it has to be viewed as new. Indeed, a person's innovativeness has been defined as "*inter-individual differences that characterize how people respond to new things*" (Goldsmith & Foxall, 2003). Because perceived newness is a fundamental criterion for something to be viewed as an innovation, it would make sense that studies examining the relationship between a person's innovativeness and new product adoption would measure the degree to which participants actually view the innovation as something new. While this would seem a critical part of the study of innovativeness, very few studies have examined this variable.

However, several important studies regarding newness were done by Blake, Perloff and Helsin (1970) and Blake, Perloff, Zenhausern and Heslin (1973). In their work the researchers differentiated between two dimensions of newness. The first was novelty, which was described as the extent to which a product is viewed as new, unusual and different compared to other products. The second dimension is recency, which is

described as the amount of time the product is perceived to have been on the market. Results of these studies indicated the extent to which a product is viewed as new due to it being perceived as novel or to it being perceived as recently available effect the relationship between personal characteristics such as personality and the willingness to adopt new products.

A more recent study examined the effect of perceived product newness on the relationship between innovativeness and adoption behavior. In this study Blake et al. (2007) examined the two dimensions of newness discussed above: novelty and recency. Using a multinational sample, the researchers found that the degree to which a respondent viewed the innovation (online shopping) as new had no effect on the predictive validity of innovativeness at the domain specific level. However, while the Blake (2007) study examined the impact perceived newness had on domain specific innovativeness and online shopping adoption it did not examine newness' effect on innovativeness scales based on other levels of abstraction.

Even though no interaction was found between newness and domain specific innovativeness, in examining the direct effect that newness had on online shopping Blake et al. (2007) found a significant relationship between perceived newness (novelty) and online shopping in all of the countries sampled except for the USA. Importantly, they found this relationship to be negative, leading to the conclusion that "a marketers attempting to position web shopping as new and different, unique, or wave of the future may be ineffectual or even harmful to sales" (Blake et al., 2007, p. 34).

Another relevant study was done by Blythe (1999). In this study newness was defined as "the degree to which a given product is outside the observer's experience"

(Blythe, 1999, p. 419). This definition separates itself from other views in which new could also mean “recent” or “newly made”. Blythe examined the way consumers perceive newness in products by first splitting consumers into two groups: innovative and non-innovative. Participants were assigned into groups based on their scores on the Domain Specific Innovativeness scale developed by Goldsmith and Hofacker (1991). In order to examine and compare the way that innovators and non-innovators viewed newness respondents were asked to rate three different products.

By examining the range of newness scores of the three products, the authors found that participants were able to significantly discriminate between the innovativeness levels of the three products. In addition, the authors found differences in the way the two groups rated product newness, specifically that innovators rated all the products higher than non-innovators. The authors state this could be due to high innovators having more enthusiasm for new and innovative products in and of themselves. The results of this study tell us two important things. The first is that individuals have the ability to discriminate degrees of product newness. The second is that innovative individuals could value a product solely due to the fact that it is perceived as new and that newness itself could be seen as a positive product attribute by these individuals.

In the current study we would like to build on the research done by Blake et al. (2007) regarding the relationship between perceived newness (both novelty and recency) and examine how this variable interacts with innovativeness measured at other levels of abstraction. Again this is important because perceived novelty is a prerequisite for something to be an innovation and the way in which people respond to new things is one of the differentiating aspects of the innovativeness construct. Because of this examining

the interaction between newness and innovativeness at different levels of abstractness will help researchers to better understand innovativeness. To operationalize newness, we will use the Blake et al. (2007) definition of novelty, which is defined as "the degree a product is seen as unusual, different, unique compared to other products" (p. 14). We will also explore recency (the amount of time a product is perceived to be available on the market) however, based on previous research (e.g., Blake et al., 2007) we will use novelty as the primary definition of newness.

In addition to testing the validity the DSI, this study would also like to examine the validity of a new scale which measures general shopping innovativeness. This scale could be a better fit for innovativeness research for several reasons. The first is that since it is in the domain of shopping, it is less general than innate or global innovativeness scales, possibly having better predictive validity. However, since it does not ask about a specific innovation (e.g., online shopping) directly, it is not as concrete as the DSI. Because respondents will not have a specific referent in mind when indicating innovativeness, it is possible that their responses will be a reflection of the degree to which they would be open to new and different ways of shopping in general. This could be important in the future as the way in which people purchase products is continuously changing.

Further, we would like to examine the direct relationship between perceived newness and new product adoption. This is important because, as mentioned above, Blake et al. (2007) found a significant negative relationship between this variable and adoption of online shopping. However, Blythe (1999) found evidence to support the notion that newness itself could be seen as a positive product attribute by individuals.

These somewhat different findings would seem to warrant the need for further examination of the impact that perceived newness has on innovation adoption.

Perceived newness may also effect whether people use the internet to either gather information about products (e.g., browsing) compared to actually making online purchases. This is important because while studies have looked at the effects of innovativeness on online shopping and online information gathering (e.g., Blake et al., 2003; Ha & Stoel, 2004), few studies to date have examined the effect that perceived newness has on these variables. Further, in one study that did examine this, Blake et al. (2007) found that in some countries the effect of newness was different for online purchasing vs. online information gathering (Blake et al., 2007). Because of this, the current study would like to re-examine the effect that newness has on online shopping vs. online information gathering with a sample from the USA.

One possibility is that perceived newness is negatively correlated with new product adoption but positively correlated with gathering information about a product. That is, the newer a product is viewed, the less likely someone is to purchase it and the more likely they are to gather more information about it. This could be because the newer something is, the less information is known about it and the greater perceived risk (cf. Rogers, 1995). Further, using the internet to browse could be seen as a less risky form of online shopping and that in browsing, individuals are also gathering important information about the online shopping process, perhaps doing everything but making an actual purchase. This form of information gathering could explain why people may go through the process of online shopping (e.g., put item in online “shopping cart”) but never actually make the purchase. This has received indirect support in a study done by

Hirunyawipada and Paswan (2006), which found that increased perceived risk was associated with an increase in adopting information about the innovation but not actual purchasing.

Based on the literature review, the following research questions are proposed:

1. How well do the different innovativeness scales (general shopping, domain specific) predict online shopping adoption (both actual purchase frequency and information gathering)? What are the internal and discriminant validity of the scales?
2. Does perceived newness (novelty and recency) affect the domain specific innovativeness scales ability to predict online shopping adoption (both actual purchase frequency and information gathering)? Is it different than the results found in Blake et al. (2007) which indicated no interaction?
3. Does perceived newness (novelty and recency) affect shopping innovativeness scales ability to predict online shopping adoption (both actual and information gathering)?
4. To what extent does the general shopping innovativeness scale predict online shopping adoption? What is the scales inter-item reliability and discriminant validity?
5. What is the relationship between perceived newness (both novelty and recency) and online shopping (actual purchase frequency and information gathering)? Is perceived newness negatively related to online shopping adoption (both actual and information gathering) as found in Blake et al. (2007)?

CHAPTER III

METHOD

3.1. *Data Collection*

The sample uses existing data which were collected in 2006 as part of an international study of online shopping and internet use. The sample consists of data collected in that study from the United States. The current study examines the role that the variables innovativeness, intention, novelty and recency have an individual's choices regarding online shopping.

The data were collected via internet by a team of graduate students and a faculty member using an ad hoc sample which included relatives, friends and coworkers of the research team; members of social and religious organizations in a variety of cities. The participants were sent to a web site and given an online survey with a cover letter stating the purpose of the research and explaining that their responses will remain anonymous and that participation is completely voluntary.

While every effort was made to gather as diverse a sample as possible it should be noted that the survey information was gathered using a snowball procedure, and while the sample is diversified, it is not intended to be representative. Because of this, the data from

the survey is adequate to test the hypothesis we propose, but not to generalize specific numerical results to the population as a whole. For example, while the data may give us knowledge regarding the relationship between constructs such as innovativeness, novelty and online shopping, results cannot numerically be applied to everyone in the population. This type of generalizibility is known as theory falsification, as opposed to effects application, in which numerical results are intended to be generalized to the population as whole (Calder et al., 1981).

3.2. *Measures*

The questionnaire USA-WAVE-III Innovativeness was used in the current study. It was developed by Blake et al. in 2006 and consists of items regarding internet shopping habits, online visiting habits, and features of internet websites, innovativeness, opinion seeking and various other items. However, not all items on the questionnaire will be used for the analysis. Below is a summary of the items that will be analyzed for the current research. For the complete survey please see Appendix A:

General Shopping innovativeness

Participants were asked questions regarding their perceptions of new and different ways of shopping; all questions were on a 7 point scale ranging from (1) “Strongly Disagree” to (4) “Neither Agree nor disagree” and (7) “Strongly Agree”. The questions were: (a) “I am suspicious of new ways of shopping”, (b) “I am reluctant to adopt new forms of shopping until I see them working for people around me”, (c) “I rarely trust new means of shopping until I can see whether the vast majority of people around me accept them”, (d) “I am generally cautious about accepting new ways of shopping”, (e) “I must see other people using new means of shopping before I will consider them”, (f) “I often

find myself skeptical of new types of shopping", (g) "I am aware that I am usually one of the last people in my group to accept new styles of shopping", (h) "I tend to feel that the old way of shopping is the best way". These items were developed by Blake et al. (2008) as a general measure of shopping innovativeness.

Domain Specific Innovativeness

Participants were asked about how innovative they view online shopping. All questions were on a 7 point scale ranging from (1) "Strongly Disagree" to (4) "Neither Agree nor disagree" and (7) "Strongly Agree". The questions were: (a) "In general, I am among the last in my circle of friends to visit a shopping website when it appears", (b) "If I heard that a new website was available for online shopping, I would be interested enough to visit it", (c) "Compared to my friends, I have visited few online shopping websites", (d) "I will visit an online shopping website even if I know practically nothing about it", (e) "I know the names of new online shopping sites before other people do", and (f) "In general, I am the last in my circle of friends to know about new websites". This scale was originally developed by Goldsmith and Hofacker (1991). The scale was modified for the domain of internet shopping by Blake et al. (2003).

Intention to browse

Participants were asked the degree to which they intend to use the internet to gather information about products. On a 7 point scale ranging from (1) "Strongly Disagree" to (4) "Neither Agree nor disagree" and (7) "Strongly Agree" the questions were: (a) "There is a good chance that in the next 3 months I will browse sites to find products I might be interested in", and (b) "In the next 3 months I intend to go online to search for information about products or services I am interested in".

Intent to purchase

Participants were asked the degree to which they intend to purchase goods or services online. On a 7 point scale ranging from (1) "Strongly Disagree" to (4) "Neither Agree nor disagree" and (7) "Strongly Agree" the questions were: (a) "I intend to make one or more purchases online in the next 3 months" and (b) "It is highly likely that I would use my credit card to purchase products or services online in the next 3 months". Both Intention to browse and Intention to purchase are original measures based on the work done by Blake, Neuendorf and Valdiserri (2003, 2007).

Novelty

Participants were asked questions about how new they perceive online shopping to be, all questions were on a 7-point scale ranging from (1) "not novel at all" to (7) "very novel". The questions were: (a) "Compared to shopping in traditional stores, how unusual or novel do you personally find online shopping to be?" (b) "In general, how different is shopping online compared to shopping in traditional stores?", (c) "In general, how unique is shopping online compared to shopping at a traditional store?" and (d) "In general, how innovative is shopping online compared to shopping at a traditional store?" This conceptualization of perceived newness was developed by Blake, Perloff and Helsin (1970) and Blake, Perloff, Zenhausern and Heslin (1973) as one of two dimensions, the other being recency.

Recency

Participants were asked questions regarding the time at which they knew they or others could make purchases online. All questions were on a 7-point scale. The first question was "As far as you know, how many years has online shopping been available to

people in the United States?", Response options were: "Less than 1 year", "1 - 3 years", "4 - 6 years", "7 - 9 years", "10 - 12 years", "13 - 15 years" and "More than 16 years". The second question was "What was the first year that people around you could find products of interest to them for sale through the Internet?". Responses options were: "1990 or earlier", "1991 – 93", "1994 – 96", "1997 – 99", "2000 – 02" "2003 – 05" and " 2006". The third question states: "About how long ago did your friends, family, or neighbors learn that they could shop for products through the Internet?". Response options were: "16 years ago or more", "13 to 15 years ago", "10 to 12 years ago", "7 to 9 years ago", "4 to 6 years ago", "1 to 3 years ago" and "This current year". This is one of two dimensions of perceived newness which were developed by Blake, Perloff and Helsin (1970) and Blake, Perloff, Zenhausern and Heslin (1973).

Online Shopping Profile

In order to examine internet shopping (IS) habits the online shopping profile (OSP) was used. This was developed by Blake, Neuendorf and Valdiserri (2003, 2007) as a measure of internet shopping habits and has been shown to have advantages over single item measures online shopping (Blake et al., 2003, 2007). The OSP included the variables Purchase Frequency, Visit frequency, Typical Purchase, Atypical Purchase Typical Visit, Purchase Range, and Visit Range. The variables examined in this research were Purchase and Visit Frequency, and Purchase and Visit Range.

Purchase Frequency

To examine online purchase frequency the average of Z scores from items 1-5 and 3-3 were taken. Item 1-5 states "How often, if ever, do you go online and make a purchase?" Responses (1-6) ranged from: "never, less than once a month, 1-2 times a

month, 3-5 times a month, 6-9 times a month, and 10 or more times a month". The other item, 3-3, states: "On average, how often do you make a purchase on the Internet?". Responses (1-6) were: "never, rarely, less than once a month, about once a month, about once a week, daily".

Visit Frequency

In order to examine online visit frequency, the average of Z scores from items 1-4 and 3-1 were taken. Item 1-4 states "How often, if ever, do you go online to look for information about products and services without buying anything during that visit?" Responses (1-6) ranged from: "never, less than once a month, 1-2 times a month, 3-5 times a month, 6-9 times a month, and 10 or more times a month". The other item, 3-1, states: "On average, how often do you search for product or service information on the Internet without buying anything during that visit?". Responses (1-6) were: "never, rarely, less than once a month, about once a month, about once a week, daily".

Purchase Range

Purchase Range was taken from item 3-4 which asked "How often, if at all, do you PURCHASE any of the following items/services (and not just look for information) online? Use any number from 1 (never) to 5 (regularly)." Eleven classes of items were then listed including: (a) "clothing/accessories", (b) "books/magazines", (c) "travel transportation", (d) "travel destinations", (e) "health and medical", (f) "Financial Services", (g) "consumer electronics", (h) "entertainment", (i) "computer", (j) "food", (k) "home appliance", (l) "restaurants" and (m) "other". A respondent's score for purchase range was any item which the responded listed as 2 or above.

Visit Range

Visit range was taken from item 3-2, which asked “How often, if at all, do you VISIT each type of web site (WITHOUT purchasing) to collect information? Use any number from 1 (never) to 5 (regularly).” The same eleven classes of goods and services were then listed. Again a respondent’s score for purchase range was any item which the responded listed as 2 or above

Demographics

In addition participants were asked various demographic questions. The first question was regarding gender and age: “What is your gender?” response options were “male” or “female”. The next question was age and asked “What is your age?” response options were open ended. The next question states “What is your marital status?” Response options were “Single, never been married”, “Married”, “Separated/Divorced”, and “Widowed”. The next question was regarding education status and asked: “What was the last year of education you completed?” Response options were “Some high school”, “High School”, “Technical School/Training (such as auto mechanic)”,“Some college/university”, “College/university graduate”, and “Graduate or professional school”. Next employment status was asked and states “What is your current employment?” Response options were “Employed-full time”, “Employed-part time”, “Self-employed”, “Temporarily unemployed”, “Full time student”, “Homemaker/housewife”, and “Retired”. The last question was regarding income and states: “Please indicate which of the following categories best represents your annual household income before taxes.” Response

options were “$10,000 or less”, “$10,001 to $20,000”, “$20,001 to $30,000”, “$30,001 to $40,000”, “$40,001 to $50,000”, “$50,001 to $75,000”, “$75,001 to $100,000”, and “more than $100,000”.

CHAPTER IV

RESULTS

4.1. *Sample Characteristics*

An attempt was made during the data collection procedure to maximize the demographic and geographic diversity. The dataset used for the current study invovled (303) participants. The majority of the respondents (61.3%) were from Ohio. Over half the participants in the dataset were female (61.8%) and roughly half (50.3%) were married. The age range for the data set was 18 to 70 with an average age of 36.1. Respondent's average household income was $59,163 a year. The majority of the sample consists of US citizens (98.4%), employed full time (62.2%) and were college graduates (61.8%). Below are the demographic characteristics for the sample used in the study.

Table 3

Sample Characteristics

Sample Characteristics (N=303)	
Age (mean years)	36.14
Gender (% female)	61.80%
Education	
College Graduate	61.80%
-*College Graduate*	35.30%
-*Graduate/Professional*	26.50%
Not a collage graduate	37.50%

-*High school or less*	6.50%
-*Technical school/training*	1.60%
-*Some collage*	29.40%
Employment	
Full-time	62.20%
Part-time	19.30%
Full time student	16.40%
Other*	22.60%
Occupation	
Professional	34.30%
Managerial/executive	12.40%
Sales	9.50%
Clerical	5.60%
Labor	2.30%
Other	22.90%
Income	
0-$10,000	4.20%
$10,001-$20,000	4.70%
$20,001-$30,000	10.80%
$30,001-$40,000	13.70%
$40,001-$50,000	13.40%
$50,001-$75,000	19.90%
$75,001-$100,000	17.60%
More than $100,000	12.40%
Marital Status	
Married	50.30%
Not Married	49.40%
-*Single (never married)*	42.50%
-*Separate/Divorced*	5.60%
-*Widowed*	1.30%

4.2. *Preliminary Analysis*

4.2.1. *Scale Construction***.** Summated scales were created and used for the analysis. For missing responses, the casewise mean for that scale was used. For example, if a respondent had one missing response on the Doman Specific Innovativeness (DSI) scale, then the average of the remaining items for that respondent on the DSI would be used in place of the missing value. Overall, high reliability was found for the scales used in the analysis. Table 4 represents the reliability of each scale used.

Table 4

Reliability for Scales Used

Scale	**# of items**	**Alpha**
Perceived Recency (1-6—1-8):	3	.724
Perceived Novelty (1-10—1-13):	4	.684
General Shopping Innovativeness (GSI) (1-14, items A-H)	8	.919
Domain Specific Innovativeness DSI (3-5, items A, C, E, G, H, J)	6	.756
Intention (3-5 items B, F, D, I)	4	.821
Visit Intention (D, I)	2	.85
Purchase Intention (B, F)	2	.694

4.2.2. *Recoded demographic variables.* In order to examine the effect of demographics, the variables were recoded. For the analysis gender was dummy coded with females = 0, education was recoded as: college graduate and graduate/professional = 1, all others = 0, marital status was married = 1, all others 0, employment was recoded as: full time = 1, all others = 0, age was left continuous and for income the midpoints were used.

4.2.3. *Correlations and regression between scales used, OSP and demographics.*

To examine the possible role that demographics play in the relationship between the relevant variables and online shopping habits, zero-order correlations as well as multiple regressions were done. The results suggest the possibility that the variables Income as well as Age and Gender may play a role in the relationship between innovativeness and online shopping, while Marital and Employment status play a relatively small role (see Table 6).

Table 5

Zero-order Correlations Between Demographics, Scales Used and OSP

	Demographics (significant zero-order correlations)					
Scale	Gender	Education	Marital	Income	Employment	Age
GSI			-0.105*			-0.13*
DSI		.078****			-.078****	-.152**
Recency			.099*			
Novelty						.122*
Intent Purchase				.094****		
Intent Browse	.078****	.084****	.130*	.154**		
Visit Range			.096****			
Purchase Range	.151**	.131*	.123*	.200***		.109*
Visit Freq		.101*	.097****	.138**		
PurchFreq	.120*	.183***		.208***		

Notes: * = .05 ** = .01 *** = .001 **** = .010

Table 6

Regression Analysis for Demographics Predicting Scales Used and OSP

			Demographics *B* weight					
Scales	R^2	*F*	Gender	Education	Marital	Income	Empl	Age
GSI	.033	1.550						
DSI	.051	2.49**						-.203**
Recency	.016	.758						
Novelty	.018	.833						
Intention Purchase	.028	1.361						
Intention Browse	.043	2.110						
Visit Range	.015	.689						
Purchase Range	.073	3.684**	.140*			.155*		
Visit Frequency	.048	2.369*				.156*		-.163*
Purch Frequency	.093	4.77**	.116*	.162**		.241***		

Notes: * = .05 ** = .01 *** = .001 **** = .010

4.3. *Perceived Newness (Novelty and Recency) and DSI/GSI Interactions.*

Researchers have posited that newness is an important aspect of innovativeness with Goldsmith and Foxall (2003) stating that a person's innovativeness is "*inter-individual differences that characterize how people respond to new things*" (Goldsmith &

Foxall, 2003, p. 419). The importance of newness has also been voiced by other researchers (e.g., Midgley and Dowling, 1978). However, as mentioned above more recent research has called into question the role that newness plays in innovativeness (Blake et al., 2007). Because of this the possibility for interactions between perceived newness, (Novelty and Recency) and the innovativeness scales (DSI and GSI) in predicting aspects of online shopping are examined. Interactions were examined in several ways. The first way was using hierarchical regression. In order to do this, an interaction variable was created which was the product of the variables in question. Prior to multiplication the scores on each variable were not standardized because they were on the same scale. Because there were two dimensions of newness (novelty and recency), two innovativeness scales (the DSI and GSI) and four aspects of online shopping (Purchase Frequency, Visit Frequency, Purchase Range, and Visit Range), 16 possible interactions were examined).

The first possible interaction was between the variables Novelty and DSI. To test this, the variable DSI was multiplied by the variable Novelty. Next a hierarchical regression analysis was done in which the first block consisted of the variable Novelty, the next block consisted of the DSI and third block was the interaction term Novelty x DSI. The results indicate that the interaction term was not significant (See Appendix B1 for regression results).

The second possible interaction was between Novelty and GSI. To test this, the variable GSI was multiplied by the variable Novelty. Next a hierarchical regression analysis was done in which the first block consisted of the variable Novelty, the next block consisted of the GSI and third block was the interaction term Novelty x GSI. The

variables were not standardized because they were on the same scale. The results indicate that the interaction term was not significant (See Appendix B2).

The third possible interaction was between Recency and the DSI. To test this, the variable DSI was multiplied by the variable Recency. This was tested the same way as above, first creating an interaction term, then using hierarchical regression. The results indicate that the interaction term was not significant (See Appendix B3). The fourth possible interaction was between Recency and the GSI. Again this was tested in the same manner as above, and the results indicate that the interaction term was not significant (See Appendix B4). In addition to Purchase Frequency, the other facets of the OSP (Visit Frequency, Purchase Range and Visit Range) were examined in the same manner as above. In all cases, hierarchical regression indicated the interaction term was not significant and no evidence for interactions ware found. For specific regression analyses see Appendix B5-B16.

In addition to hierarchical regression, evidence for interactions was examined through the use of scatter plots. In order to do this, simple frequencies were run on Novelty, saving quartiles. Then groups who were low (quartiles 3 and 4) and high (quartiles 1 and 2) on Novelty were compared. Further, the top (quartile 1) and bottom (quartile 4) were compared. With these groups scatterplots were examined to look for interactions between Novelty and innovativeness (the DSI and GSI). The same thing was done for the variable Recency

Evidence for interactions between perceived novelty and the innovativeness scales ability to predict online shopping were also examined using analysis of variance as well as residuals. To do this, regression analysis was run with the DSI predicting

purchase frequency and residuals were saved as a new variable. Then an ANOVA was run on (absolute value of) the residual variable using the Novelty quartile scores (1-4) as the factor. In doing this, the predictive ability (as evidenced by the residual scores) of the innovativeness scales was compared for people who were high/low on Novelty. The same thing was done for the variable Recency (an ANOVA was run on DSI residuals using the Recency scores as a factor). Finally, the same thing was done for the GSI. In all cases the ANOVA as well as post hoc's were insignificant and showed no evidence for interactions (See Appendix C for ANOVA tables and results). This would seem to support the contention that the DSI is an equal predictor of purchase frequency regardless of level of Novelty or Recency, and the same thing is true for Recency.

4.4. *Role of Novelty and Recency in Predicting Online Shopping.*

In addition, the direct role of the variables Novelty and Recency in predicting online shopping was examined. Initial results from simple regression show that Novelty is not a significant predictor of online purchase frequency. However, examination of the scatter plots between the Novelty and Purchase Frequency showed evidence of a possible quadratic relationship. Because of this, quadratic regression was used to further examine this relationship. Results indicate that while there is no significant linear relationship between Novelty and Purchase Frequency there is a significant quadratic one. For regression results see Appendix D. The same pattern was seen for Recency and Purchase frequency, which showed no linear relationship, but a significant quadratic one. While a complete investigation of the possible nonlinear relationship between the variables Novelty, Recency and Purchase Frequency is beyond the scope of the current research, it should be noted as a possible avenue for future studies.

4.5. *Development of a Model to Predict Online Shopping Habits.*

In an attempt to better understand the relationship between the variables Domain Specific Innovativeness (DSI), General Shopping Innovativeness (GSI), Intention, and the relevant aspects of online shopping several things were done. For each aspect of online shopping examined (Purchase and Visit Frequency, Purchase and Visit Range) zero-order and partial (controlling for intention) correlations were examined. This was followed by simultaneous entry regressions. Finally, stepwise hierarchical regressions were run, and based on the correlations and simple regressions the order of entry was varied to examine the relationships between the variables. The final models presented here for the stepwise hierarchical regressions are the ones with weakest variable added first, followed by the next strongest, then the strongest variable added last. In addition, the relationships between these variables were further examined using residuals (See Appendix E).

4.5.1. *Purchase Frequency.* As a preliminary analysis correlations were run looking at the relationship between DSI, GSI, Intention and purchase frequency alone and also controlling for Intention (Table 7). The results show that on their own, the DSI is more highly correlated with Purchase Frequency than the GSI. But when controlling for Intention, the GSI is more strongly correlated with Purchase Frequency.

Table 7

Zero-order and Partial Correlations Between DSI, GSI, and Purchase Frequency While Controlling for Intention

Variables	1	2	3	4
GSI Summated Scale	1.000			
DSI Summated Scale	.485**	1.000		
Purch_frequency	.316**	.370**	1.000	
Intention	.192**	.497**	.402**	1.000
Control Variable: Intention	1	2	3	4
GSI Summated Scale	1.000			
DSI Summated Scale	.457**	1.000		
Purch_frequency	.266**	.214**	1.000	

Note: *p < .01, ** p < .001

Next simultaneous regression was done to further examine this relationship. Using the predictors Intention, DSI and GSI, results indicate that when all three are included in the model, the DSI is not significantly related to visit frequency.

Table 8

Summary of Simultaneous Entry Regression Analysis for Variables Predicting Purchase Frequency

	Purchase Frequency		
Variable	*B*	*SE B*	*β*
DSI	.026	.014	.124
GSI	.026	.008	.198***
Intention	.074	.014	.303***
R^2	.230		
F	29.888**		

Note: *p < .01, ** p < .001

In order to further examine the relationship between DSI, GSI and Intention hierarchical regression was used, with stepwise method at each block. The results indicate that when Intention is added to the model, the DSI drops to insignificance. However, the GSI remains highly significant (p < .001) even with the addition of

Intention actually has an increased beta weight. Further by varying the order of entry the results show that when the DSI is added to the model last (block 3) it is not included in the model. However, when the GSI is added last it remains in the model. This would seem to indicate that the GSI explains some portion of variance in Purchase Frequency above and beyond that of DSI and Intention. Related to this, the results also indicate that the DSI does not add to the model after the variables GSI and Intention are included. Finally when intention is added last it also remains in the model.

Table 9

Summary of Hierarchical Regression Analysis for Variables Predicting Purchase Frequency

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
DSI	.076	.011	.370***	.058	.012	.284***	.026	.014	.124
GSI				.023	.008	.179	.026	.008	.198***
Intent							.074	.014	.303***
R^2			.137			.161			.230
F change in R^2			.137**			.024**			.069**

Note: *p < .01, ** p < .001

4.5.2. *Visit Frequency.* As with Purchase Frequency zero-order correlations were run. According to the zero-order correlations, the DSI, GSI, and intention are all significantly correlated with Visit Frequency (Table 10). However, when controlling for Intention the GSI relationship becomes insignificant.

Table 10

Zero-order and Partial Correlations Between DSI, GSI, and Visit Frequency While Controlling for Intention

Variables	1	2	3	4
GSI Summated Scale	1.000			
DSI Summated Scale	.487**	1.000		
Visit_frequency	.192**	.433**	1.000	
Intention	.193**	.499**	.500**	1.000
Control Variable: Intention	1	2	3	4
GSI Summated Scale	1.000			
DSI Summated Scale	.459**	1.000		
Visit_frequency	.112	.244**	1.000	

Note: *p < .01, ** p < .001

Next simultaneous entry regression was done to further examine this relationship. Using the predictors Intention, DSI and GSI, results indicate that when all three are included in the model, the GSI is not significantly related to Visit Frequency (Table 11) This paints a somewhat different picture than the zero-order relationship between the two variables (GSI and Visit Frequency) and would seem to indicate that when included in a model which uses Intention and the DSI, the GSI is not a significant predictor.

Table 11

Summary of Simultaneous Entry Regression for Variables Predicting Visit Frequency

	Purchase Frequency		
Variable	*B*	*SE B*	*B*
DSI	.049	.013	..244***
GSI	.000	.007	.000
Intention	.090	.013	.378***
R^2	.295		
F	41.792**		

Note: *p < .01, ** p < .001

Finally, stepwise hierarchical regression was used. As opposed to Purchase Frequency, the results indicate that the GSI does not add to the model after the variables

DSI and Intention are included. Conversely, when the DSI is added to the model last, it is included, indicating that it adds a significant amount of variance explained to the model. This is also the same for Intention, which is kept in the model even when it is added last. This seems to indicate that for Visit Frequency, the GSI does not explain enough variance above and beyond the DSI and Intention to be left in the model.

Table 12

Summary of Hierarchical Regression Analysis for Variables Predicting Visit Frequency

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
GSI	.024	.007	.192***	-.003	.008	-.025	.000	.007	.000
DSI				.089	.012	.445***	.049	.013	.244***
Intention							.090	.013	.378***
R^2			.037			.188			.295
F change in R^2			.037**			.151***			.107**

Note: *p < .01, ** p < .001

Purchase and Visit Range

While this analysis focuses primarily on the measures of online shopping Visit and Purchase Frequency, other variables were briefly examined. As with the other OSP variables zero-order and correlations were run controlling for Intention (Table 13).

Table 13

Zero-order and Partial Correlations Between DSI, GSI, and Purchas and Visit Range While Controlling for Intention

Variables	1	2	3	4	5
Range_visit	1.000				
Range_purch	.635**	1.000			
GSI Summated Scale	.105	.264**	1.000		
DSI Summated Scale	.199**	.339**	.485**	1.000	
Intention	.291**	.301**	.194**	.497**	1.000
Control Variable: Intention	1	2	3	4	5
Range_visit	1.000				
Range_purch	.600**	1.000			
GSI Summated Scale	.051	.220**	1.000		
DSI Summated Scale	.065	.230**	.456**	1.000	

Note: *p < .01, ** p < .001

4.5.3. *Purchase Range.* According to zero-order correlations Purchase Range is significantly related to DSI, GSI and Intention. In addition, when controlling for Intention, the DSI and GSI are still significantly related to Purchase Range (Table 13).

Further, simple regressions support this, with DSI, GSI and Intention all being significant predictors of Purchase Range with Intention having the highest beta weight, followed by DSI, then GSI (Table 14).

Table 14

Summary of Simultaneous Entry Regression for Variables Predicting Purchase Range

	Purchase Range		
Variable	*B*	*SE B*	*B*
Intention	.087	.029	.184 ***
GSI summated scale	.036	.015	.142***
DSI summated scale	.072	.027	.179***
R^2	.154		
F	18.216**		

Note: *p < .01, ** p < .001

Finally stepwise hierarchical regression was used which shows that regardless of order of entry each of these three variables makes significant contributions to explaining variance in Purchase Range, and all are included in the final model.

Table 15

Summary of Hierarchical Regression Analysis for Variables Predicting Purchase Range

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
GSI	.067	.014	.364***	.033	.016	.130*	.036	.015	.142*
DSI				.110	.025		.072	.027	.179**
Intention							.087	.029	.184**
R^2		.070			.128			.145	
F change in R^2		.070			.058***			.045**	

Note: *p < .01, ** p < .001

4.5.4. *Visit Range.* The picture is somewhat different for Visit Range than Purchase Range. As the zero-order correlations show, the GSI is not significantly related to Visit Range, while DSI and Intention are. However, when controlling for Intention, neither the DSI nor GSI are significantly related to Visit Range.

Next simple simultaneous entry regression was done to further examine this relationship. Using the predictors Intention, DSI and GSI, results indicate that when all three are included in the model, neither DSI nor GSI are significant predictors (see Table 16).

Table 16

Summary of Simultaneous Entry Regression for Variables Predicting Visit Range

	Purchase Frequency		
Variable	*B*	*SE B*	*B*
Intention	.112	.028	.257 ***
GSI summated scale	.006	.015	.027
DSI summated scale	.021	.026	.816
R^2	.089		
F	9.815**		

Note: *p < .01, ** p < .001

Finally hierarchical regression was run which indicated that regardless of order of entry, neither the GSI nor the DSI explain enough variance beyond Intention to be included in the model.

4.6. *Structural Model*

4.6.1. *Incomplete Data.* Because missing values can be problematic when using structural equation modeling, an effort was made to insure that the dataset contained no missing values. First it was determined that the incomplete data was missing completely at random (MCAR). This was done based on the knowledge that the data had already been cleaned, and by spot checking the missing data. After this one case was deleted due to a large number of missing values for a variable. Further for one subject, the value for variable “browse1” was used for the missing value for variable “browsef”. This was done because the two questions were almost identical. Maximum Likelihood discrepancy was used for all analysis.

4.6.2. *Testing the Measurement Model.* In addition, before specifying the path model, the measurement model was tested. This was done to make sure that the set of indicator variables (the items in the survey) adequately represent the latent variables used

in the model. Ideally each indicator variable should load on a single factor, and indicator variables should cluster according to the latent variable they represent. This is known as the "pure indicator" method of identifying the measurement model (McDonald & Ho, 2002). However, a commonly used lest stringent method, known as the "independent clusters bias" method requires that only two indicators for each latent variable to load on a single factor (McDonald & Ho, 2002).

Using principle component analysis with Varimax rotation, it was found that for each of the latent variables, at least two or more of the indicator variables loaded on a single factor. This would indicate that the items in the model adequately represent the latent variables. However, it was also found that two of the items: Inn2 and Inn4, loaded highly on the same factor as the intention items. Because of this these two items were not included in the final models (See Table 17).

Table 17

Item Factor Loadings, Variance Explained and Eigen Values

	Factor Loadings			
Item	DSI	Intention	GSI	Commonality
DSI 1 In general, I am among the last in my circle of friends to visit a shopping website when it appears.	.385		.678	.620
DSI 2 If I heard that a new website was available for online shopping, I would be interested enough to visit it.		**.719**		.542
DSI 3 Compared to my friends, I have visited few online shopping websites.	.249		.673	.520
DSI)4 I will visit an online shopping website even if I know practically nothing about it.		**.516**	.411	.442
DSI 5 I know the names of new online shopping sites before other people do.		.235	.676	.518
DSI 6 In general, I am the last in my circle of friends to know about new websites.			.777	.650
GSI 1 I am suspicious of new ways of shopping.	.852			.751
GSI 2 I am reluctant to adopt new forms of shopping until I see them working for people around me.	.870			.779

GSI 3 I rarely trust new means of shopping until I can see whether the majority of people accept them.	.858			.766
GSI 4 I am generally cautious about accepting new ways of shopping.	.791			.664
GSI 5 I must see other people using new means of shopping before I will consider them.	.802			.666
GSI 6 I often find myself skeptical of new types of shopping.	.856			.754
GSI 7 I am aware that I am usually one of the last people in my group to accept new styles of shopping.	.605		.432	.557
GSI 8 I tend to feel that the old way of shopping is the best way.	.508	.271	.319	.433
Intent 1 I intend to make one or more purchases online in the next 3 months.		.806		.707
Intent 2 It is highly likely that I would use my credit card to purchase products or services online in the next 3 months.		.659		.448
Intent 3 There is a good chance that in the next 3 months I will browse sites to find products I might be interested in.		.861		.747
Intent 4 in the next 3 months, I intend to go online to search for information about products or services I am interested in.		.826		.698
Eigenvalues	6.596	3.260	1.405	
% of variance	36.646	18.113	7.807	

Note: Rotated component matrix using Varimax, factor loadings under .20 suppressed

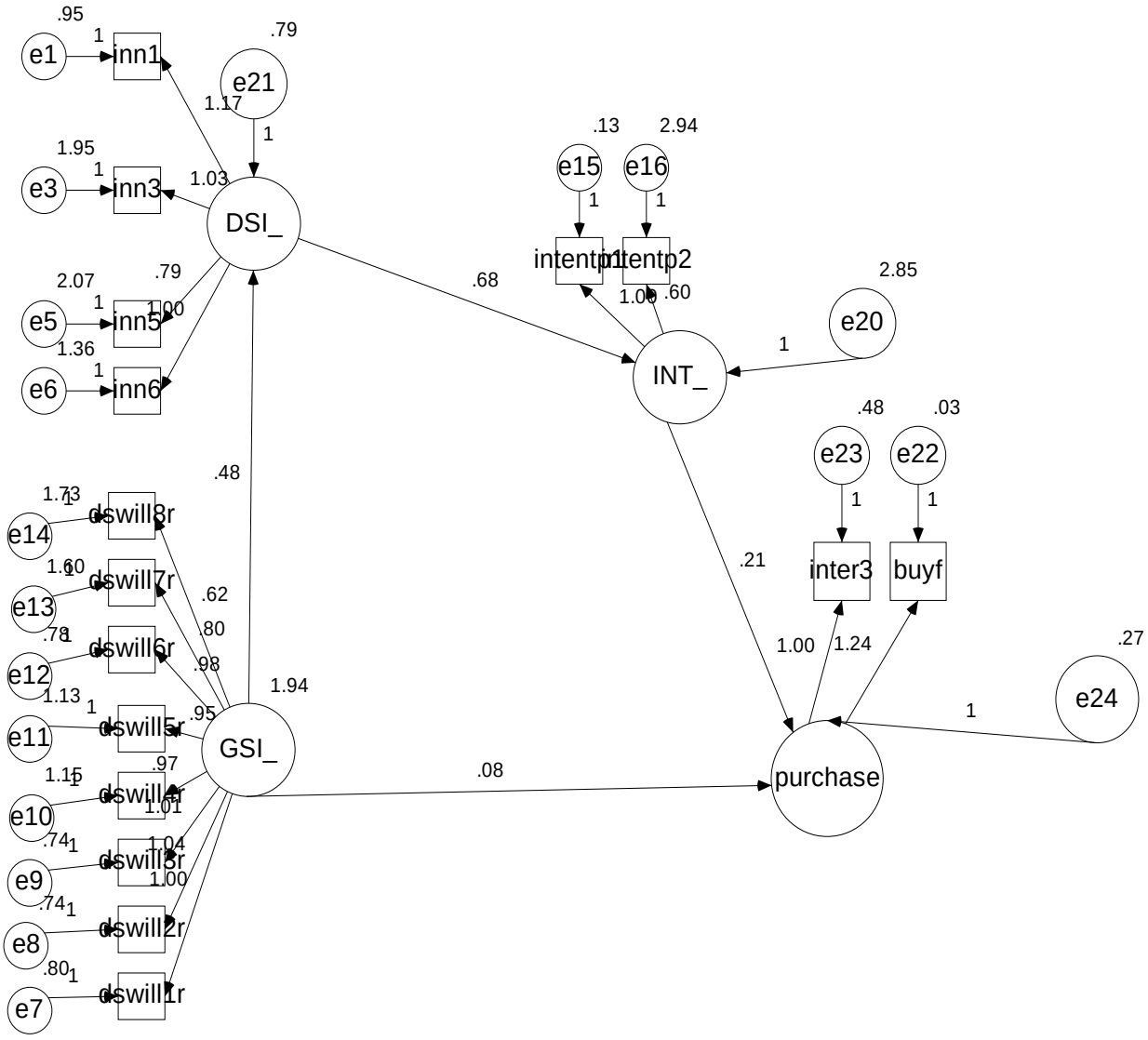
4.6.3. *Adding "Income" to the model.* Based on regression analysis of the demographic variables, it was hypothesized that income might possibly play a role in predicting the online shopping profile (OSP) variables. Overall the results indicate that income was not a good fit for the model. Specifically, the Chi Square and RMSEA both indicate that the model without Income is a better fit for Purchase Frequency (another measure of fit, the GFI, remained the same). Similar results were seen for Visit Frequency, Visit Range, and Purchase Range. Because the results indicate that the variable "Income" does not add much or even detracts from the models, it was not included.

4.6.4. *Purchase Frequency.* The paths specified in the model for purchase frequency were based on the results of the zero-order correlations as well as the regressions done. As mentioned before, partial correlations indicate that on their own, all

three variables (DSI, GSI, and Intention) are significantly related to purchase frequency and that the DSI is more highly correlated with purchase frequency than the GSI. However, when controlling for intention, the GSI is more strongly correlated with Purchase Frequency. Further, simultaneous entry regression support this, showing that when all three variables are included in the model, the DSI is not significant. Finally, as mentioned above, hierarchical regression indicates that when controlling for Intention and GSI, the DSI does not significantly predict purchase frequency. Based on this, the model proposed is shown in Figure 5. Model fit indicators are shown in Table 18 below.

Figure 5

Structural Model of the Relationship Between Domain Specific Innovativeness, General Shopping Innovativeness, Intention to Shop Online and Online Shopping Frequency (Unstandardized Solution)



Inn1 to Inn6 are indicators of Domain Specific Innovativeness (DSI). Dswill1r to dswill8r are indicators of General Shopping Innovativeness (GSI). Intentp1 and intentp2 are indicators of intention to purchase items online. Inter3 and buyf are indicators of online purchase frequency.

Table 18

Unstandardized, Standardized, and Significance Levels for Model in Figure 5

Parameter Estimate			*Unstandardized*	*Standardized*	*p*
Measurement Model Estimates					
DSI_	→	inn6	1.000	.686	
DSI_	→	inn5	.788	.689	***
DSI_	→	inn3	1.031	.520	***
DSI_	→	inn1	1.173	.634	***
GSI_	→	dswill1r	1.000	.800	
GSI_	→	dswill2r	1.041	.841	***
GSI_	→	dswill3r	1.015	.860	***
GSI_	→	dswill4r	.967	.854	***
GSI_	→	dswill5r	.946	.782	***
GSI_	→	dswill6r	.979	.777	***
GSI_	→	dswill7r	.798	.839	***
GSI_	→	dswill8r	.623	.660	***
INT_	→	intentp1	1.000	.550	
INT_	→	intentp2	.596	.982	***
purchase	→	inter3	1.000	.541	
purchase	→	buyf	1.241	.697	***
Error inn6			.143		***
Error inn5			.185		***
Error inn3			.188		***
Error inn1			.134		***
Error dswill1r			.078		***
Error dswill1r			.075		***
Error dswill1r			.074		***
Error dswill1r			.104		***
Error dswill1r			.103		***
Error dswill1r			.076		***
Error dswill1r			.137		***
Error dswill1r			.145		***
Error intentp1			.356		.541
Error intentp2			.263		***
Error inter3			.052		***
Error buyf			.054		.539
Structural Model					
GSI → DSI			.478	.599	***
DSI→ INT			.681	.409	***
INT → purchase			.209	.574	***

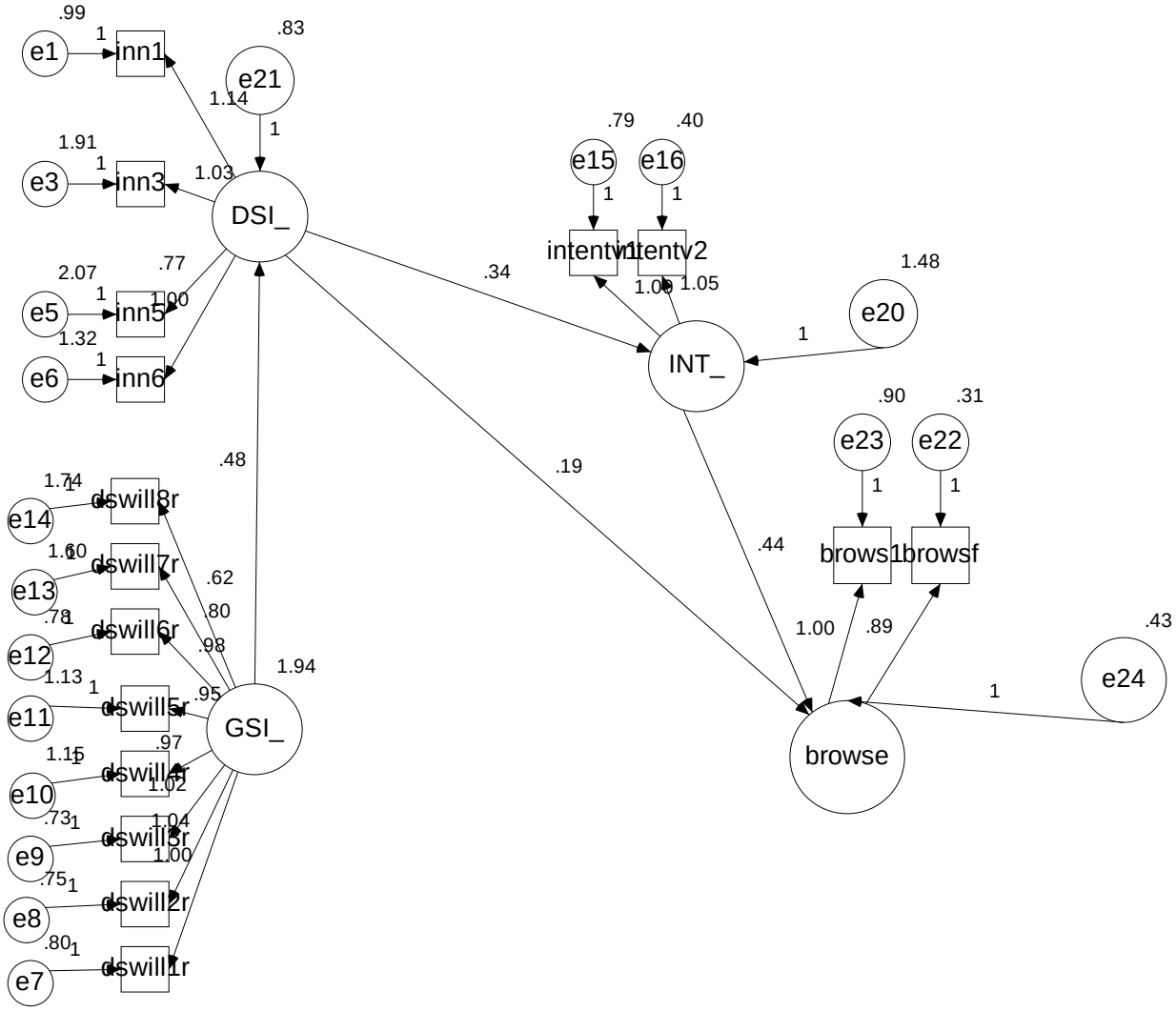
GSI → purchase	.081	.168	.003

Note: $\chi^2(100) = 259.3$, $p < .001$; GFI = .901; RMSEA = .072

4.6.5. *Visit Frequency.* As with Purchase Frequency the paths specified in the structural model were based on zero-order correlations as well as regressions. According to the zero-order correlations, the DSI, GSI, and Intention are all significantly correlated with Visit Frequency. However, as opposed to Purchase Frequency, when controlling for Intention the GSI relationship becomes insignificant. Simultaneous entry regression indicates that when all three are included in the model, the GSI is not significantly related to Visit Frequency. This would seem to indicate that when included in a model which uses intention and the DSI, the GSI is not a significant predictor. Finally, stepwise hierarchical regression was used which showed that after the DSI and Intention variables, the GSI does not explain enough variance to be included in the model. Because of this, the structural model shown in Figure 2 was hypothesized. The results are listed in Table 19.

Figure 6

Structural Model of the Relationship Between Domain Specific Innovativeness, General Shopping Innovativeness, Intention to Shop Online and Online Browsing Frequency (Unstandardized Solution)



Inn1 to Inn6 are indicators of Domain Specific Innovativeness (DSI). Dswill1r to dswill8r are indicators of General Shopping Innovativeness (GSI). Intentv1 and intentv2 are indicators of intention to brows items online. Brows1 and browsf are indicators of online browsing frequency.

Table 19

Unstandardized, Standardized, and Significance Levels for Model in Figure 6

Parameter Estimate			*Unstandardized*	*Standardized*	*p*
Measurement Model					
Estimates					
DSI_	→	inn6	1.000	.700	
DSI_	→	inn5	.774	.519	***
DSI_	→	inn3	1.029	.643	***
DSI_	→	inn1	1.142	.791	***
GSI_	→	dswill1r	1.000	.842	
GSI_	→	dswill2r	1.039	.859	***
GSI_	→	dswill3r	1.015	.856	***
GSI_	→	dswill4r	.967	.783	***
GSI_	→	dswill5r	.946	.778	***
GSI_	→	dswill6r	.979	.839	***
GSI_	→	dswill7r	.797	.659	***
GSI_	→	dswill8r	.619	.548	***
INT_	→	intentv1	1.000	.821	
INT_	→	intentv2	1.054	.905	***
brows	→	Brows1	1.000	.700	
brows	→	Browsf	.888	.828	***
Error inn6			1.322		***
Error inn5			2.070		***
Error inn3			1.910		***
Error inn1			.990		***
Error dswill1r			.797		***
Error dswill1r			.746		***
Error dswill1r			.731		***
Error dswill1r			1.145		***
Error dswill1r			1.130		***
Error dswill1r			.779		***
Error dswill1r			1.604		***
Error dswill1r			1.738		***
Error intentv1			.791		***
Error intentv2			.402		.001
Error brows1			.904		***
Error browsf			.315		***
Structural Model					
GSI → DSI			.475	.587	***
DSI→ INT			.341	.301	***
INT → browse			.443	.607	***

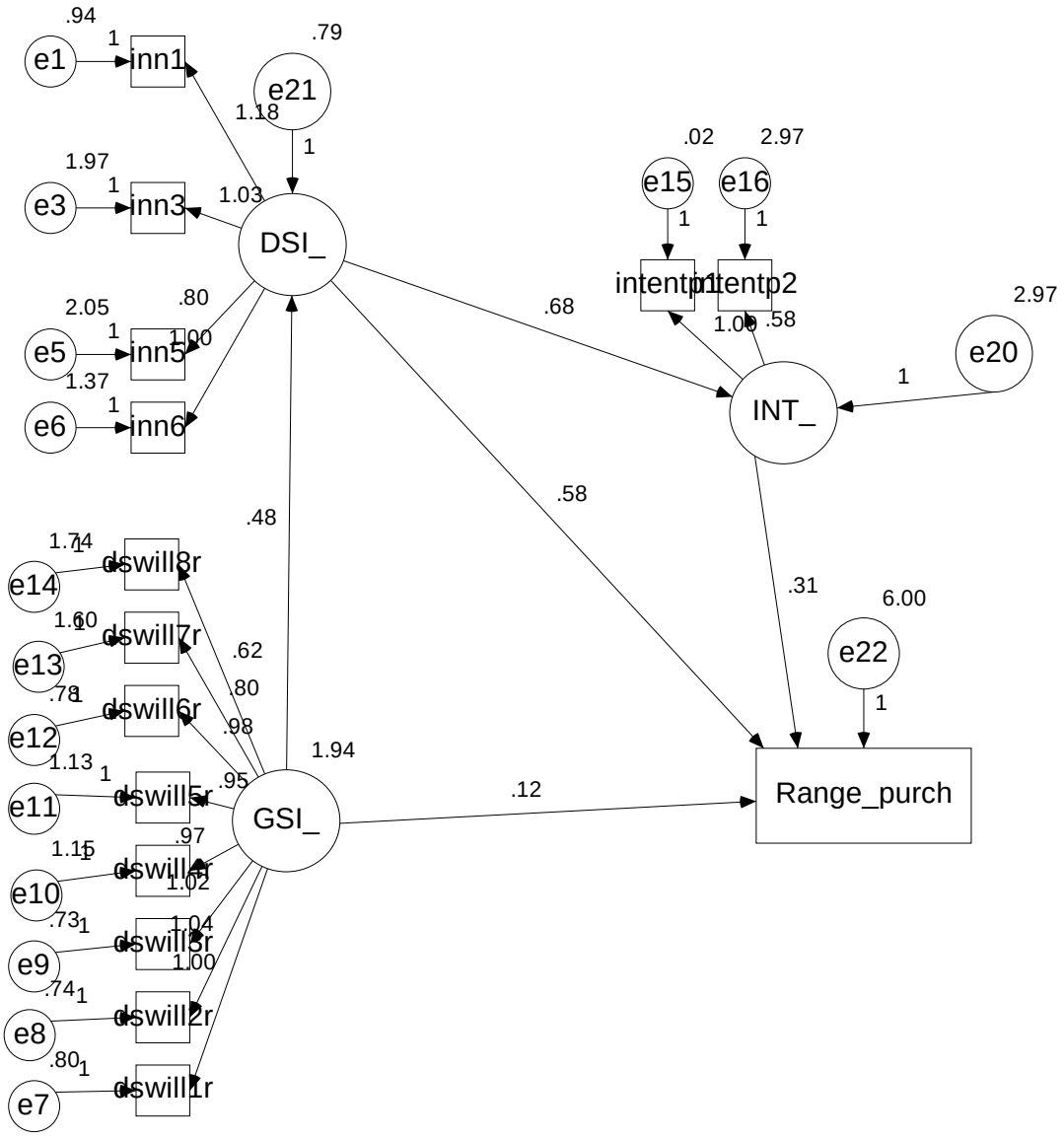
DSI → browse	.190	.230	***

Note: $\chi^2(100) = 235.1$, $p < .001$; GFI = .909; RMSEA = .067

4.6.6. *Purchase Range.* The paths specified in the model were based on the results of the zero-order correlations as well as the regressions done. As mentioned before, zero-order correlations indicate that all three predictors are significantly related to Purchase Range, and partial correlations indicate that the DSI and GSI are still related even when controlling for Intention. Further, simultaneous entry regression support this, with DSI, GSI and Intention all being significant predictors of Purchase Range. Because of this, direct paths between all three variables and Purchase Range in the model were specifcied. The results are listed in Table 20.

Figure 7

Structural Model of the Relationship Between Domain Specific Innovativeness, General Shopping Innovativeness, Intention to the Range of Items Purchased Online (Unstandardized Solution)



Inn1 to Inn6 are indicators of Domain Specific Innovativeness (DSI). Dswill1r to dswill8r are indicators of General Shopping Innovativeness (GSI). Intentp1 and intentp2 are indicators of intention to purchase items online. Purchase range is an indicator on the range of items purchased online.

Table 20

Unstandardized, Standardized, and Significance Levels for Model in Figure 8

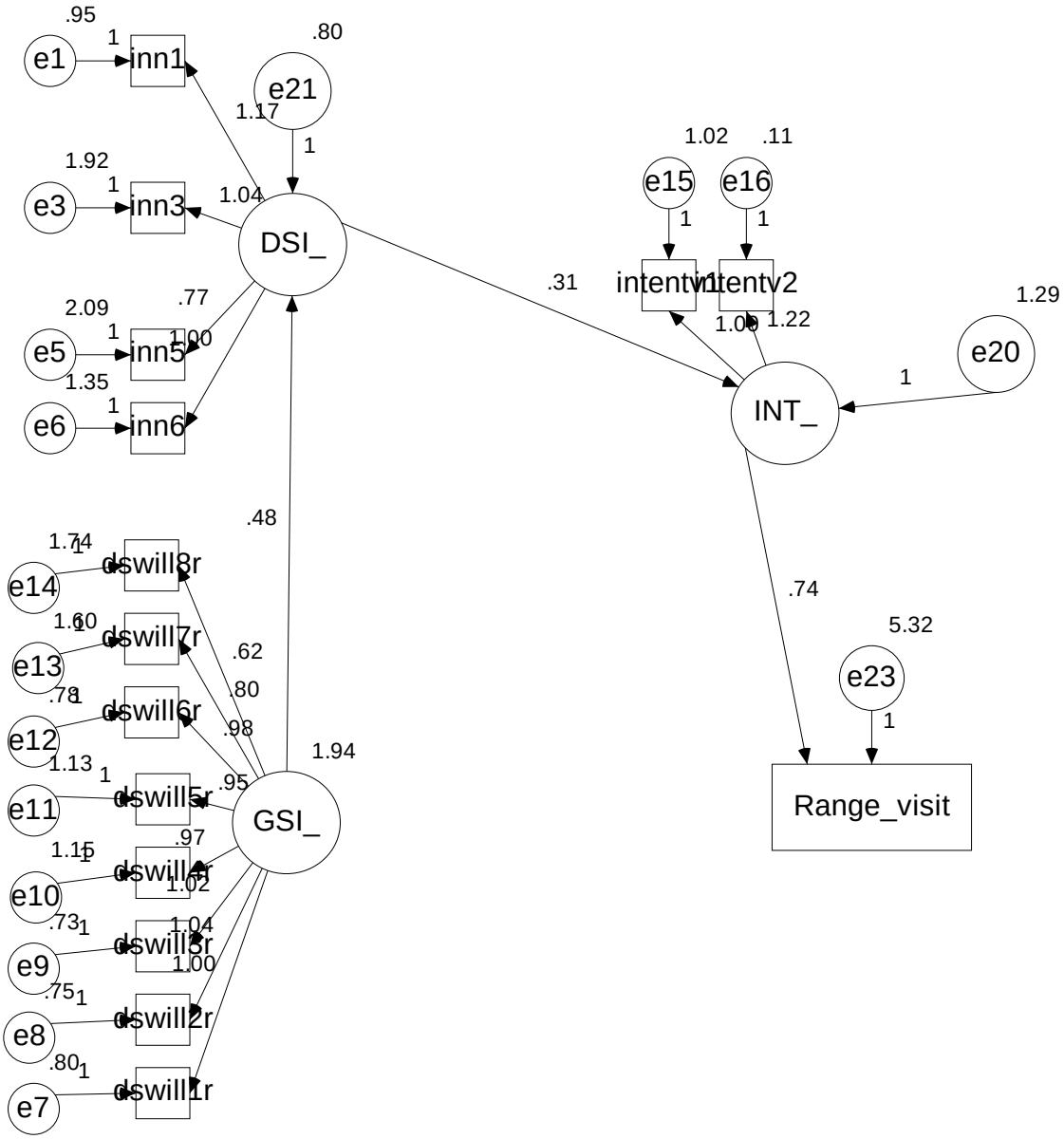
Parameter Estimate	*Unstandardized*	*Standardized*	*p*
Measurement Model Estimates			
DSI_ → inn6	1.000	.687	
DSI_ → inn5	.799	.526	***
DSI_ → inn3	1.026	.629	***
DSI_ → inn1	1.179	.802	***
GSI_ → dswill1r	1.000	.842	
GSI_ → dswill2r	1.039	.859	***
GSI_ → dswill3r	1.016	.856	***
GSI_ → dswill4r	.967	.783	***
GSI_ → dswill5r	.946	.778	***
GSI_ → dswill6r	.979	.839	***
GSI_ → dswill7r	.797	.659	***
GSI_ → dswill8r	.621	.549	***
INT_ → intentp1	1.000	.998	
INT_ → intentp2	.578	.533	***
Error inn6	1.368		***
Error inn5	2.049		***
Error inn3	1.968		***
Error inn1	.945		***
Error dswill1r	.798		***
Error dswill1r	.745		***
Error dswill1r	.730		***
Error dswill1r	1.145		***
Error dswill1r	1.132		***
Error dswill1r	.781		***
Error dswill1r	1.603		***
Error dswill1r	1.735		***
Error intentp1	.016		***
Error intentp2	2.972		.001
Structural Model			
GSI → DSI	.475	.598	***
DSI→ INT	.681	.401	***
INT → Range_purch	.311	.217	.007
GSI → Range_purch	.122	.063	.395
DSI → Range_purch	.577	.237	.008

Note: $\chi^2(86) = 220.1$, $p < .001$; GFI = .910; RMSEA = .072

4.6.7. *Visit Range.* The model is somewhat different for visit frequency. Zero-order, partial correlations and simultaneous entry regression all indicate that when the variable intention is included, neither the DSI nor the GSI are significant predictors. Because of this, the only direct path or predictor for Visit Frequency is from intention. The results are listed in Table 21. The model is shown in Figure 8.

Figure 8

Structural Model of the Relationship Between Domain Specific Innovativeness, General Shopping Innovativeness, and Intention to the Range of Items Browsed Online



Inn1 to Inn6 are indicators of Domain Specific Innovativeness (DSI). Dswill1r to dswill8r are indicators of General Shopping Innovativeness (GSI). Intentp1 and intentp2 are indicators of intention to purchase items online. Purchase range is an indicator on the range of items purchased online.

Table 21

Unstandardized, Standardized, and Significance Levels for Model in Figure 8

Parameter Estimate			*Unstandardized*	*Standardized*	*p*
Measurement Model					
Estimates					
DSI_	→	inn6	1.000	1.351	
DSI_	→	inn5	.771	2.093	***
DSI_	→	inn3	1.036	1.923	***
DSI_	→	inn1	1.169	.949	***
GSI_	→	dswill1r	1.000	.797	
GSI_	→	dswill2r	1.039	.745	***
GSI_	→	dswill3r	1.015	.732	***
GSI_	→	dswill4r	.967	1.145	***
GSI_	→	dswill5r	.946	1.130	***
GSI_	→	dswill6r	.979	.780	***
GSI_	→	dswill7r	.797	1.603	***
GSI_	→	dswill8r	.619	1.739	***
INT_	→	intentv1	1.000	1.018	
INT_	→	intentv2	1.225	.109	***
Error inn6			1.233		***
Error inn5			1.346		***
Error inn3			2.313		***
Error inn1			2.162		***
Error dswill1r			1.221		***
Error dswill1r			.795		***
Error dswill1r			.748		***
Error dswill1r			.730		***
Error dswill1r			1.147		***
Error dswill1r			1.131		***
Error dswill1r			.778		***
Error dswill1r			1.607		***
Error intentv1			1.737		***
Error intentv2			.946		.234
Structural Model					
GSI → DSI			.475	.594	***
DSI→ INT			.309	.290	***
INT → Range_visit			.735	.353	***

Note: $\chi^2(88) = 209.9$, $p < .001$; GFI = .914; RMSEA = .06

CHAPTER V

DISCUSSION

This exploratory study was designed to examine, among other things, the role of innovativeness in online shopping. Several innovativeness scales were examined, both alone as well as in larger models. In addition, several types of online shopping were examined including the amount and range of online purchases made as well as the amount and range that individuals went online to gather information about products. To do this a variety of analysis techniques were used. Direct relationships were examined with simple correlation, while the role of the types of innovativeness with other variables was tested using regression. Finally, complete models were tested using structural equation modeling. The analyses of the results have yielded several important insights that have implications for researchers as well as marketers, which will be discussed in the following section.

5.1. *Online Purchasing and Innovativeness*

One of the primary goals of the current research was to examine the relationship between the innovativeness scales and the degree to which respondents purchase goods or services online. What was found has a strong impact on the current view of this

relationship. Specifically, many researchers have found that the Domain Specific Innovativeness (DSI) scale is a valid predictor of online shopping, and that the DSI mediates the relationship between more general or abstract innovativeness scales and online shopping (Citrin et al., 2000; Goldsmith et al., 1995; Im et al., 2003). Initial analysis of simple (zero-order) correlations support this contention, indicating that the DSI is significantly related to purchase frequency and in fact has a stronger relationship than more general scales such as the General Shopping Innovativeness (GSI) scale. However, closer inspection using multiple regression shows that when a measure of intention is included, the predictive ability of the DSI is severely limited, becoming insignificant. Factor analysis further supports this, showing that two of the six DSI items significantly load with the variable Intention. This is important because the DSI has previously not been tested with the variable Intention, and shows when this variable is included the scale actually breaks into two dimensions. Related to this, upon closer examination of the wording in the items, it seems that DSI items two and four, (which load with Intention) are more "comparative", asking questions regarding online shopping in relation to others, while the other dimension, which consist of items one, three five, and six is "non-comparative", phrasing the question without reference to others. This is not the case for the more abstract GSI, which actually increases in significance when Intention is included. Finally, a structural model which has the DSI working through intention in predicting online purchase frequency (and the GSI making a direct contribution) has been shown to be an acceptable fit of the data.

These initial findings that the DSI is in some way confounded with intention have several important implications. First, it becomes very difficult for researchers to isolate

the innovativeness construct and is impossible to tell if increased adoption of innovations is due to a person's innovativeness, or their intention to adopt the innovation in that domain. Because of this lack of discriminant validity, the scale may not be as effective as once thought for studying innovativeness. Related to this, the findings of the current study, while not fully inconsistent with previous research, should call into question other studies which have found the DSI to be a valid predictor of online purchasing. It is possible that because the DSI is so "specific" the scale itself becomes tautological, and that the relative advantage of the DSI over other scales comes not from being a stronger indicator of a person's innovativeness but from measuring their attitude towards the action or their intent to purchase.

Beyond implications for researchers, these findings are highly relevant to marketers who use the DSI. First the DSI on its own is still a significant predictor of online shopping and if a marketer does not care what is driving the prediction the DSI is still a valuable tool (e.g., for targeting and segmentation). However, if the marketer is concerned about the adoption of new and innovative products, the results show cause for concern. For example, if marketers want to find out if a product is attractive more to innovative consumers (e.g., high technology products); the DSI may not be the best tool to use. This is because even if a significant relationship is found between the scale and the adoption of the product, marketers have no way of knowing if it is because the product appeals to innovative consumers, or because particular consumers have a strong intention to purchase the product (i.e., they already like it and want to buy it). In addition, because of the highly specific nature of the scale, results from one domain cannot be applied to other domains.

Another goal of this research was to examine a new scale, the General Shopping Innovativeness (GSI) scale. This is the first study to systematically examine this scale. Initial results of the scale indicate that the scale has strong internal validity as indicated by its high alpha (α= .919) and by factor analysis, which show that all the items load on a single factor. At first glance, simple correlations show the scale to be significantly related to online shopping, though not as strong as a correlation as the DSI or Intention. Importantly however, multiple regressions show the scale explains a unique portion of the variance in online shopping above and beyond the contributions made by Intention and the DSI. Importantly hierarchical regression also shows that when all three variables are included together the GSI is a stronger predictor of online shopping than is the DSI. Finally, a structural model specifying direct paths between the GSI and Purchase Frequency was found to be significant, and the overall model was found to have acceptable fit indices.

The results of the current study indicate that the GSI is a valuable tool to study the innovativeness construct for several reasons. First, because the GSI is not confounded with Intention it may be a more valid reflection of the innovativeness construct. This is important because it allows researchers to isolate and discern effects of innovativeness in a way that the DSI cannot while maintaining its predictive validity. Second, because it is more general than the DSI scale the results can be applied to other areas of shopping. This is important as technology is increasingly allowing marketers new ways to advertise products, and consumers' new ways to purchase products. Finally, the results of this study would seem to provide initial evidence that the DSI does not fully moderate the relationship between more abstract or general innovativeness scales such as the GSI and

online purchasing. This is somewhat different than current hierarchical models (e.g., Citrin et al., 2000, Goldsmith et al., 1995) which posit more abstract or general innovativeness scales working through domain specific innovativeness in explaining adoption of innovations.

Another measure of online shopping habits that was examined is the range of different items purchased online. An examination of simple correlations shows that both the DSI and GSI are significantly related to Purchase Range. Further, simple as well as hierarchical regressions show that the DSI as well as the GSI make significant contributions in explaining the variance in Purchase Range even when Intention is included in the model. Finally, a structural model which specified direct paths between the DSI, GSI, and Intention and purchase range showed good fit indices, supporting the notion that each of these variables makes independent contributions to explaining variance in respondents Purchase Range scores.

This is important for several reasons. For marketers, it shows that both types of innovativeness scales can be used to predict the range of different goods, products, and services that individuals will purchase online. This could be relevant in many different situations (e.g., a company that wants to sell many different types of products online). For researchers it shows that all three predictors (the DSI, GSI and Intention) should be used to explain Purchase Range. For the GSI these results show that the scale not only predicts the frequency of online purchasing but also the number of product categories purchased online.

5.2 *Browsing and Innovativeness*

Another goal of the current research was to examine the relationship between the innovativeness scales and the degree to which someone goes online to gather information about products. As with Purchase Frequency, correlations, regressions, and structural equation modeling were used to examine this relationship alone and with other variables. Results of zero-order correlations indicate that both the DSI and GSI are significantly related to visit frequency. However, as opposed to Purchase Frequency, when a measure of Intention is included, the DSI remains a significant predictor of visit frequency, and it is the GSI that drops to insignificance. Further, a structural equation model supports this, indicating that the GSI works through the DSI in explaining Visit Frequency.

These findings have several important implications. The first is that there seems to be a difference between going online to gather information and actually purchasing products online and that while the GSI is significantly related to online purchasing, it is the DSI that is related to visiting websites to gather information. This could be due to the fact that to respondents, gathering information or "window shopping" a product online may not be that innovative an action. Indeed, people have been viewing products online for several decades. On the other hand, actually buying products online may be something that is relatively new to the majority of respondents. Along these lines, one would expect that if online shopping is a relatively new and innovative action, but online browsing is not, then an innovativeness scale would better predict online shopping. If one supports the contention that the GSI is in fact a better measure of innovativeness than the DSI then the fact that it is a better predictor for online purchasing than online browsing

makes intuitive sense. In addition, the fact that this relationship is not seen with online visiting further could be seen as evidence that online visiting is not an innovative action.

The fact that these two online behaviors are actually different has important implications for marketers. For example, if companies and marketers are attempting to increase online purchasing (sales) as opposed to just spread information about their product, they may need a very different marketing mix, one that takes into account the fact that online shopping in itself could be seen as new, risky, innovative, etc. Conversely if the goal is to simply give people information about a product, good, or service then the approach may be different. In summary, this research shows that online shopping and online browsing are two different behaviors, and what predicts the likelihood of one may not work with the other.

While the data supports the contention that online visiting and purchasing are different, another possible explanation could be due to differences in the wording of the items. Specifically, the DSI uses primarily "visiting phrases" when asking about online shopping. For example, the DSI asks "In general, I am among the last in my circle of friends to visit a shopping website when it appears" and "If I heard that a new website was available for online shopping, I would be interested enough to visit it". In fact, four of the six DSI questions use the phrase "visit". The GSI on the other hand does not use the phrase visit in any of the items. Because of this, the DSI plays a different role in predicting using the internet to gather information, possibly being better able to predict visit frequency than the GSI, which does not use the phrase in its wording.

If this is true, it may be charged that the DSI-Visit relationship is at least somewhat tautological. That is, the visit items in the DSI (which indicate that one does or

is willing to visit sites) is basically the same construct as visit frequency. If the relationship is tautological, then the DSI is not explaining visiting it but is more another index of a person's tendency to visit.

As with online purchase range, the range of product categories that people will use the internet to gather information about was also examined. Simple correlations indicate that the DSI as well as Intention are significantly related to Visit Range, but that the GSI has no direct relationship. However, regressions indicate that when Intention is included, neither the GSI nor the DSI have a significant relationship with Visit Range. This could be due to several things. One possibility is that because, as mentioned above, simply visiting a website is not an innovative action, then innovative scales should not predict the range of different websites browsed.

5.3. *Role of Perceived Newness*

In addition to the above, several other research questions were examined. One is the possible interaction between the two measures of perceived newness, novelty and recency, and the innovativeness scales' ability to predict online shopping. It was hypothesized that there should be an interaction; however, this was not found. Specifically, using regression as well as other methods, it was found that neither of the measures of perceived newness (novelty and recency) interacted with the innovativeness scales. This seems to support the contention that the GSI and DSI are equally effective at predicting online shopping regardless of how new the respondent views the action as being. It is interesting to note because an inherent attraction towards newness is an important factor in the innovativeness construct as measured by the DSI. However, the finding that newness does not interact with the DSI is similar to the ones found by Blake

et al. (2007). One possible explanation for this is that the adoption of online shopping was only measured at one point in time. Specially, while newness was found not to interact with innovativeness, it is possible that with increased use, the role that newness plays in online shopping may change. That is, as people shop more online, the action may not be perceived as new. This could decrease the range of novelty scores, especially in the highly innovative group, making it more difficult to find the relationship between innovativeness and novelty (on the high end). Because of this, a possible avenue for future research would be a longitudinal study which tracks subjects over time.

Besides the possible interactions, direct relationships were examined between perceived newness and online purchasing. It was found that neither novelty nor recency play a direct role in predicating the amount of online purchasing. However, in a supplementary analysis a significant quadratic effect was found for both types of newness. While these are preliminary results, they would seem to indicate that there could be an optimum amount of newness at which individuals feel comfortable shopping online. These findings could provide an avenue for future research.

5.4. *Conclusions, Limitations and Future Research*

In summary, this research made four primary contributions. The first was the nature of the DSI was examined in a way which has not been previously done. Results showed that this variable is confounded with purchase intention. Second a new innovativeness scale, the GSI was examined. It was found to be a stable and significant predictor of online shopping. Third, online purchasing versus online browsing was examined. Results indicate that the two types of online shopping behaviors are different and may vary in systematic ways. Finally, the role of newness was examined and it was

found that perceived newness does not interact with innovativeness in predicting online shopping.

While the current study provides several important findings, it is not without limitations. One of the primary limitations is the sample. While the sample is adequate for theory testing, the nature of the sample frame does limit the generalizability. Future studies could attempt to gather a more representative sample from which results could be applied to a larger portion of the population. Related to this, samples from different nations or cultures should also be examined. It is possible that the relationships found may not be the same in different nations or cultures. International differences occurring have been suggested by several studies, which show that the relationship of the DSI and newness to online shopping depends on the nation in question (Blake et al., 2007; Park et al., 2006). This issue is especially important for online shopping, as companies are attempting to market products online to a wide range of multinational consumers from varying cultures.

In addition to increasing the sample frame, the cross-sectional nature of this study could be a possible limitation. This is because while the current studies can examine the adoption of online shopping at a specific point in time, it does not allow us to track the adoption of the innovation over time. As discussed above, this could have implications for specific variables that were examined such as newness. Related to this, the current research posited a model where intention predicts behavior. Indeed, the Intention items are all phrased in the future tense. However, it is possible that behavior in fact predicts intention. If this is so, then the variable Intention may actually work better as a dependent

variable. Again, a longitudinal study would allow for a more in depth examination of the temporal relationship between these variables.

Another possible limitation is the use of purchase frequency as a dependent variable for internet shopping. It could be argued that purchase frequency as a continuous variable does not necessarily represent increased adoption of an innovation. Because of this, some studies (e.g., Goldsmith and Freiden, 1995; Im et al., 2003) use a cross-sectional method as a measure of innovation adoption. However, our study builds on the work of many studies which use purchase frequency as a measure of adoption, especially the adoption of the internet for shopping. In one example, Citrin et al. (2000) asked respondents how often they used the internet for shopping in the past year. Responses were on a 10 point scale ranging from "0 times" to "10 or more times". (Citrin et al., 2000, p. 297). In addition, Goldsmith (2001) used several frequency related questions to measure the amount of online buying. One question asked "how often would you say that you purchase online", with respondents answering on a 6-point scale ranging from never to very often. Another question asked "how often do you purchase online" with responses ranging from 1 = "never do" to 6 = "more than once a week" (Goldsmith, 2001, p. 153). Finally, the current study builds on the work of Blake et al. (2003, 2007) who use purchase frequency as a dependent variable. Besides building on current studies, the nature of the innovation itself (online shopping) may yield itself to frequency as a measure. This is as opposed to certain goods or service, in which repeat adoption or purchase would be unusual or impossible (e.g., life insurance).

Finally, while structural equation modeling does allow for causal relationships to be tested, it is limited by the variables chosen to be in the model. In our case it is possible

important variables were left out. For example, while the data did not support the use of demographics in the proposed models, other studies (Im et al., 2003) have found that variables such as income play a role in the adoption of online shopping. Related to this, the current study looked at only two innovativeness scales, the DSI and the GSI. The role that more general innovativeness scales play in such a model remains unknown. Because of this, future studies could further test this model on a different sample with other variables and also use different scales.

In addition to the above, the current study could provide several other avenues for future research. First, the GSI should be studied and validated in a larger context, with a more diverse sample. Because of the generality of the measure, its validity in other shopping contexts should be examined. As new ways of shopping are constantly being developed, this scale could prove to be an important tool, providing marketers with a more flexible scale that better adapts to changing trends and technology which consumers use to shop.

Second, the wording of innovativeness scales (especially the GSI) indicates strong aspects of reluctance, emphasizing cautiousness rather than excitement. For example, one GSI item sates “I am suspicious of new ways of shopping”, another states “I am reluctant to adopt new forms of shopping until I see them working for people around me”, and “I am generally cautious about accepting new ways of shopping”. Because of this, it could be possible that a person’s regulatory focus may play a role in how much they agree with the items. According to regulatory focus theory (Higgins, 1997) an individual has two distinct focuses, a promotion focus and a prevention focus. The promotion focus is concerned with meeting gains and results in a higher sensitivity to the presence or

absence of positive outcomes. The prevention focus is concerned with meeting security needs and results in a heightened sensitivity to the presence or absence of negative outcomes (Higgins, 1997). Because the innovativeness scales were framed in a "prevention" manner, individuals with a prevention focus may be more receptive to these scales. While regulatory focus scales were not used in the current study, a measure of individual/collectiveness was given (but not analyzed). Research has shown that individualistic cultures are more promotion oriented, while collectivist cultures are more prevention oriented (Lee et al., 2000). Because of this, it is possible that the individual/collectivist scale given in the current study could interact with the innovation scales, which are primarily prevention focused. Beyond examination of the current data however, the relationship between regulatory focus and innovativeness could be another avenue for future research.

Finally, the role of the DSI should be further researched both in regards to its discriminant and predictive validity as well as value to market researchers. This could possibly include a re-examination of past studies as well as an attempt to replicate the current findings.

REFERENCES

Agarwal, R., & Prasad, J. (1998). A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information Systems Research, 9*(2), 204-215.

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

Bauer, H. H., Barnes, S. J., Reichardt, T., & Neumann, M. M. (2005). Driving consumer acceptance of mobile marketing: A theoretical framework and empirical study. *Journal of Electronic Commerce Research, 6*(3), 181-192.

Baumgartner, H., & Steenkamp, J. (1996). Exploratory consumer buying behavior: Conceptualization and measurement. *International Journal of Research in Marketing, 13*(2), 121-137.

Bearden, W. O., Netemeyer, R. G., & Teel, J. E. (1989). Measurement of consumer susceptibility to interpersonal influence. *Journal of Consumer Research, 15*, 473-481.

Blake, B. F., Neuendorf, K. A., & Valdiserri, C. M. (2003). Innovativeness and variety of internet shopping. *Internet Research: Electronic Networking Applications and Policy, 13*(3), 156-169.

Blake, B. F., Neuendorf, K. A., & Valdiserri, C. M. (2005). Tailoring new websites to appeal to those most likely to shop online. *Technovation, 25*(3), 1205-1214.

Blake, B.F., Shamatta, C., Neuendorf, K.A., & Hamilton, R. (2008, in press). The cross-national comparison of website feature preferences: A practical approach. *International Journal of Internet Marketing and Advertising.*

Blake, B. F.,Valdiserri, C. M., Neuendorf, K. A., & Valdiserri, J. N. (2007). The online shopping profile in the cross national context: The role of innovativeness and perceived newness. *Journal of International Consumer Marketing, 19* (3), 23-51.

Blythe, J. (1999). Innovativeness and newness in high-tech consumer durables. *Journal of Product & Brand Management, 8*(5), 415-429.

Chang, M. K., Cheung, W., & Lai, V. S. (2005). Literature derived reference models for the adoption of online shopping. *Information and Management, 42*, 543-559.

Citrin, A. V., Sprott, D. E., Silverman, S. N., & Stem, D. E., Jr. (2000). Adoption of internet shopping: The role of consumer innovativeness. *Industrial Management and Data Systems, 100*(7), 294-300.

Clark, R. A., & Goldsmith, R. E. (2006). Interpersonal influence and consumer innovativeness. *International Journal of Consumer Studies, 30*(1), 34-43.

Crespo, A. H., & Rodriguez Del Bosque Rodriquez, I. A. (2007). Explaining B2C e-commerce acceptance: An integrative model based on the framework by Gatignon and Robertson. *Interacting with Computers, 20*, 212-224.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-339.

Davis, F. D., Bagozzi, R. P., & Warshaw, P., R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science, 35*(8), 982-1003.

Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-service adoption: A perceived risk factors perspective. *International Journal of Human-Computer Studies, 59*, 451-474.

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

Foxall, G. R. (1995). Cognitive styles of consumer initiators. *Technovation, 15*(5), 269-288.

Frank, L., Sundqvist, S., Puumalainen, K., & Sintonen S. (2006). Do innovativeness attitudes and behavior lead to adoption? Empirical evidence from wireless services in Finland, Germany, and Greece. *Journal of Euromarketing*, *15*(3), 11-21.

Gefen, D., & Straub, D. W. (1997). Gender differences in the perception and use of email: An extension of the technology acceptance model. *MIS Quarterly*, *21*(4), 389-400.

Girardi, A., Soutar, G. N., & Ward, S. (2005). The validation of a use innovativeness scale. *European Journal of Innovation Management*, *8*(4), 471-481.

Goldsmith, R. E. (1984). Personality characteristics associated with adoption-innovation. *Journal of Psychology*, *117*, 159-165.

Goldsmith, R. E. (2001). Using the domain specific innovativeness scale to identify innovative internet consumers. *Internet Research: Electronic Networking Applications and Policy*, *11*(2), 149-158.

Goldsmith, R. E., Clark, R. A., & Goldsmith, E. B. (2006). Extending the psychological profile of market mavenism. *Journal of Consumer Behavior, 5*, 411-419.

Goldsmith, R. E., & Flynn, L. R. (1992). Identifying innovators in consumer product markets. *European Journal of Marketing*, *26*(12), 42-55.

Goldsmith, R. E., Flynn, L. R., & Goldsmith, E. B. (2003) Innovative consumers and market mavens. *Journal of Marketing Theory and Practice, 11* (4), 54-64.

Goldsmith, R. E., & Foxall, G. R. (2003). The measurement of innovativeness. In L. V.

Shavinina (Ed.), *The International Handbook on Innovation* (pp. 321-330). Oxford: Elsevier Science Ltd.

Goldsmith, E. R., Freiden, J. B., & Eastman, J. K. (1995). The generality/specificity issue in consumer innovativeness research. *Technovation, 15*(10), 601-612.

Goldsmith, R. E., & Hofacker, C. F. (1991). Measuring consumer innovativeness. *Journal of the Academy of Marketing Science, 19*(3), 209-221.

Gounaris, S. & Koritos, C. (2008). Investigaating the drivers of internet banking adoption decision: A comparison of three alternative frameworks. *International Journal of Bank Marketing,* 26(5), 282-304.

Grewal, R., Mehta, R., & Kardes, F. R. (2000). The role of the social-identity function of attitudes in consumer innovativeness and opinion leadership. *Journal of Economic Psychology, 21*, 233-252.

Ha, Y., & Stoel, L. (2004). Internet apparel shopping behaviors: The influence of general innovativeness. *International Journal of Retail and Distribution Management, 32*(8), 377-385.

Hartman, J. B., Gehrt, K. C., & Watchravesringkan, K. (2004). Re-examination of the concept of innovativeness in the context of the adolescent segment: Development of a measurement scale. *Journal of Targeting, Measurement & Analysis for Marketing, 12*(4), 353-365.

Hauser, T., Tellis, G., & Griffin, A. (2006). Research on innovation: A review and agenda on Marketing Science. *Marketing Science, 25*(6), 867-717.

Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist, 52*(12), 1280-1300.

Hirschman, E. C. (1980). Innovativeness, novelty seeking, and consumer creativity. *Journal of Consumer Research, 7*(3), 283-295.

Hirunyawipada, T., & Paswan, A. K. (2006). Consumer innovativeness and perceived risk: implications for high technology product adoption. *Journal of Consumer Marketing, 23*(4), 182-198.

Hurt, H. T., Joseph, K., & Cook, C. D. (1977). Scales for the measurement of innovativeness. *Human Communication Research, 4*(1), 58-65.

Im, S., Bayus, B. L., & Mason, C. H. (2003). An empirical study of innate consumer innovativeness, personal characteristics, and new-product adoption behavior. *Journal of the Academy of Marketing Science, 34*(1), 61-73.

Im, S., Mason, C. H., & Houston, M. B. (2007). Does innate consumer innovativeness relate to service adoption behavior? The intervening role of social learning via vicarious innovativeness. *Journal of the Academy of Marketing Science, 33*(1), 63-75.

King, C. W., & Summers, J. O. (1970). Overlap of opinion leadership across product categories. *Journal of Marketing Research, 7*, 43-50.

Kirton, M. (1976). Adaptors and innovators: A description and measure. *Journal of Applied Psychology, 61*(5), 622-629.

Lassar, W. M., Manolis, C., & Lassar, S. S. (2005). The relationship between consumer innovativeness, personal characteristics, and online banking adoption. *International Journal of Bank Marketing, 23*(2), 176-199.

Lee, A. Y., Aaker, J. L., & Gardner, W. L. (2000). The pleasures and pains of distinct self-construals: The role of interdependence in regulatory focus. *Journal of Personality and Social Psychology, 78*(6), 1122-1134.

Lee, H. Y., Qu, H., & Kim, Y. S. (2007). A study of the impact of personal innovativeness on online travel shopping behavior – a case study of Korean travelers. *Tourism Management, 28*, 886-897.

Lennon, S. J., Kim, M., Johnson, K. K. P., Jolly, L. D., Damhorst, M. L., & Jasper, C. R. (2007). A longitudinal look at rural consumer adoption of online shopping. *Psychology and Marketing, 24*(4), 375-401.

Levitt, C., & Walton, J. (1975). Development of a scale for innovativeness. In *Advances in Consumer Research, 545-554.* Ann Arbor, MI: Assoc. for Consumer Research.

Lian, J., & Lin, T. (2007). Effects of consumer characteristics on their acceptance of online shopping: Comparisons among different product types. *Computers in Human Behavior, 24*, 48-65.

Manning, K. C., Bearden, W.O., & Madden, T. J. (1995). Consumer innovativeness and the adoption process. *Journal of Consumer Psychology, 4*, 329-345.

Maruyama, G. M. (1998). *Basics of structural equation modeling.* Thousand Oaks, CA: Sage Publications.

McDonald, H., & Alpert, F. (2007). Who are innovators and why do they matter? *Marketing Intelligence and Planning, 24*(5), 421-435.

Midgley, D. F., & Dowling, G. R. (1978). Innovativeness: The concept and its measurement. *Journal of Consumer Research, 4*, 229-242.

Neuendorf, K. A., Atkin, D., & Geffres, L., W. (1998). Understanding adopters of audio

information innovators. *Journal of Broadcasting & Electronic Media*, 42, 80-93.

Ostlund, L. E. (1974). Perceived innovation attributes as predictors of innovativeness. *Journal of Consumer Research, 9,* 23-59.

Park, C., & Jun, J. (2003). A cross-cultural comparison of internet buying behavior. *International Marketing Review, 20*(5), 534-553.

Park, H., Burns, L. D., & Rabolt, N. J. (2006). Fashion innovativeness, materialism, and attitude toward purchasing foreign fashion goods online across national borders. *Journal of Fashion Marketing and Management, 11*(2), 201-214.

Raju, P. S. (1980). Optimum stimulation level: Its relationship to personality, demographics, and exploratory behavior. *Journal of Consumer Research, 7*(3), 272-282.

Richins, M. L., & Dowson, S. (1992). A consumer values orientation for materialism and its measurement: Scale development and validation. *Journal of Consumer Research, 19,* 303-316.

Roehrich, G. (2004). Consumer innovativeness concepts and measurements. *Journal of Business Research, 57*, 671-677.

Rogers, E. M. (1964). *Diffusion of innovations* (1st Ed.). NewYork: Free Press.

Rogers, E. M. (1995). *Diffusion of innovations* (4th Ed.). NewYork: Free Press.

Singh, S. (2006). Cultural differences in, and influences on, consumers' propensity to adopt innovations. *International Marketing Review, 23*(2), 173-191.

Steenkamp, J. B., Hofstede, F., & Wedel, M. (1999). A cross-national investigation into the individual and national cultural antecedents of consumer innovativeness. *Journal of Marketing, 63*, 55-69.

Steenkamp, J.B., & Baumgartner, H. (1992). The role of optimum stimulation level in exploratory consumer behavior. *Journal of Consumer Research, 19,* 434-448.

Stone, R. N., & Gronhaug, K. (1993). Perceived risk: Further considerations for marketing discipline. *European Journal of Marketing, 27*(3), 39-50.

Summers, J. O. (1970). Generalized change agents and innovativeness. *Journal of Marketing Research, 8,* 313-316.

Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research, 6*(2), 144-176.

Tellis, G. J., Yin, E., & Bell, S. (2009). Global consumer innovativeness: Cross-country differences and demographic commonalities. *Journal of Marketing, 17* (2), 1-22.

Tellis, G. J., & Yin, E. (2003). The international takeoff of new products: The role of economics, culture, and country innovativeness. *Marketing Science, 22*(2), 188-298.

Vankatramam, M. (1991). The impact of innovativeness and innovation type on adoption. *Journal of Retailing, 67*(1), 51-67.

Vankatramam, M. P., & Price, L. L. (1990). Differentiating between cognitive and sensory innovativeness: Concepts, measurements, and implications. *Journal of Business Research, 20,* 293-315.

Wang, H., Pallister, J. G., & Foxall, G. R. (2006). Innovativeness and involvement as determinants of website loyalty. *Technovation, 26,* 1357-1365.

Wong, N., Rindfleisch, A., & Burroughs, J., E. (2003). Do reverse-worded items confound measures in cross-cultural consumer research? The case of the material values scale. *Journal of Consumer Research, 30,* 72-90.

Wood, S. L., & Swait, J. (2002). Psychological indicators of innovation adoption: Cross classification based on need for cognition and need for change. *Journal of Consumer Psychology, 12*(1), 1-13.

Zairi, M. (1995). Moving from continuous to discontinuous innovation in FMCG: A re-engineering perspective. *World Class Design to Manufacture, 2*(5), 32-37.

APPENDICES

APPENDIX A

Appendix A: Questionnaire

A1. Wave III Innovativeness Survey

SECTION I: INTERNET

1-1 About how long have you been using the Internet? (interlr)

O 3 months or less
O 4-12 months
O 1-3 years
O 4-6 years
O 7-9 years
O 10 or more years

1-2 On average, how many hours per week, if any, do you use the Internet? (interu)

O 0
O 1 - 5
O 6 - 10
O 11 – 15
O 16 - 20
O 21 - or more

1-3 About what percentage of people you know would you guess use the Internet at least once a week? (usersr)

O None
O 1 – 20%
O 21 – 40%
O 41 – 60%
O 61 – 80%
O 81 – 100%

1-4 How often, if ever, do you go online to look for information about products or services without buying anything during that visit? (brows1)

O Never
O Less than once a month
O 1-2 times a month
O 3-5 times a month
O 6-9 times a month
O 10 or more times a month

1-5 How often, if ever, do you go online and make a purchase? (inter3)

O Never
O Less than once a month
O 1-2 times a month
O 3-5 times a month
O 6-9 times a month

O 10 or more times a month

In this survey "shopping" means either browsing for product information or actually making a purchase.

1-6 As far as you know, how many years has online shopping been available to people in the United States? (avail3)

O less than 1 year
O 1 - 3 years
O 4 - 6 years
O 7 - 9 years
O 10 - 12 years
O 13 - 15 years
O more than 16 years

1-7 What was the first year that people around you could find products of interest to them for sale through the Internet? (firstyr3)

O 1990 or earlier
O 1991 - 93
O 1994 - 96
O 1997 - 99
O 2000 - 02
O 2003 - 05
O 2006

1-8 About how long ago did your friends, family, or neighbors learn that they could shop for products through the Internet? (longago3)

O 16 years ago or more
O 13 to 15 years ago
O 10 to 12 years ago
O 7 to 9 years ago
O 4 to 6 years ago
O 1 to 3 years ago
O This current year

1-9 About what percentage of people you know shop online? (shoppersr)

O None
O 1 – 20%
O 21 – 40%
O 41 – 60%
O 61 – 80%
O 81 – 100%

1-10 Compared to shopping in traditional stores, how unusual or novel do you personally find online shopping to be? Use a scale of 1-7, where 1 = *not at all novel or unusual* and 7 = *very novel or unusual*. (novel)

Not at all Novel						**Very Novel**

1 O 2 O 3 O 4 O 5 O 6 O 7 O

1-11 In general, how different is shopping online compared to shopping in traditional stores? Use a scale of 1-7, where 1 = *not at all different* and 7 = *very different*. (similar)

Not at all Different						**Very Different**
1 O	2 O	3 O	4 O	5 O	6 O	7 O

1-12 In general, how unique is shopping online compared to shopping at a traditional store? Use a scale of 1-7, where 1 = *not at all unique* and 7 = *very unique*. (unique)

Not at all Unique						**Very Unique**
1 O	2 O	3 O	4 O	5 O	6 O	7 O

1-13 In general, how innovative is shopping online compared to shopping at a traditional store? Use a scale of 1-7, where 1 = *not at all innovative* and 7 = *very innovative*. (innov)

Not at all Innovative						**Very Innovative**
1 O	2 O	3 O	4 O	5 O	6 O	7 O

1-14 Think about the various ways that you can shop for products or services, for example: going online, going to a traditional store, using a catalog, or ordering from a TV channel. Some are newer than others. Please indicate your agreement or disagreement with the following statements:

		1 = Strongly Disagree		**4 = Neither Agree Nor Disagree**			**7 = Strongly Agree**	
A	I am suspicious of new ways of shopping **(dswill1).**	1O	2O	3O	4O	5O	6O	7O
B	I am reluctant to adopt new forms of shopping until I see them working for people around me. **(dswill2)**	1O	2O	3O	4O	5O	6O	7O
C	I rarely trust new means of shopping until I can see whether the vast majority of people around me accept them **(dswill3)**	1O	2O	3O	4O	5O	6O	7O
D	I am generally cautious about accepting new ways of shopping **(dswill4)**	1O	2O	3O	4O	5O	6O	7O
E	I must see other people using new means of shopping before I will consider them **(dswill5)**	1O	2O	3O	4O	5O	6O	7O
F	I often find myself skeptical of new types of shopping **(dswill6)**	1O	2O	3O	4O	5O	6O	7O
G	I am aware that I am usually one of	1O	2O	3O	4O	5O	6O	7O

	the last people in my group to accept new styles of shopping **(dswill7)**							
H	I tend to feel that the old way of shopping is the best way **(dswill8)**	1O	2O	3O	4O	5O	6O	7O

SECTION II: FEATURES OF ONLINE SHOPPING

How strongly, if at all, do the following aspects of a website encourage you to shop at a particular site?

- **Read through the list and click on the THREE LEAST ENCOURAGING aspects**
- **Go through the list and then rate all 16 aspects from 1 (does not at all encourage me) to 7 (strongly encourages me).**

		LEAST Encouraging	**1 = Does Not At All Encourage Me**						**7 = Strongly Encourages Me**
2-1	The order process is easy to use. **(attr1r)**	O	1O	2O	3O	4O	5O	6O	7O
2-2	The products I am looking for are easy to find **(attr2r)**	O	1O	2O	3O	4O	5O	6O	7O
2-3	It's really unlike any other web site I have ever visited **(attr3r)**	O	1O	2O	3O	4O	5O	6O	7O
2-4	Product price **(attr4r)**	O	1O	2O	3O	4O	5O	6O	7O
2-5	Provides customer feedback (that is, the site provides a place for you to learn about other customer's evaluation of the product) **(attr5r)**	O	1O	2O	3O	4O	5O	6O	7O
2-6	My friends and family have been happy when they have shopped there **(attr6r)**	O	1O	2O	3O	4O	5O	6O	7O
2-7	Reputation and credibility of the company on the web **(attr7r)**	O	1O	2O	3O	4O	5O	6O	7O
2-8	It is enjoyable to visit **(attr8r)**	O	1O	2O	3O	4O	5O	6O	7O

		LEAST Encouraging	**1 = Does Not At All Encourage Me**						**7 = Strongly Encourages Me**
2-9	The delivery time is short **(attr9r)**	O	1O	2O	3O	4O	5O	6O	7O
2-10	The site is in my primary language **(attr10r)**	O	1O	2O	3O	4O	5O	6O	7O
2-11	My friends and family will like to know my opinions of the site **(attr11r)**	O	1O	2O	3O	4O	5O	6O	7O
2-12	A wide selection and variety of products on the	O	1O	2O	3O	4O	5O	6O	7O

	site **(attr12r)**								
2-13	Low or no charge for shipping and handling **(attr13r)**	O	1O	2O	3O	4O	5O	6O	7O
2-14	It has entertaining graphics and displays **(attr14r)**	O	1O	2O	3O	4O	5O	6O	7O
2-15	Provides product information, including FAQs – frequently asked questions **(attr15r)**	O	1O	2O	3O	4O	5O	6O	7O
2-16	A good place to find a bargain **(attr16r)**	O	1O	2O	3O	4O	5O	6O	7O

SECTION III. ORIENTATIONS TO ONLINE SHOPPING

3-1 On average, how often do you search for product or service information on the Internet without buying anything during that visit? (browsf)

O Never **[IF NEVER, CLICK THE BUTTON AND THEN CLICK HERE TO SKIP TO QUESTION 3-3]**

O Rarely

O Less than once a month

O About once a month

O About once a week

O Daily

3-2 How often, if at all, do you VISIT each type of web site (*WITHOUT purchasing*) to collect information? Use any number from 1 (never) to 5 (regularly). [INDICATE ONE RESPONSE FOR EACH ITEM]

		Never		**Sometimes**		**Regularly**
A	Clothing / Accessories **(visit1)**	1O	2O	3O	4O	5O
B	Books / Magazines **(visit2)**	1O	2O	3O	4O	5O
C	Travel Transportation (Airlines,Trains, Buses,Rental Cars, Highway Hotels etc.) **(visit3r)**	1O	2O	3O	4O	5O
D	Travel Destinations (such as Resorts, Cruises, Cities, Historic or Religious Sites etc.) **(visit4r)**	1O	2O	3O	4O	5O
E	Health & Medical **(visit5)**	1O	2O	3O	4O	5O
F	Financial Services **(visit6)**	1O	2O	3O	4O	5O
G	Consumer electronics (such as TV, VCR, stereo, cellular phone) **(visit7)**	1O	2O	3O	4O	5O
H	Entertainment (such as CDs, DVDs, movies, theater) **(visit8)**	1O	2O	3O	4O	5O
I	Computer hardware or software **(visit9)**	1O	2O	3O	4O	5O
J	Food / Beverage / Groceries **(visit10)**	1O	2O	3O	4O	5O

K Home Appliances (such as refrigerator, washing machine) **(visit11)**	1O	2O	3O	4O	5O
L Restaurants **(visit13)**	1O	2O	3O	4O	5O
M Other **(visit12)**	1O	2O	3O	4O	5O

3-3 On average, how often do you make a purchase on the Internet? (buyf)

O Never **[IF NEVER, CLICK THE BUTTON AND THEN CLICK HERE TO SKIP TO QUESTION 3-5]**

O Rarely

O Less than once a month

O About once a month

O About once a week

O Daily

3-4 How often, if at all, do you PURCHASE any of the following items/services (*and not just look for information*) online? Use any number from 1 (never) to 5 (regularly) . [INDICATE ONE RESPONSE FOR EACH ITEM]

	Never		Sometimes		Regularly
A Clothing / Accessories **(purch1)**	1O	2O	3O	4O	5O
B Books / Magazines **(purch2)**	1O	2O	3O	4O	5O
C Travel Transportation (Airlines,Trains, Buses,Rental Cars, Highway Hotels etc.) **(purch3r)**	1O	2O	3O	4O	5O
D Travel Destinations (such as Resorts, Cruises, Cities, Historic or Religious Sites etc.) **(purch4r)**	1O	2O	3O	4O	5O
E Health & Medical **(purch5)**	1O	2O	3O	4O	5O
F Financial Services **(purch6)**	1O	2O	3O	4O	5O
G Consumer electronics (such as TV, VCR, stereo, cellular phone) **(purch7)**	1O	2O	3O	4O	5O
H Entertainment (such as CDs, DVDs, movies, theater) **(purch8)**	1O	2O	3O	4O	5O
I Computer hardware or software **(purch9)**	1O	2O	3O	4O	5O
J Food / Beverage / Groceries **(purch10)**	1O	2O	3O	4O	5O
K Home Appliances (such as refrigerator, washing machine) **(purch11)**	1O	2O	3O	4O	5O
L Restaurants **(purch13)**	1O	2O	3O	4O	5O
M Other **(purch12)**	1O	2O	3O	4O	5O

3-5 Please indicate how much you agree or disagree with the following statements about your reactions to online shopping . Think about the statements as they pertain to the particular types of products/services of interest to you personally. Please indicate one answer for each statement, and react to all of the statements.

1 = Strongly Disagree	4 = Neither Agree Nor Disagree	7 = Strongly Agree

A	In general, I am among the last in my circle of friends to visit a shopping website when it appears. ***(inn1)**	1O	2O	3O	4O	5O	6O	7O
B	I intend to make one or more purchases online in the next 3 months **(intentp1)**	1O	2O	3O	4O	5O	6O	7O
C	If I heard that a new website was available for online shopping, I would be interested enough to visit it. **(inn2)**	1O	2O	3O	4O	5O	6O	7O
D	There is a good chance that in the next 3 months I will browse sites to find products I might be interested in **(intentv1)**	1O	2O	3O	4O	5O	6O	7O
E	Compared to my friends, I have visited few online shopping websites. ***(inn3)**	1O	2O	3O	4O	5O	6O	7O
F	It is highly likely that I would use my credit card to purchase products or services online in the next 3 months **(intentp2)**	1O	2O	3O	4O	5O	6O	7O
G	I will visit an online shopping website even if I know practically nothing about it. **(inn4)**	1O	2O	3O	4O	5O	6O	7O
H	I know the names of new online shopping sites before other people do. **(inn5)**	1O	2O	3O	4O	5O	6O	7O
I	In the next 3 months I intend to go online to search for information about products or services I am interested in. **(intentv2)**	1O	2O	3O	4O	5O	6O	7O
J	In general, I am the last in my circle of friends to know about new websites. **(inn6)**	1O	2O	3O	4O	5O	6O	7O

3-6 Think about Internet shopping. Indicate your agreement or disagreement with the following statements about your preference for the shopping website:

	I prefer a shopping website that conveys a sense of:	**1 = Strongly Disagree**			**4 = Neither Agree Nor Disagree**			**7 = Strongly Agree**
A	Human warmth **(pres1)**	1O	2O	3O	4O	5O	6O	7O
B	Human sensitivity **(pres2)**	1O	2O	3O	4O	5O	6O	7O
C	Human contact (**pres3)**	1O	2O	3O	4O	5O	6O	7O
D	Being personal **(pres4)**	1O	2O	3O	4O	5O	6O	7O
E	Being sociable **(pres5)**	1O	2O	3O	4O	5O	6O	7O

*YOU ARE OVER HALF WAY THROUGH THE SURVEY, THANK YOU FOR YOUR PATIENCE.

SECTION IV. MORE FEATURES OF ONLINE SHOPPING SITES

How strongly, if at all, do the following aspects of a website encourage you to shop at a particular site?

- **Read through the list and click on the THREE LEAST ENCOURAGING aspects**
- **Go through the list and then rate all 16 aspects from 1 (does not at all encourage me) to 7 (strongly encourages me).**

		LEAST Encouraging	**1 = Does Not At All Encourage Me**						**7 = Strongly Encourages Me**
4-1	Providing credit card safety **(attr17r)**	O	1O	2O	3O	4O	5O	6O	7O
4-2	Fast response time from customer service **(attr18r)**	O	1O	2O	3O	4O	5O	6O	7O
4-3	I hear about it on the radio, television or in newspapers **(attr19r)**	O	1O	2O	3O	4O	5O	6O	7O
4-4	The download speed of the page **(attr20r)**	O	1O	2O	3O	4O	5O	6O	7O
4-5	A return policy that is easy to understand and use **(attr21r)**	O	1O	2O	3O	4O	5O	6O	7O
4-6	Price incentives (coupons, future sale items, frequent shopper program, etc.) **(attr22r)**	O	1O	2O	3O	4O	5O	6O	7O
4-7	Interactive web design (try it on, design your product / services) **(attr23r)**	O	1O	2O	3O	4O	5O	6O	7O
4-8	It is quite different from the usual sites **(attr24r)**	O	1O	2O	3O	4O	5O	6O	7O
4-9	It has guarantee from the vendor that my personal information will not be used to invade my privacy **(attr25r)**	O	1O	2O	3O	4O	5O	6O	7O
4-10	Has many options for navigating within the site **(attr26r)**	O	1O	2O	3O	4O	5O	6O	7O

		LEAST Encouraging	**1 = Does Not At All Encourage Me**						**7 = Strongly Encourages Me**
4-11	The Internet links on the site are working properly **(attr27r)**	O	1O	2O	3O	4O	5O	6O	7O
4-12	The site is brand new to the Internet **(attr28r)**	O	1O	2O	3O	4O	5O	6O	7O
4-13	It is free of grammatical and typographical errors **(attr29r)**	O	1O	2O	3O	4O	5O	6O	7O
4-14	Allows instant messaging with the company or company representative **(attr30r)**	O	1O	2O	3O	4O	5O	6O	7O
4-15	It has seals of companies stating that my information on this site is secure (e.g. Verisign) **(attr31r)**	O	1O	2O	3O	4O	5O	6O	7O

4-16	My friends or family will not think less of me if I make a purchase there **(attr32r)**	O	1O	2O	3O	4O	5O	6O	7O
4-17	The privacy policy is easy to find on the site **(attr33r)**	O	1O	2O	3O	4O	5O	6O	7O
4-18	It has received a best site award **(attr34r)**	O	1O	2O	3O	4O	5O	6O	7O
4-19	There is a guarantee from the vendor that the product will arrive on a certain date. **(attr35r)**	O	1O	2O	3O	4O	5O	6O	7O
4-20	Uses a personalized greeting, e.g., "Hello, Tom!" **(attr36r)**	O	1O	2O	3O	4O	5O	6O	7O

SECTION V. GENERAL ISSUES

Now we are interested in your opinion on a variety of topics. Please indicate your agreement or disagreement with the following statements:

		1 = Strongly Disagree		**4 = Neither Agree Nor Disagree**			**7 = Strongly Agree**	
5-1	I would rather struggle through a personal problem by myself than discuss it with my friends **(icoll1)**	1O	2O	3O	4O	5O	6O	7O
5-2	The most important thing in my life is to make myself happy **(icoll2)**	1O	2O	3O	4O	5O	6O	7O
5-3	I tend to do what I think is appropriate, and let others in my family do what they think is appropriate **(icoll3)**	1O	2O	3O	4O	5O	6O	7O
5-4	One does better work working alone than in a group **(icoll4)**	1O	2O	3O	4O	5O	6O	7O
5-5	When faced with a difficult personal problem, it is better to decide what to do yourself, rather than follow the advice of others **(icoll5)**	1O	2O	3O	4O	5O	6O	7O
5-6	What happens to me is my own doing **(icoll6)**	1O	2O	3O	4O	5O	6O	7O
5-7	If the group is slowing me down, it is better to leave it and work alone **(icoll7)**	1O	2O	3O	4O	5O	6O	7O
5-8	If the child won the Nobel Prize, the parents should not feel honored in any way **(icoll8)**	1O	2O	3O	4O	5O	6O	7O
		1 = Strongly Disagree		**4 = Neither Agree Nor Disagree**			**7 = Strongly Agree**	
5-9	Children should not feel honored even if the father were highly praised and given an award by a government official for his contributions and services to the community **(icoll9)**	1O	2O	3O	4O	5O	6O	7O
5-10	In most cases, to cooperate with someone whose ability is lower than	1O	2O	3O	4O	5O	6O	7O

	yours is not as desirable as doing the thing on your own **(icoll10)**							
5-11	One should live one's life independently of others as much as possible **(icoll11)**	1O	2O	3O	4O	5O	6O	7O
5-12	It is important to me that I perform better than others on a task **(icoll12)**	1O	2O	3O	4O	5O	6O	7O
5-13	Aging parents should live at home with their children **(icoll13)**	1O	2O	3O	4O	5O	6O	7O
5-14	Children should live at home with their parents until they get married **(icoll14)**	1O	2O	3O	4O	5O	6O	7O
5-15	I would help within my means, if a relative told me that s(he) is in financial difficulty **(icoll15)**	1O	2O	3O	4O	5O	6O	7O
5-16	I like to live close to my good friends **(icoll16)**	1O	2O	3O	4O	5O	6O	7O
5-17	Individuals should be judged on their own merits, not on the company they keep **(icoll17)**	1O	2O	3O	4O	5O	6O	7O

SECTION VI: MORE FEATURES OF ONLINE SHOPPING

How strongly, if at all, do the following aspects of a website encourage you to shop at a particular site?

- **Read through the list and click on the THREE LEAST ENCOURAGING aspects**
- **Go through the list and then rate all 16 aspects from 1 (does not at all encourage me) to 7 (strongly encourages me).**

		LEAST Encouraging	**1 = Does Not At All Encourage Me**						**7 = Strongly Encourages Me**
6-1	The company offering the product/service guarantees that my personal purchase information will not be shared with other people or organizations **(attr37r)**	O	1O	2O	3O	4O	5O	6O	7O
6-2	Allows email to the company or to a company representative **(attr38r)**	O	1O	2O	3O	4O	5O	6O	7O
6-3	Has one or more animated characters that move or speak **(attr39r)**	O	1O	2O	3O	4O	5O	6O	7O
6-4	The products are guaranteed to be in stock. **(attr40r)**	O	1O	2O	3O	4O	5O	6O	7O
6-5	Has photos of real people **(attr41r)**	O	1O	2O	3O	4O	5O	6O	7O
6-6	Has video of real people **(attr42r)**	O	1O	2O	3O	4O	5O	6O	7O
6-7	The site came online just recently **(attr43r)**	O	1O	2O	3O	4O	5O	6O	7O

6-8	The site describes both benefits and drawbacks of products and services **(attr44r)**	O	1O	2O	3O	4O	5O	6O	7O
		LEAST Encouraging	**1 = Does Not At All Encourage Me**						**7 = Strongly Encourages Me**
6-9	The site carries top-brand products and services **(attr45r)**	O	1O	2O	3O	4O	5O	6O	7O
6-10	Has photos of products **(attr46r)**	O	1O	2O	3O	4O	5O	6O	7O
6-11	There is a guarantee that my credit card information would be safely and securely protected **(attr47r)**	O	1O	2O	3O	4O	5O	6O	7O
6-12	Uses music **(attr48r)**	O	1O	2O	3O	4O	5O	6O	7O
6-13	Uses sounds other than music **(attr49r)**	O	1O	2O	3O	4O	5O	6O	7O
6-14	There is a money-back guarantee.(**(attr50r)**	O	1O	2O	3O	4O	5O	6O	7O
6-15	Uses a lot of graphics **(attr51r)**	O	1O	2O	3O	4O	5O	6O	7O
6-16	Products can be easily compared **(attr52r)**	O	1O	2O	3O	4O	5O	6O	7O
6-17	Has video of products **(attr53r)**	O	1O	2O	3O	4O	5O	6O	7O
6-18	Uses a lot of color **(attr54r)**	O	1O	2O	3O	4O	5O	6O	7O
6-19	The company offering the product/service guarantees that my credit card information would not be abused. **(attr55r)**	O	1O	2O	3O	4O	5O	6O	7O

JUST A FEW MORE QUESTIONS, YOU ARE ALMOST FINISHED.

SECTION VII: BACKGROUND INFORMATION (USA)

7-1 What is your gender? (gender)

O Male
O Female

7-2 How old are you (in years)? (age)

_____

7-3 What is your marital status? (marital)

O Single, never been married
O Married
O Separated/Divorced
O Widowed

7-4 In what state is your permanent address at this current time? (res)

7-5 Were your grandparents born in the U.S.A.? (grands)

O Yes, all four of them
O Yes, 1, 2, or 3 of them
O None of them
O Don't know

7-6 Were your parents born in the U.S.A.? (parents)

O Neither
O My mother
O My father
O Both
O Don't know

7-7 Were you born in the U.S.A.? (born)

O Yes (go to Q37)
O No (go to Q33)
O Don't know

7-8 What is your country/ countries of citizenship? (citiz)

O USA
O If other than USA, please list_____

7-9 What was the last year of education you completed? (educ)

O Some high school
O High school
O Technical School/Training (such as auto mechanic)
O Some college/university
O College/university graduate
O Graduate or professional school

7-10 What is your current employment? [CHECK ALL THAT APPLY]

o Employed-full time **(full)**
o Employed-part time **(part)**
o Self employed **(self)**
o Temporarily unemployed **[GO TO 7-12] (unemploy)**
o Full time student **(student)**
o Homemaker/housewife **(housewife)**
o Retired **(retired)**

7-11 (IF EMPLOYED) What is your occupation? (occup)

O Professional
O Managerial/Executive
O Sales
O Clerical

O Labor with technical training
O Labor without technical training
O Other (please specify) _____ **(occupoe)**

7-12 Please indicate which of the following categories best represents your annual household income before taxes. (income)

O $10,000 or less
O $10,001 to $20,000
O $20,001 to $30,000
O $30,001 to $40,000
O $40,001 to $50,000
O $50,001 to $75,000
O $75,001 to $100,000
O more than $100,000

7-13 How many people live in your household, including yourself (please enter the number)? (hhsize)

_____

7-14 Please indicate whether you own each of the following items. [INDICATE ONE RESPONSE FOR EACH]

		Yes	No	Don't Know
a	A personal computer **(pc)**	O	O	O
b	A DVD player **(dvd)**	O	O	O
c	A high-definition TV (HDTV) **(hdtv)**	O	O	O
d	A Personal Digital Assistant (PDA) **(pda)**	O	O	O
e	A MP3 player **(mp3)**	O	O	O

7-15 Please indicate the type of Internet connection you use most frequently: (connect)

O dial-up connection (slower)
O DSL/LAN/Cable connection (faster)
O don't know

THANK YOU FOR YOUR HELP!

APPENDIX B

Appendix B: Newness and Innovativeness Scale Interaction Regressions

B1. Novelty and DSI Regression: Purchase Frequency

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	DSI summated scale[a]	.	Enter
2	Novelty[a]	.	Enter
3	DSI_novelty[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: purch_frequency

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.371[a]	.138	.135	1.29447	.138	48.315	1	303	.000
2	.372[b]	.139	.133	1.29581	.001	.374	1	302	.541
3	.373[c]	.139	.131	1.29746	.001	.232	1	301	.630

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, Novelty

c. Predictors: (Constant), DSI summated scale, Novelty, DSI_novelty

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80.958	1	80.958	48.315	.000[a]
	Residual	507.721	303	1.676		
	Total	588.680	304			
2	Regression	81.586	2	40.793	24.294	.000[b]
	Residual	507.094	302	1.679		
	Total	588.680	304			
3	Regression	81.977	3	27.326	16.232	.000[c]
	Residual	506.703	301	1.683		
	Total	588.680	304			

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, Novelty

c. Predictors: (Constant), DSI summated scale, Novelty, DSI_novelty

d. Dependent Variable: purch_frequency

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-2.041	.303		-6.741	.000
	DSI summated scale	.076	.011	.371	6.951	.000
2	(Constant)	-1.857	.428		-4.339	.000
	DSI summated scale	.076	.011	.368	6.869	.000
	Novelty	-.010	.017	-.033	-.611	.541
3	(Constant)	-1.339	1.157		-1.157	.248
	DSI summated scale	.056	.042	.272	1.321	.188
	Novelty	-.041	.066	-.128	-.625	.533
	DSI_novelty	.001	.002	.132	.482	.630

a. Dependent Variable: purch_frequency

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Novelty	-.033[a]	-.611	.541	-.035	.993
	DSI_novelty	-.033[a]	-.464	.643	-.027	.556
2	DSI_novelty	.132[b]	.482	.630	.028	.038

a. Predictors in the Model: (Constant), DSI summated scale

b. Predictors in the Model: (Constant), DSI summated scale, Novelty

c. Dependent Variable: purch_frequency

B2. Novelty and GSI Regression: Purchase Frequency

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	GSI summated scale[a]	.	Enter
2	Novelty[a]	.	Enter
3	GSI_novelty[a]	.	Enter

a. All requested variables entered.

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	GSI summated scale[a]	.	Enter
2	Novelty[a]	.	Enter
3	GSI_novelty[a]	.	Enter

b. Dependent Variable: purch_frequency

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.316[a]	.100	.097	1.32286	.100	33.479	1	302	.000
2	.316[b]	.100	.094	1.32497	.000	.036	1	301	.849
3	.316[c]	.100	.091	1.32709	.000	.043	1	300	.836

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, Novelty

c. Predictors: (Constant), GSI summated scale, Novelty, GSI_novelty

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	58.586	1	58.586	33.479	.000[a]
	Residual	528.486	302	1.750		
	Total	587.072	303			
2	Regression	58.650	2	29.325	16.704	.000[b]
	Residual	528.422	301	1.756		
	Total	587.072	303			
3	Regression	58.726	3	19.575	11.115	.000[c]
	Residual	528.346	300	1.761		
	Total	587.072	303			

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, Novelty

c. Predictors: (Constant), GSI summated scale, Novelty, GSI_novelty

d. Dependent Variable: purch_frequency

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	-1.610	.289		-5.570	.000
	GSI summated scale	.041	.007	.316	5.786	.000
2	(Constant)	-1.546	.444		-3.483	.001
	GSI summated scale	.041	.007	.314	5.656	.000
	Novelty	-.003	.018	-.011	-.191	.849
3	(Constant)	-1.330	1.134		-1.172	.242
	GSI summated scale	.036	.027	.273	1.321	.187
	Novelty	-.016	.065	-.051	-.251	.802
	GSI_novelty	.000	.002	.054	.207	.836

a. Dependent Variable: purch_frequency

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Novelty	-.011[a]	-.191	.849	-.011	.970
	GSI_novelty	-.009[a]	-.127	.899	-.007	.599
2	GSI_novelty	.054[b]	.207	.836	.012	.044

a. Predictors in the Model: (Constant), GSI summated scale

b. Predictors in the Model: (Constant), GSI summated scale, Novelty

c. Dependent Variable: purch_frequency

B3. Recency and DSI Regression: Purchase Frequency

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	DSI summated scale[a]	.	Enter
2	recency[a]	.	Enter
3	DSI_recency[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: purch_frequency

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.371[a]	.138	.135	1.29447	.138	48.315	1	303	.000
2	.376[b]	.141	.136	1.29382	.004	1.304	1	302	.254

3	.379[c]	.144	.135	1.29390	.003	.961	1	301	.328

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, recency

c. Predictors: (Constant), DSI summated scale, recency, DSI_recency

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80.958	1	80.958	48.315	.000[a]
	Residual	507.721	303	1.676		
	Total	588.680	304			
2	Regression	83.140	2	41.570	24.833	.000[b]
	Residual	505.539	302	1.674		
	Total	588.680	304			
3	Regression	84.750	3	28.250	16.874	.000[c]
	Residual	503.930	301	1.674		
	Total	588.680	304			

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, recency

c. Predictors: (Constant), DSI summated scale, recency, DSI_recency

d. Dependent Variable: purch_frequency

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.041	.303		-6.741	.000
	DSI summated scale	.076	.011	.371	6.951	.000
2	(Constant)	-1.662	.449		-3.701	.000
	DSI summated scale	.077	.011	.373	6.991	.000
	recency	-.035	.030	-.061	-1.142	.254
3	(Constant)	-2.839	1.281		-2.216	.027
	DSI summated scale	.123	.048	.595	2.558	.011
	recency	.071	.112	.125	.634	.527
	DSI_recency	-.004	.004	-.299	-.981	.328

a. Dependent Variable: purch_frequency

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	recency	-.061[a]	-1.142	.254	-.066	.999
	DSI_recency	-.113[a]	-1.366	.173	-.078	.415
2	DSI_recency	-.299[b]	-.981	.328	-.056	.031

a. Predictors in the Model: (Constant), DSI summated scale

b. Predictors in the Model: (Constant), DSI summated scale, recency

c. Dependent Variable: purch_frequency

B4. Recency and GSI Regression: Purchase Frequency

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	GSI summated scale[a]	.	Enter
2	recency[a]	.	Enter
3	GSI_recency[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: purch_frequency

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.316[a]	.100	.097	1.32286	.100	33.479	1	302	.000
2	.317[b]	.100	.094	1.32476	.000	.133	1	301	.716
3	.325[c]	.106	.097	1.32300	.005	1.801	1	300	.181

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, recency

c. Predictors: (Constant), GSI summated scale, recency, GSI_recency

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	58.586	1	58.586	33.479	.000[a]
	Residual	528.486	302	1.750		
	Total	587.072	303			
2	Regression	58.819	2	29.409	16.758	.000[b]
	Residual	528.253	301	1.755		

	Total	587.072	303			
3	Regression	61.971	3	20.657	11.802	.000[c]
	Residual	525.101	300	1.750		
	Total	587.072	303			

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, recency

c. Predictors: (Constant), GSI summated scale, recency, GSI_recency

d. Dependent Variable: purch_frequency

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.610	.289		-5.570	.000
	GSI summated scale	.041	.007	.316	5.786	.000
2	(Constant)	-1.474	.473		-3.114	.002
	GSI summated scale	.041	.007	.314	5.729	.000
	recency	-.011	.031	-.020	-.364	.716
3	(Constant)	-3.113	1.309		-2.377	.018
	GSI summated scale	.083	.032	.640	2.571	.011
	recency	.134	.113	.236	1.189	.235
	GSI_recency	-.004	.003	-.405	-1.342	.181

a. Dependent Variable: purch_frequency

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	recency	-.020[a]	-.364	.716	-.021	.993
	GSI_recency	-.060[a]	-.720	.472	-.041	.430
2	GSI_recency	-.405[b]	-1.342	.181	-.077	.033

a. Predictors in the Model: (Constant), GSI summated scale

b. Predictors in the Model: (Constant), GSI summated scale, recency

c. Dependent Variable: purch_frequency

B5. Novelty and DSI Regression: Visit Frequency

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.433[a]	.188	.185	1.21839	.188	69.955	1	303	.000
2	.433[b]	.188	.182	1.22029	.000	.056	1	302	.813
3	.434[c]	.188	.180	1.22200	.000	.157	1	301	.692

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, Novelty

c. Predictors: (Constant), DSI summated scale, Novelty, DSI_novelty

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	103.846	1	103.846	69.955	.000[a]
	Residual	449.795	303	1.484		
	Total	553.641	304			
2	Regression	103.929	2	51.965	34.897	.000[b]
	Residual	449.711	302	1.489		
	Total	553.641	304			
3	Regression	104.165	3	34.722	23.252	.000[c]
	Residual	449.476	301	1.493		
	Total	553.641	304			

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, Novelty

c. Predictors: (Constant), DSI summated scale, Novelty, DSI_novelty

d. Dependent Variable: visit_frequency

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.316	.286		-8.107	.000
	DSI summated scale	.087	.010	.433	8.364	.000
2	(Constant)	-2.248	.403		-5.578	.000
	DSI summated scale	.086	.010	.432	8.307	.000
	Novelty	-.004	.016	-.012	-.237	.813
3	(Constant)	-1.845	1.094		-1.686	.093

	DSI summated scale	.071	.040	.355	1.773	.077
	Novelty	-.028	.062	-.089	-.445	.657
	DSI_novelty	.001	.002	.106	.397	.692

a. Dependent Variable: visit_frequency

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Novelty	-.012[a]	-.237	.813	-.014	.994
	DSI_novelty	-.009[a]	-.125	.901	-.007	.552
2	DSI_novelty	.106[b]	.397	.692	.023	.038

a. Predictors in the Model: (Constant), DSI summated scale

b. Predictors in the Model: (Constant), DSI summated scale, Novelty

c. Dependent Variable: visit_frequency

B6. Novelty and GSI Regression: Visit Frequency

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	GSI summated scale[a]	.	Enter
2	Novelty[a]	.	Enter
3	GSI_novelty[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: visit_frequency

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.192[a]	.037	.034	1.32842	.037	11.537	1	302	.001
2	.192[b]	.037	.031	1.33051	.000	.049	1	301	.824
3	.199[c]	.040	.030	1.33079	.003	.873	1	300	.351

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, Novelty

c. Predictors: (Constant), GSI summated scale, Novelty, GSI_novelty

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.

1	Regression	20.360	1	20.360	11.537	.001[a]
	Residual	532.936	302	1.765		
	Total	553.296	303			
2	Regression	20.447	2	10.224	5.775	.003[b]
	Residual	532.849	301	1.770		
	Total	553.296	303			
3	Regression	21.993	3	7.331	4.140	.007[c]
	Residual	531.303	300	1.771		
	Total	553.296	303			

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, Novelty

c. Predictors: (Constant), GSI summated scale, Novelty, GSI_novelty

d. Dependent Variable: visit_frequency

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.947	.290		-3.267	.001
	GSI summated scale	.024	.007	.192	3.397	.001
2	(Constant)	-.871	.448		-1.946	.053
	GSI summated scale	.024	.007	.190	3.298	.001
	Novelty	-.004	.018	-.013	-.222	.824
3	(Constant)	.106	1.137		.093	.926
	GSI summated scale	.000	.027	-.003	-.012	.990
	Novelty	-.063	.066	-.201	-.959	.338
	GSI_novelty	.001	.002	.250	.934	.351

a. Dependent Variable: visit_frequency

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Novelty	-.013[a]	-.222	.824	-.013	.968
	GSI_novelty	.003[a]	.042	.966	.002	.597
2	GSI_novelty	.250[b]	.934	.351	.054	.045

a. Predictors in the Model: (Constant), GSI summated scale

b. Predictors in the Model: (Constant), GSI summated scale, Novelty

c. Dependent Variable: visit_frequency

B7. Recency and DSI Regresssion: Visit Frequency

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	DSI summated scale[a]	.	Enter
2	recency[a]	.	Enter
3	DSI_recency[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: visit_frequency

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.433[a]	.188	.185	1.21839	.188	69.955	1	303	.000
2	.436[b]	.190	.185	1.21860	.002	.896	1	302	.345
3	.436[c]	.190	.182	1.22037	.000	.123	1	301	.726

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, recency

c. Predictors: (Constant), DSI summated scale, recency, DSI_recency

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	103.846	1	103.846	69.955	.000[a]
	Residual	449.795	303	1.484		
	Total	553.641	304			
2	Regression	105.176	2	52.588	35.413	.000[b]
	Residual	448.465	302	1.485		
	Total	553.641	304			
3	Regression	105.360	3	35.120	23.581	.000[c]
	Residual	448.281	301	1.489		
	Total	553.641	304			

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, recency

c. Predictors: (Constant), DSI summated scale, recency, DSI_recency

d. Dependent Variable: visit_frequency

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.316	.286		-8.107	.000
	DSI summated scale	.087	.010	.433	8.364	.000
2	(Constant)	-2.019	.424		-4.762	.000
	DSI summated scale	.087	.010	.435	8.390	.000
	recency	-.027	.029	-.049	-.947	.345
3	(Constant)	-2.417	1.209		-1.998	.047
	DSI summated scale	.102	.045	.512	2.266	.024
	recency	.009	.106	.016	.081	.935
	DSI_recency	-.001	.004	-.104	-.351	.726

a. Dependent Variable: visit_frequency

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	recency	-.049[a]	-.947	.345	-.054	.999
	DSI_recency	-.081[a]	-1.007	.315	-.058	.417
2	DSI_recency	-.104[b]	-.351	.726	-.020	.031

a. Predictors in the Model: (Constant), DSI summated scale

b. Predictors in the Model: (Constant), DSI summated scale, recency

c. Dependent Variable: visit_frequency

B8. Recency and GSI Regression: Visit Frequency

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	GSI summated scale[a]	.	Enter
2	recency[a]	.	Enter
3	GSI_recency[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: visit_frequency

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.192[a]	.037	.034	1.32842	.037	11.537	1	302	.001
2	.193[b]	.037	.031	1.33040	.000	.098	1	301	.754
3	.193[c]	.037	.028	1.33254	.000	.035	1	300	.852

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, recency

c. Predictors: (Constant), GSI summated scale, recency, GSI_recency

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.360	1	20.360	11.537	.001[a]
	Residual	532.936	302	1.765		
	Total	553.296	303			
2	Regression	20.534	2	10.267	5.801	.003[b]
	Residual	532.762	301	1.770		
	Total	553.296	303			
3	Regression	20.596	3	6.865	3.866	.010[c]
	Residual	532.700	300	1.776		
	Total	553.296	303			

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, recency

c. Predictors: (Constant), GSI summated scale, recency, GSI_recency

d. Dependent Variable: visit_frequency

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.947	.290		-3.267	.001
	GSI summated scale	.024	.007	.192	3.397	.001
2	(Constant)	-.829	.475		-1.745	.082
	GSI summated scale	.024	.007	.190	3.355	.001
	recency	-.010	.031	-.018	-.314	.754
3	(Constant)	-1.059	1.319		-.803	.422
	GSI summated scale	.030	.033	.238	.919	.359
	recency	.011	.114	.019	.093	.926
	GSI_recency	.000	.003	-.059	-.187	.852

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.947	.290		-3.267	.001
	GSI summated scale	.024	.007	.192	3.397	.001
2	(Constant)	-.829	.475		-1.745	.082
	GSI summated scale	.024	.007	.190	3.355	.001
	recency	-.010	.031	-.018	-.314	.754
3	(Constant)	-1.059	1.319		-.803	.422
	GSI summated scale	.030	.033	.238	.919	.359
	recency	.011	.114	.019	.093	.926
	GSI_recency	.000	.003	-.059	-.187	.852

a. Dependent Variable: visit_frequency

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	recency	-.018[a]	-.314	.754	-.018	.993
	GSI_recency	-.030[a]	-.353	.724	-.020	.430
2	GSI_recency	-.059[b]	-.187	.852	-.011	.033

a. Predictors in the Model: (Constant), GSI summated scale

b. Predictors in the Model: (Constant), GSI summated scale, recency

c. Dependent Variable: visit_frequency

B9. Novelty and DSI Regression: Purchase Range

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	DSI summated scale[a]	.	Enter
2	Novelty[a]	.	Enter
3	DSI_novelty[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Range_purch

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change

1	.339[a]	.115	.112	2.53765	.115	39.556	1	304	.000
2	.340[b]	.115	.109	2.54163	.000	.049	1	303	.825
3	.342[c]	.117	.108	2.54387	.001	.465	1	302	.496

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, Novelty

c. Predictors: (Constant), DSI summated scale, Novelty, DSI_novelty

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	254.724	1	254.724	39.556	.000[a]
	Residual	1957.658	304	6.440		
	Total	2212.382	305			
2	Regression	255.041	2	127.521	19.740	.000[b]
	Residual	1957.341	303	6.460		
	Total	2212.382	305			
3	Regression	258.052	3	86.017	13.292	.000[c]
	Residual	1954.330	302	6.471		
	Total	2212.382	305			

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, Novelty

c. Predictors: (Constant), DSI summated scale, Novelty, DSI_novelty

d. Dependent Variable: Range_purch

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.233	.594		5.447	.000
	DSI summated scale	.135	.022	.339	6.289	.000
2	(Constant)	3.102	.839		3.696	.000
	DSI summated scale	.136	.022	.340	6.276	.000
	Novelty	.007	.034	.012	.221	.825
3	(Constant)	4.539	2.269		2.001	.046
	DSI summated scale	.081	.083	.203	.974	.331
	Novelty	-.077	.129	-.124	-.600	.549
	DSI_novelty	.003	.005	.189	.682	.496

a. Dependent Variable: Range_purch

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics: Tolerance
1	Novelty	.012[a]	.221	.825	.013	.993
	DSI_novelty	.028[a]	.393	.695	.023	.556
2	DSI_novelty	.189[b]	.682	.496	.039	.038

a. Predictors in the Model: (Constant), DSI summated scale

b. Predictors in the Model: (Constant), DSI summated scale, Novelty

c. Dependent Variable: Range_purch

B10. Novelty and GSI Regression: Purchase Range

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	GSI summated scale[a]	.	Enter
2	Novelty[a]	.	Enter
3	GSI_novelty[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Range_purch

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics: R Square Change	F Change	df1	df2	Sig. F Change
1	.264[a]	.070	.067	2.60612	.070	22.736	1	303	.000
2	.266[b]	.071	.065	2.60917	.001	.294	1	302	.588
3	.279[c]	.078	.068	2.60374	.007	2.260	1	301	.134

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, Novelty

c. Predictors: (Constant), GSI summated scale, Novelty, GSI_novelty

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	154.419	1	154.419	22.736	.000[a]
	Residual	2057.942	303	6.792		
	Total	2212.361	304			
2	Regression	156.419	2	78.209	11.488	.000[b]

	Residual	2055.942	302	6.808		
	Total	2212.361	304			
3	Regression	171.738	3	57.246	8.444	.000[c]
	Residual	2040.623	301	6.779		
	Total	2212.361	304			

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, Novelty

c. Predictors: (Constant), GSI summated scale, Novelty, GSI_novelty

d. Dependent Variable: Range_purch

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.236	.569		7.448	.000
	GSI summated scale	.067	.014	.264	4.768	.000
2	(Constant)	3.877	.874		4.437	.000
	GSI summated scale	.068	.014	.269	4.784	.000
	Novelty	.019	.035	.031	.542	.588
3	(Constant)	6.954	2.225		3.125	.002
	GSI summated scale	-.008	.053	-.033	-.157	.875
	Novelty	-.167	.128	-.268	-1.299	.195
	GSI_novelty	.005	.003	.395	1.503	.134

a. Dependent Variable: Range_purch

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Novelty	.031[a]	.542	.588	.031	.970
	GSI_novelty	.067[a]	.930	.353	.053	.599
2	GSI_novelty	.395[b]	1.503	.134	.086	.044

a. Predictors in the Model: (Constant), GSI summated scale

b. Predictors in the Model: (Constant), GSI summated scale, Novelty

c. Dependent Variable: Range_purch

B11. Recency and DSI Regresssion: Purchase Range

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	DSI summated scale[a]	.	Enter
2	recency[a]	.	Enter
3	DSI_recency[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Range_purch

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.339[a]	.115	.112	2.53765	.115	39.556	1	304	.000
2	.344[b]	.118	.113	2.53714	.003	1.122	1	303	.290
3	.345[c]	.119	.110	2.54044	.001	.215	1	302	.643

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, recency

c. Predictors: (Constant), DSI summated scale, recency, DSI_recency

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	254.724	1	254.724	39.556	.000[a]
	Residual	1957.658	304	6.440		
	Total	2212.382	305			
2	Regression	261.945	2	130.972	20.347	.000[b]
	Residual	1950.438	303	6.437		
	Total	2212.382	305			
3	Regression	263.331	3	87.777	13.601	.000[c]
	Residual	1949.052	302	6.454		
	Total	2212.382	305			

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, recency

c. Predictors: (Constant), DSI summated scale, recency, DSI_recency

d. Dependent Variable: Range_purch

Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

		B	Std. Error	Beta		
1	(Constant)	3.233	.594		5.447	.000
	DSI summated scale	.135	.022	.339	6.289	.000
2	(Constant)	3.922	.881		4.453	.000
	DSI summated scale	.136	.022	.341	6.324	.000
	recency	-.063	.060	-.057	-1.059	.290
3	(Constant)	2.831	2.515		1.125	.261
	DSI summated scale	.179	.094	.448	1.900	.058
	recency	.035	.220	.032	.159	.874
	DSI_recency	-.004	.008	-.143	-.463	.643

a. Dependent Variable: Range_purch

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	recency	-.057[a]	-1.059	.290	-.061	.999
	DSI_recency	-.096[a]	-1.146	.253	-.066	.415
2	DSI_recency	-.143[b]	-.463	.643	-.027	.031

a. Predictors in the Model: (Constant), DSI summated scale

b. Predictors in the Model: (Constant), DSI summated scale, recency

c. Dependent Variable: Range_purch

B12. Recency and GSI Regression: Purchase Range

Model	Variables Entered	Variables Removed	Method
1	GSI summated scale[a]	.	Enter
2	recency[a]	.	Enter
3	GSI_recency[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Range_purch

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.264[a]	.070	.067	2.60612	.070	22.736	1	303	.000
2	.265[b]	.070	.064	2.60966	.001	.180	1	302	.671
3	.267[c]	.071	.062	2.61302	.001	.223	1	301	.637

a. Predictors: (Constant), GSI summated scale

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.264[a]	.070	.067	2.60612	.070	22.736	1	303	.000
2	.265[b]	.070	.064	2.60966	.001	.180	1	302	.671
3	.267[c]	.071	.062	2.61302	.001	.223	1	301	.637

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, recency

c. Predictors: (Constant), GSI summated scale, recency, GSI_recency

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	154.419	1	154.419	22.736	.000[a]
	Residual	2057.942	303	6.792		
	Total	2212.361	304			
2	Regression	155.647	2	77.823	11.427	.000[b]
	Residual	2056.714	302	6.810		
	Total	2212.361	304			
3	Regression	157.170	3	52.390	7.673	.000[c]
	Residual	2055.191	301	6.828		
	Total	2212.361	304			

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, recency

c. Predictors: (Constant), GSI summated scale, recency, GSI_recency

d. Dependent Variable: Range_purch

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.236	.569		7.448	.000
	GSI summated scale	.067	.014	.264	4.768	.000
2	(Constant)	4.549	.932		4.880	.000
	GSI summated scale	.066	.014	.262	4.711	.000
	recency	-.026	.061	-.024	-.425	.671
3	(Constant)	5.688	2.586		2.200	.029
	GSI summated scale	.037	.064	.145	.573	.567
	recency	-.127	.223	-.115	-.571	.568

GSI_recency	.003	.006	.145	.472	.637

a. Dependent Variable: Range_purch

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	recency	-.024[a]	-.425	.671	-.024	.993
	GSI_recency	-.023[a]	-.277	.782	-.016	.430
2	GSI_recency	.145[b]	.472	.637	.027	.033

a. Predictors in the Model: (Constant), GSI summated scale

b. Predictors in the Model: (Constant), GSI summated scale, recency

c. Dependent Variable: Range_purch

B13. Novelty and DSI Regression: Visit Range

Variables Entered/Removed[b]

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	DSI summated scale[a]	.	Enter
2	Novelty[a]	.	Enter
3	DSI_novelty[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Range_visit

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.198[a]	.039	.036	2.42120	.039	12.407	1	304	.000
2	.199[b]	.040	.033	2.42462	.000	.143	1	303	.705
3	.201[c]	.041	.031	2.42756	.001	.266	1	302	.606

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, Novelty

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.198[a]	.039	.036	2.42120	.039	12.407	1	304	.000
2	.199[b]	.040	.033	2.42462	.000	.143	1	303	.705
3	.201[c]	.041	.031	2.42756	.001	.266	1	302	.606

a. Predictors: (Constant), DSI summated scale

c. Predictors: (Constant), DSI summated scale, Novelty, DSI_novelty

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	72.731	1	72.731	12.407	.000[a]
	Residual	1782.109	304	5.862		
	Total	1854.840	305			
2	Regression	73.573	2	36.786	6.257	.002[b]
	Residual	1781.267	303	5.879		
	Total	1854.840	305			
3	Regression	75.142	3	25.047	4.250	.006[c]
	Residual	1779.698	302	5.893		
	Total	1854.840	305			

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, Novelty

c. Predictors: (Constant), DSI summated scale, Novelty, DSI_novelty

d. Dependent Variable: Range_visit

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.089	.566		12.517	.000
	DSI summated scale	.072	.021	.198	3.522	.000
2	(Constant)	7.302	.801		9.121	.000
	DSI summated scale	.072	.021	.196	3.474	.001
	Novelty	-.012	.032	-.021	-.378	.705
3	(Constant)	8.340	2.165		3.852	.000
	DSI summated scale	.032	.079	.088	.405	.686
	Novelty	-.073	.123	-.129	-.597	.551
	DSI_novelty	.002	.005	.149	.516	.606

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.089	.566		12.517	.000
	DSI summated scale	.072	.021	.198	3.522	.000
2	(Constant)	7.302	.801		9.121	.000
	DSI summated scale	.072	.021	.196	3.474	.001
	Novelty	-.012	.032	-.021	-.378	.705
3	(Constant)	8.340	2.165		3.852	.000
	DSI summated scale	.032	.079	.088	.405	.686
	Novelty	-.073	.123	-.129	-.597	.551
	DSI_novelty	.002	.005	.149	.516	.606

a. Dependent Variable: Range_visit

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Novelty	-.021[a]	-.378	.705	-.022	.993
	DSI_novelty	-.017[a]	-.230	.818	-.013	.556
2	DSI_novelty	.149[b]	.516	.606	.030	.038

a. Predictors in the Model: (Constant), DSI summated scale

b. Predictors in the Model: (Constant), DSI summated scale, Novelty

c. Dependent Variable: Range_visit

B14. Novelty and GSI Regression: Visit Range

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	GSI summated scale[a]	.	Enter
2	Novelty[a]	.	Enter
3	GSI_novelty[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Range_visit

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change

1	.105[a]	.011	.008	2.45998	.011	3.351	1	303	.068
2	.106[b]	.011	.005	2.46359	.000	.113	1	302	.737
3	.139[c]	.019	.010	2.45755	.008	2.486	1	301	.116

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, Novelty

c. Predictors: (Constant), GSI summated scale, Novelty, GSI_novelty

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.277	1	20.277	3.351	.068[a]
	Residual	1833.605	303	6.052		
	Total	1853.882	304			
2	Regression	20.963	2	10.482	1.727	.180[b]
	Residual	1832.919	302	6.069		
	Total	1853.882	304			
3	Regression	35.976	3	11.992	1.986	.116[c]
	Residual	1817.905	301	6.040		
	Total	1853.882	304			

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, Novelty

c. Predictors: (Constant), GSI summated scale, Novelty, GSI_novelty

d. Dependent Variable: Range_visit

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.071	.537		15.035	.000
	GSI summated scale	.024	.013	.105	1.831	.068
2	(Constant)	8.282	.825		10.040	.000
	GSI summated scale	.023	.013	.101	1.742	.083
	Novelty	-.011	.033	-.020	-.336	.737
3	(Constant)	11.329	2.100		5.393	.000
	GSI summated scale	-.052	.050	-.226	-1.049	.295
	Novelty	-.195	.121	-.343	-1.609	.109
	GSI_novelty	.005	.003	.428	1.577	.116

a. Dependent Variable: Range_visit

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics: Tolerance
1	Novelty	-.020[a]	-.336	.737	-.019	.970
	GSI_novelty	.008[a]	.104	.917	.006	.599
2	GSI_novelty	.428[b]	1.577	.116	.091	.044

a. Predictors in the Model: (Constant), GSI summated scale

b. Predictors in the Model: (Constant), GSI summated scale, Novelty

c. Dependent Variable: Range_visit

B15. Recency and DSI Regresssion: Visit Range

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	DSI summated scale[a]	.	Enter
2	recency[a]	.	Enter
3	DSI_recency[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Range_visit

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics: R Square Change	F Change	df1	df2	Sig. F Change
1	.198[a]	.039	.036	2.42120	.039	12.407	1	304	.000
2	.224[b]	.050	.044	2.41121	.011	3.525	1	303	.061
3	.228[c]	.052	.043	2.41286	.002	.585	1	302	.445

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, recency

c. Predictors: (Constant), DSI summated scale, recency, DSI_recency

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	72.731	1	72.731	12.407	.000[a]
	Residual	1782.109	304	5.862		
	Total	1854.840	305			
2	Regression	93.223	2	46.611	8.017	.000[b]
	Residual	1761.617	303	5.814		

	Total	1854.840	305			
3	Regression	96.627	3	32.209	5.532	.001[c]
	Residual	1758.213	302	5.822		
	Total	1854.840	305			

a. Predictors: (Constant), DSI summated scale

b. Predictors: (Constant), DSI summated scale, recency

c. Predictors: (Constant), DSI summated scale, recency, DSI_recency

d. Dependent Variable: Range_visit

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.089	.566		12.517	.000
	DSI summated scale	.072	.021	.198	3.522	.000
2	(Constant)	8.250	.837		9.856	.000
	DSI summated scale	.074	.020	.202	3.602	.000
	recency	-.106	.057	-.105	-1.877	.061
3	(Constant)	6.539	2.389		2.737	.007
	DSI summated scale	.140	.089	.384	1.570	.117
	recency	.047	.209	.047	.227	.821
	DSI_recency	-.006	.008	-.245	-.765	.445

a. Dependent Variable: Range_visit

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	recency	-.105[a]	-1.877	.061	-.107	.999
	DSI_recency	-.175[a]	-2.016	.045	-.115	.415
2	DSI_recency	-.245[b]	-.765	.445	-.044	.031

a. Predictors in the Model: (Constant), DSI summated scale

b. Predictors in the Model: (Constant), DSI summated scale, recency

c. Dependent Variable: Range_visit

B16. Recency and GSI Regression: Visit Range

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	GSI summated scale[a]	.	Enter
2	recency[a]	.	Enter
3	GSI_recency[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Range_visit

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.105[a]	.011	.008	2.45998	.011	3.351	1	303	.068
2	.138[b]	.019	.013	2.45378	.008	2.534	1	302	.112
3	.147[c]	.022	.012	2.45466	.003	.782	1	301	.377

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, recency

c. Predictors: (Constant), GSI summated scale, recency, GSI_recency

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.277	1	20.277	3.351	.068[a]
	Residual	1833.605	303	6.052		
	Total	1853.882	304			
2	Regression	35.534	2	17.767	2.951	.054[b]
	Residual	1818.348	302	6.021		
	Total	1853.882	304			
3	Regression	40.246	3	13.415	2.226	.085[c]
	Residual	1813.636	301	6.025		
	Total	1853.882	304			

a. Predictors: (Constant), GSI summated scale

b. Predictors: (Constant), GSI summated scale, recency

c. Predictors: (Constant), GSI summated scale, recency, GSI_recency

d. Dependent Variable: Range_visit

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.071	.537		15.035	.000
	GSI summated scale	.024	.013	.105	1.831	.068
2	(Constant)	9.176	.876		10.469	.000
	GSI summated scale	.022	.013	.097	1.699	.090
	recency	-.092	.058	-.091	-1.592	.112
3	(Constant)	11.179	2.429		4.602	.000
	GSI summated scale	-.029	.060	-.127	-.490	.625
	recency	-.270	.209	-.267	-1.289	.198
	GSI_recency	.005	.005	.278	.884	.377

a. Dependent Variable: Range_visit

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	recency	-.091[a]	-1.592	.112	-.091	.993
	GSI_recency	-.112[a]	-1.284	.200	-.074	.430
2	GSI_recency	.278[b]	.884	.377	.051	.033

a. Predictors in the Model: (Constant), GSI summated scale

b. Predictors in the Model: (Constant), GSI summated scale, recency

c. Dependent Variable: Range_visit

APPENDIX C

Appendix C: Newness and Innovativeness Scale Interaction Residual Analysis

C1. Novelty and DSI Residual ANOVA

ANOVA

DSI_RES_ABS

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.721	3	4.240	.325	.808
Within Groups	3931.778	301	13.062		
Total	3944.499	304			

Post Hoc Tests

Multiple Comparisons

DSI_RES_ABS
LSD

(I) Novelty_ SEL	(J) Novelty_ SEL	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.04995	.64404	.938	-1.3173	1.2174
	3	-.30984	.59651	.604	-1.4837	.8640
	4	-.50883	.59787	.395	-1.6854	.6677
2	1	.04995	.64404	.938	-1.2174	1.3173
	3	-.25989	.59096	.660	-1.4228	.9031
	4	-.45888	.59234	.439	-1.6245	.7068
3	1	.30984	.59651	.604	-.8640	1.4837
	2	.25989	.59096	.660	-.9031	1.4228
	4	-.19899	.54028	.713	-1.2622	.8642
4	1	.50883	.59787	.395	-.6677	1.6854
	2	.45888	.59234	.439	-.7068	1.6245
	3	.19899	.54028	.713	-.8642	1.2622

C2. Novelty and GSI Residual ANOVA …..……..……000

ANOVA

GSI_RES_ABS

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.591	3	3.530	.121	.948
Within Groups	8766.567	301	29.125		
Total	8777.159	304			

Post Hoc Tests

Multiple Comparisons

GSI_RES_ABS
LSD

(I) Novelty_SEL	(J) Novelty_SEL	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	.56791	.96168	.555	-1.3246	2.4604
	3	.20250	.89071	.820	-1.5503	1.9553
	4	.22550	.89275	.801	-1.5313	1.9823
2	1	-.56791	.96168	.555	-2.4604	1.3246
	3	-.36541	.88243	.679	-2.1019	1.3711
	4	-.34241	.88449	.699	-2.0830	1.3982
3	1	-.20250	.89071	.820	-1.9553	1.5503
	2	.36541	.88243	.679	-1.3711	2.1019
	4	.02300	.80676	.977	-1.5646	1.6106
4	1	-.22550	.89275	.801	-1.9823	1.5313
	2	.34241	.88449	.699	-1.3982	2.0830
	3	-.02300	.80676	.977	-1.6106	1.5646

C3. Recency and DSI Residual ANOVA

ANOVA

DSI_RES_ABS

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	40.740	3	13.580	1.047	.372
Within Groups	3903.759	301	12.969		
Total	3944.499	304			

Post Hoc Tests

Multiple Comparisons

DSI_RES_ABS
LSD

(I) Recency_SEL	(J) Recency_SEL	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.01947	.59463	.974	-1.1896	1.1507

	3	.67117	.63962	.295	-.5875	1.9299
	4	-.36387	.60284	.547	-1.5502	.8224
2	1	.01947	.59463	.974	-1.1507	1.1896
	3	.69064	.58093	.235	-.4526	1.8338
	4	-.34440	.54016	.524	-1.4074	.7186
3	1	-.67117	.63962	.295	-1.9299	.5875
	2	-.69064	.58093	.235	-1.8338	.4526
	4	-1.03504	.58933	.080	-2.1948	.1247
4	1	.36387	.60284	.547	-.8224	1.5502
	2	.34440	.54016	.524	-.7186	1.4074
	3	1.03504	.58933	.080	-.1247	2.1948

C4. Recency and GSI Residual ANOVA

ANOVA

GSI_RES_ABS

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	80.165	3	26.722	.925	.429
Within Groups	8696.994	301	28.894		
Total	8777.159	304			

Post Hoc Tests

Multiple Comparisons

GSI_RES_ABS
LSD

(I) Recency_SEL	(J) Recency_SEL	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.19855	.88754	.823	-1.9451	1.5480
	3	.52894	.95470	.580	-1.3498	2.4077
	4	-.90427	.89980	.316	-2.6750	.8664
2	1	.19855	.88754	.823	-1.5480	1.9451
	3	.72749	.86709	.402	-.9788	2.4338
	4	-.70572	.80625	.382	-2.2923	.8809
3	1	-.52894	.95470	.580	-2.4077	1.3498
	2	-.72749	.86709	.402	-2.4338	.9788
	4	-1.43321	.87963	.104	-3.1642	.2978
4	1	.90427	.89980	.316	-.8664	2.6750
	2	.70572	.80625	.382	-.8809	2.2923
	3	1.43321	.87963	.104	-.2978	3.1642

APPENDIX D

Appendix D: Newness and Online Purchase Frequency

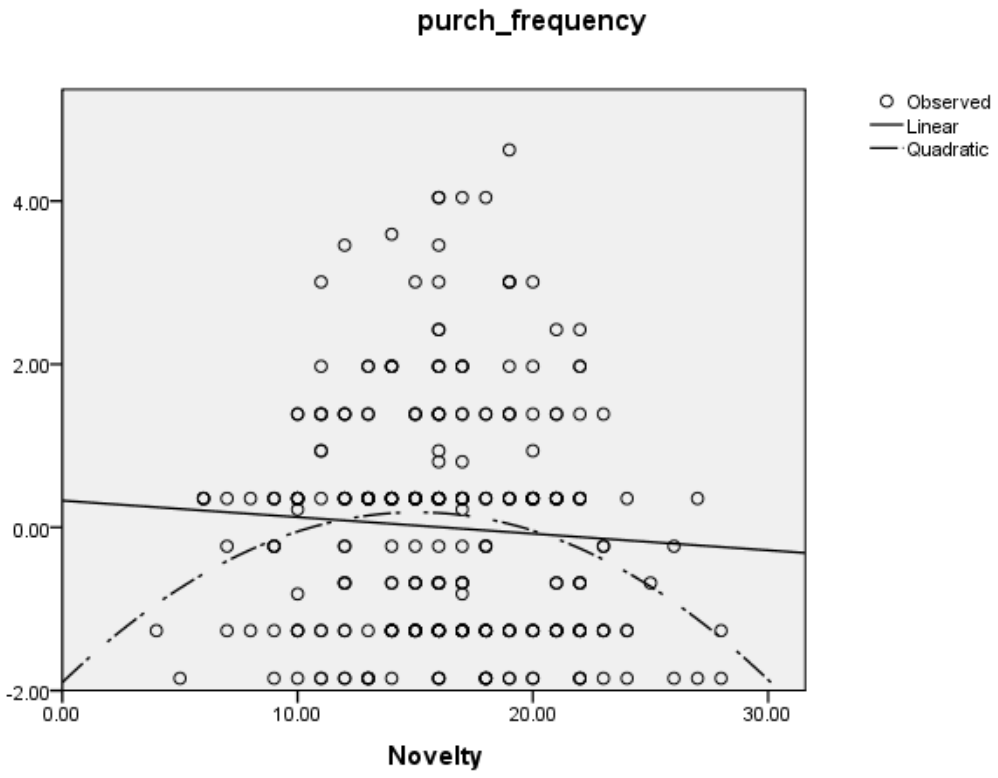
D1. Quadratic Regression for Novelty and Purchase Frequency

Model Summary and Parameter Estimates

Dependent Variable:purch_frequency

	Model Summary					Parameter Estimates		
Equation	R Square	F	df1	df2	Sig.	Constant	b1	b2
Linear	.004	1.224	1	303	.269	.328	-.020	
Quadratic	.034	5.277	2	302	.006	-1.902	.277	-.009

The independent variable is Novelty.



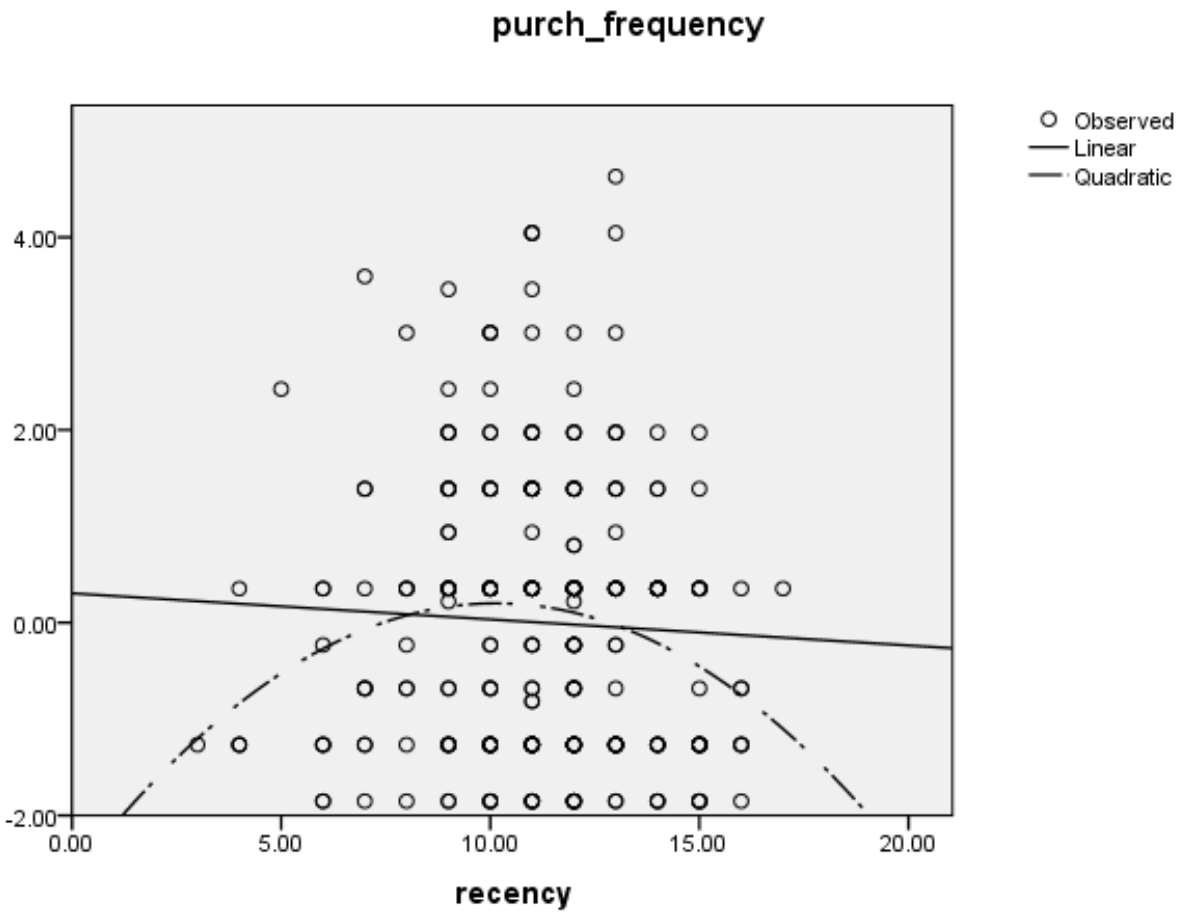
D2. Quadratic Regression for Recency and Purchase Frequency

Model Summary and Parameter Estimates

Dependent Variable:purch_frequency

Equation	Model Summary					Parameter Estimates		
	R Square	F	df1	df2	Sig.	Constant	b1	b2
Linear	.002	.686	1	303	.408	.305	-.027	
Quadratic	.035	5.418	2	302	.005	-2.633	.560	-.028

The independent variable is recency.



APPENDIX E

Appendix E: Innovativeness Scales Residual Analysis

E1. Zero-Order Correlations of Residuals

Correlations

		GSI summated scale	DSI summated scale	Intention	DSI_RES	GSI_RES
GSI summated scale	Pearson Correlation	1.000	.485**	.194**	.000	.875**
	Sig. (2-tailed)		.000	.001	1.000	.000
	N	305.000	305	305	305	305
DSI summated scale	Pearson Correlation	.485**	1.000	.497**	.875**	.000
	Sig. (2-tailed)	.000		.000	.000	1.000
	N	305	306.000	306	305	305
Intention	Pearson Correlation	.194**	.497**	1.000	.461**	-.054
	Sig. (2-tailed)	.001	.000		.000	.350
	N	305	306	306.000	305	305
DSI_RES	Pearson Correlation	.000	.875**	.461**	1.000	-.485**
	Sig. (2-tailed)	1.000	.000	.000		.000
	N	305	305	305	305.000	305
GSI_RES	Pearson Correlation	.875**	.000	-.054	-.485**	1.000
	Sig. (2-tailed)	.000	1.000	.350	.000	
	N	305	305	305	305	305.000

**. Correlation is significant at the 0.01 level (2-tailed).

E2. DSI Residual and Purchase Frequency Regression

DSI_RES/ Intention and Purchase Frequency

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.960	.327		-5.994	.000
	Intention	.089	.015	.366	6.162	.000
	DSI_RES	.019	.014	.080	1.342	.181

a. Dependent Variable: purch_frequency

E3. GSI Residual and Purchase Frequency Regression

GSI_RES/ Intention and Purchase Frequency

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.212	.288		-7.689	.000
	Intention	.101	.013	.412	7.954	.000
	GSI_RES	.027	.008	.179	3.452	.001

a. Dependent Variable: purch_frequency

E4. DSI and GSI Residual and OSP Variable Regression Table

Scales	**R2**	**F value/sig/R2change**	**DSI_PRE Beta/Sig**	**Intention Beta/Sig**
Purchase Frequency	.100	F =33.479, p=.000	.316***	
Block 2 (w/ Intent)	.221	F =42.683, p =.000/.221	.248***	.355***
Visit Frequency	.037	F =11.537, p=.001	.192***	
Block 2 (w/ Intent)	.259	F =52.713, p =.000/.223	.099	.481***
Purchase Range	.070	F=22.736, p .000	.264***	
Block 2 (w/ Intent)	.134	F=23.454, p = .000/.065	.214***	.259***
Visit Range	.011	F=3.351, p = .068	.105	
Block 2 (w/ Intent)	,087	F =14.406, p = .000/.076	.050	.281***
Scales	**R2**	**F value/sig/R2change**	**DSI_RES Beta/Sig**	**Intention Beta/Sig**
Purchase Frequency	.062	F=19.861, p=.000	.248***	
Block 2 (w/ Intent)	.167	F=30.134, p=.000/.105	.080	.366***
Visit Frequency	.151	F=53.823, p=.000	.389***	
Block 2 (w/ Intent)	.281	F=58.939, p=.000/.130	.200***	.407***
Purchase Range	.058	F=18.807, p=.000	.242***	
Block 2 (w/ Intent)	.104	F=17.511, p=.000	.131*	.240***
Visit Range	.029	F=8.926, p=.003	.169**	
Block 2 (w/ Intent)	.086	F=14.252, p=.000/.058	.045	.270***
Scales	**R2**	**F value/sig/R2change**	**GSI_PRE Beta/Sig**	**Intention Beta/Sig**
Purchase Frequency	.138	F=48.315, p=.000	.371***	
Block 2 (w/ Intent)	.202	F=38.142, p=.000/ .064	.226***	.292***
Visit Frequency	.188	F=69.995, p= .000	.433***	
Block 2 (w/	.295	F=63.263, p=.000/.108	.244***	.379***

Intent)				
Purchase Range	.115	F= 39.556, p=.000	.339***	
Block 2 (w/ Intent)	.138	F=24.255p=.000/ .023	.253***	.174**
Visit Range	.039	F=12.407, p=.000	.198***	
Block 2 (w/ Intent)	.087	F=14.521, p=.000 .048	.072	.253***
Scales	**R2**	**F value/sig/R2change**	**GSI_RES Beta/Sig**	**Intention Beta/Sig**
Purchase Frequency	.024	F=7.525 p=.006	.156**	
Block 2 (w/ Intent)	.194	F=31.168 p=.000/.169	.179***	.412***
Visit Frequency	.000	F=.122 p=.727	-.020	
Block 2 (w/ Intent)	.250	F=50.178 p=.000/.250	.007	.500***
Purchase Range	.013	F=3.988 p=.047	.114*	
Block 2 (w/ Intent)	.107	F=18.159 p=.000/.094	.130*	.308***
Visit Range	.000	F=.027 p=.868	.010	
Block 2 (w/ Intent)	.085	F=14.083 p=.000/.085	.025	.292***