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Examining teen girls' fashion behavior in the virtual and the real world: an exploratory study

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EXAMINING TEEN GIRLS' FASHION BEHAVIOR IN THE VIRTUAL AND THE REAL
WORLD: AN EXPLORATORY STUDY

A Thesis
Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Master of Science

In
The School of Human Ecology

By
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ABSTRACT

Over the past few years, changes in technology, especially the emergence of virtual worlds, have impacted the landscape of doing business. Many industries, such as retailing and fashion industries have recognized the e-commerce potentials and have engaged in setting up strategic ventures in the virtual worlds to develop products and/or services that are geared towards meeting consumer needs. Previous research has examined consumers' adoption of innovative products, but there is no known study that has examined consumers' adoption of virtual fashion. Therefore, the purpose of the current study is to shed some light on understanding consumer adoption of virtual fashion. Specifically, assessed the effects of external variables, (i.e., fashion innovativeness and peer pressure), on need gratification, attitudes, and adoption of virtual fashion among teen girl consumers who have grown up with advanced technology and sophisticated fashion changes.

Data was collected from a convenience sample of teen girls between the ages of 12 to 19 via an online survey. The final sample consisted of 177 teen girls. A series of multiple regressions were employed to test all hypotheses. Results revealed that adoption of virtual fashion is significantly impacted by teen girl consumers' gratification of needs, attitude towards the virtual fashion world, and fashion innovativeness. However, adoption of virtual fashion was not significantly impacted by peer pressure. The results add to existing literature related to consumers' adoption of an innovation by the integration of communications, sociological and innovation adoption theories. Future research may focus on the difference between urban and suburban teens.

CHAPTER 1. INTRODUCTION

1.1 Statement of the Problem

The use of Internet among teens continues to rise as technology keeps advancing. Teens find themselves using the Internet as a daily practice to an extent that it becomes a part of their life style, which promotes new sets of attitudes and spending patterns (Batat, 2008). Dramatic increase of Internet usage among teens provides numerous opportunities for marketers.

Bandura (1977) posited that by observing other individuals or media one may learn values, attitudes, and skills. In a virtual world, such as second life or stardoll.com, teens can create avatars to represent themselves and communicate with each other while observing what others are doing and wearing. Their interactions (teen to teen) could influence behavior, including fashion behaviors that could relate to their fashion behaviors in the real world; however, the connection between fashion behavior in a virtual world and their behavior in the real world has not yet been examined.

According to Rogers (1995), individuals can be grouped ranging from ‘innovators’ to ‘laggards’. Teens for a long time have been recognized as an innovative consumer group (Gutman & Mills, 1982; Horridge & Richards, 1984). The virtual world is a new concept and may provide a platform for teens to learn and practice various innovative behaviors including creating or accepting new fashion. However, no research has examined whether teens’ fashion innovativeness is related to their fashion behaviors in the virtual world.

The aim of this research is to examine what teen girls are observing, modeling and learning from the virtual fashion world and how their virtual fashion behavior is related to their fashion behavior in the real world. This study hopes to also find out whether innovativeness, and

peer pressure among teen girls are factors predicting their use of the virtual fashion worlds and to examine to what extent their needs to use the virtual fashion worlds are gratified.

Teens make an extensive consumer niche market but there is little knowledge available about their behavior as consumers (Palan, 2006). From a theoretical perspective, the rationale to carry out current research on teen girls' virtual fashion behavior is two-fold: (1) teens' behavior is complex due to the transitional life stage that theorists like Freud, Rank, Erickson, and Piaget have tried to understand (Muuss, 1968), and (2) the virtual world is relatively a new phenomenon and there remains a dearth of scholarly research on understanding teen girls' behavior in virtual worlds. Extant research on teen Internet usage indicates that communication is the central activity (Gross, 2004; Smahel & Subrahmanyam, 2007; Subrahmanyam & Greenfield, 2008; Subrahmanyam & Lin, 2007). Networking sites like MySpace, Facebook and Blogs have received the most attention in the past years. However, this is taking a shift and teens are also socializing in the virtual worlds (e.g., stardoll.com, there.com, habbo hotel, whyville and second life) using their avatars (Subrahmanyam & Lin, 2007).

Research as shown that among other groups teen girls place a lot of significance on apparel and fashion (Koester & May, 1985). Due to their interest in apparel and fashion, teen girls are visiting the virtual fashion world, which engages in giving the teens the freedom to dress their avatars using an array of styles. They can also learn from other avatars and such skills may be transferred into the real world. Therefore, this research chooses to focus more specifically on virtual fashion worlds and examine how teen girls' experiences of using a virtual fashion world impact their fashion behavior and consequently, adoption of virtual fashion.

Given the implication of teens as a consumer niche, this study seeks to fill gaps in literature. As teens explore the virtual fashion worlds, marketers are moving in quickly to meet

their needs and wants (Goodstein, 2006). The findings from the study generate implications on how fashion marketers can tap on this market niche.

From a practical standpoint, teen girls present enormous potentials for marketers. During adolescence stage, teen consumers often develop consumption patterns, which they maintain throughout their adult lives (Moschis, 1985). For instance, Hayko and Baker (2004) found that teen girls go shopping more often than adults. On average they go shopping three times a week and spend more money on clothes than other items. Teen girls are also likely to use clothing as a way to not just express their identities, but also to determine who is like them in order to form friendships (Haytko & Baker, 2004).

Prior research indicates that the current teen market represents a powerful part of the consumer market since teens have significant purchasing power. In addition, teens also to a large degree influence their parents' spending in various ways (Zollo, 1995). Hence, marketers cannot afford to overlook teen consumers. It is important that marketers understand teen customers' needs, their buying behavior, and factors influencing their buying decisions to better target them. With this information, fashion marketers can project teens' marketing activities as accurately and cost effectively as possible.

1.3 Research Questions

The questions this research seeks to answer are the following: How do teens respond to the virtual fashion world? How do peer interactions and fashion innovativeness affect teens' usage of the virtual fashion worlds? Do the experiences in the virtual fashion world have any effect on the teen girls' attitude toward virtual worlds and consequently, impact their adoption of virtual fashion that may also reflect clothing purchasing behavior in the real world? Answers to

these questions will help us understand the impact of the virtual fashion world on teen girls' fashion consumption.

1.4 Objectives

Specifically, the objectives of this study are to: (1) profile teens' use of the virtual fashion worlds; (2) examine whether fashion innovativeness and peer influence are associated with teen girls gratification of needs and their attitude towards the virtual fashion world; (3) further, examine how teen girls' gratification of needs is associated with their attitude towards the virtual fashion world; (4) examine whether teen girls' gratification of needs and their attitude towards the virtual fashion worlds impact their adoption of virtual fashion.

1.5 Definitions of Terms

The following are definitions of key terms used in this study.

Teen Girls	Young females aged 12 to 19.
Avatar	Three-dimensional model a teen uses to represent herself in the virtual world (Bailenson et al., 2005).
Virtual world	An immersive three-dimensional world that has the likeness of the real world but without its physical limitations; people in the virtual world interact as avatars with each other (Bainbridge, 2007).
Fashion	A “currently popular style of clothing, a behavior, or a manner of doing something” (Rosen, 2000).
Virtual fashion	Popular clothing styles presented in the virtual world that may or may not have a physical existence in a real retail store.
Innovativeness	The “degree to which an individual is relatively earlier than the other members of a system in adopting new ideas, product or service, and how quickly he or she does so” (Rogers, 1995).

Peer Pressure	Social influence exerted by teens on another teen to get the teenager to use the virtual fashion world.
Gratification of needs	The satisfaction of needs (information learning, socialization/interaction and entertainment) achieved by teen girls by using the virtual fashion world (James, Wotring, & Forrest, 1995).
Attitude	An overall positive or negative evaluation of a product or service, that can be generated based on learning through socialization and other cognitive processes (Jobber, 2001).
Adoption of virtual fashion	The process by which a new style presented in a virtual world is used, or purchased or recommended to others for dressing up avatars in a virtual world or consumers in the real world.

CHAPTER 2. REVIEW OF LITERATURE

2.1 Teen's Internet Usage and the Virtual World

Over ten years ago scholar Tapscott (1998) argued that computers have become an indispensable part of teens' culture. Ess (2001) and Negroponte (1995) also concurred that the Internet could make the world a 'global village'. Teens have made the Internet part of their life style; they are the first age group to come of age online (Cheng, 1999; Kzero, 2009).

Teens today are introduced to computers at an extremely early age; pursuant to this exposure they have more of an open mind than adults do when it comes to new computer applications (Kzero, 2009). Michman, Mazze, and Greco (2003) expressed that becoming an online customer is a 'rite of passage' or a ritual that many American teens experience during their teenage years. Teens Internet usage plays a major role in their relationships with their friends and families (Zollo, 1995). In addition, the Internet is a key resource for school work. Information from the web helps teens to fill in their knowledge gaps on sensitive subjects that are hard to talk to other people about. For instance, teens can find out what is cool in fashion or music through the web (Lenhart, Rainie, & Lewis, 2001). In the virtual worlds teens have the freedom to experiment with different identities to see which ones fit best (Turkle, 1997). Montgomery (2000) contends that since teens have grown up with the Internet, they do not hesitate to use the virtual worlds to explore new identities. Some teens report that the anonymity of the Internet allows them to truly be themselves (Lenhart et al., 2001). Due to their anonymity virtual worlds can offer a safe virtual space for people to experiment with multiple identities, and through these interactions, they can understand themselves and their world (Turkle, 1997).

Brad Paisley (Paisley, 2008), in his song “I Am So Much Cooler Online” outlines the benefits of having everything anonymous in the virtual worlds. Being anonymous makes teens enjoy the opportunity to break out of whatever identity they may have in the offline world. If you are overweight in real life, your avatar can be svelte. If you're shy, you can still be the most popular avatar in the world.

There are many compelling reasons to study Internet use among teens. For example, Mediamark research (2003) reported that 87% of adolescents aged between 12 years and 17 years use the Internet; this was an upward trend from a 73% usage in 2000. In the present day, this trend seems to keep moving upwards, for instance, teens regularly utilize Instant Messaging (IM), download music and attach pictures (Lenhart, Madden, & Hitlin, 2005). Today teens have greater access to technology than their predecessors. It is evident that with the increasing gadgets, such as, cell phones and computers, teenager are wired from birth (Giffey, 2006).

Virtual world is a new concept of the World Wide Web. Virtual worlds trace their history from electronic gaming and social networking, hence a combination of the two has made virtual worlds possible (Messinger, et al., 2009). The virtual worlds, also called ‘metaverse’ are immersive three-dimensional worlds in the web that look like the real world. People in these worlds interact with others concurrently through their avatars, which are graphical representations of themselves (Kaplan & Haenlein, 2009). The virtual worlds have no physical limitations. Therefore, residents can engage in interactions with each other just like in the real world, but also defy gravity by flying and teleporting. In the near future, virtual worlds may influence many aspects of our lives; how we work, learn, interact, use the Internet, conduct business, shop, and play (Messinger et al., 2009).

The future of the virtual worlds could be bright despite the cynicism about them. People express concerns such as: trust with financial information, too much sex, too complex to access and some feel that there is nothing to do there. Similarly, in the early 1990s when the web was introduced, people expressed the same concerns, but today, few people would doubt the importance of the Web. Once the best ways to communicate, advertise and market products and services are determined, the virtual worlds will be very significant to companies and individuals, just as the web is today (Papadopoulou, 2007).

The virtual world is among the latest innovations (Kelton, 2008). Rogers (1995) describes an innovative person as “one who will adopt and utilize a new product or new services before others do.” Extant research has shown that teens are not only early adopters of most new technologies, but also refined users as well (Greenfield & Subrahmanyam, 2003; Smahel & Subrahmanyam, 2007). Teens have started embracing the virtual world since they are more open to new things and ideas. The virtual worlds offer teens the divine power to create life and mold it into pretty much anything they please (Mediamark, 2004). When they use the avatar, they are free to dream and their innovative self can find release. They create their own clothing designs and styles because they have freedom to express themselves without any inhibition.

According to a report released by Packaged Facts (2007) more than half of the 34.3 million U.S. kids and teens will get into the virtual world by 2011. Teens visit the virtual worlds and are having interactions through their avatars. They socialize with one another, engaging in a variety of activities such as, taking university courses, participating in various training programs, sharing reactions to new products, and of course going shopping. During these interactions individuals are learning and modeling from one another (Bandura, 1977). Researchers can better

understand teens' socialization and self development in the real world by examining teens' social interaction in virtual worlds.

In addition, teens are considered a sought out market with a huge potential as a consumer niche. However, not enough is known about the best way to communicate with teens. Teens' socialization processes and behaviors may reflect effective approaches for them to communicate with others. Understanding their behavior in the virtual world and the connection between their virtual behavior and behavior in the real world would help marketers communicate to this extensive market.

2.2 Teen Purchasing Power and the Virtual Economy

American teens have a strong desire for clothing and a whole host of studies have examined their purchasing power. For instance, Mediamark Research (2003) reported that teens not only spend a significant amount on buying goods and services, but also influence their parents' decision-making and spending pattern. Due to the changes in the family structure, many teens are taking more responsibility for families such as day to day shopping and routine purchase decisions. Therefore, they exert huge influence on purchase decisions of their parents. It is also important to note that over the next 50 years this generation will inherit US\$ 41 trillion (Mediamark, 2003).

Although teens make far less money than adults, they have relatively more disposable income, since they have few financial obligations (Zollo, 1995). Packaged Facts (2007) reports that 26 million Americans aged 12 to 17 years earn an aggregate income of \$80 billion. The report also states that spending on and by U.S. teenagers is forecasted to exceed \$208 billion by 2011, an increase from \$189.7 billion in 2006. The biggest portion of this substantial figure goes

towards apparel, with an estimated 42 percent of the nation's total teen budget allocated to the fashion category (Poggi, 2007).

Shopping is among the top leisure activities engaged in by teenage girls in the United States, as they shop, clothing purchases are the biggest expenditure in their budget (Neuborne & Kerwin, 1999). Clearly, firms targeting teens will have to tune in and think like teens do. Marketers view teens as “consumers- in- training” because brand loyalty often develops during adolescence and a teenager who is committed to a brand may continue to purchase it for many years to come (Solomon, 2006). Overall, teen girls spend a significant amount of money on apparel. However, no research indicates how much of this income is spent due to virtual fashion world's influence.

There has been a growing number of virtual financial systems, which are constantly developing into economic systems with millions of residents (Messinger, et al., 2009). The inhabitants of these worlds are doing business; they carry out transactions and convert their virtual money into real money (Sivan, 2009) an example of a virtual world with a flourishing “real” economy is Second Life created by Linden Lab. The trade currency in Second Life is Linden Dollar (L\$), which can be exchanged at the rate of one US\$ to approximately L\$260. In April 2007, residents of the Second Life spent approximately real US\$10 million on virtual land, products and services (Sivan, 2009). Many brands have established islands in Second Life, including “Adidas, Calvin Klein, Reebok, Lacoste, and Jean Paul Gaultier, Herman Miller, BMW, and Mercedes; companies like IBM, Intel, GM, Toyota and Coca Cola have are present as well” (Kohler, Matzler, & Füller, 2009). All these companies hope to attract the increasing number of consumers who enter their sites in the form of avatars.

Other examples of virtual worlds that focus mainly on adolescent users are Teen Second Life, stardoll, doppelganger and gaia online just to mention a few. The majority of these virtual worlds also have virtual economies with their own currencies (Reuters, 2007). The fashion element is a big part of these worlds regardless of the targeted age. Just as in the real world, people want to dress up their avatars to express their personalities in the virtual world. As a result all virtual worlds offer functions to customize avatars. Clothing, fashion and accessory companies in the real world have enormous opportunities to not only present their brands into the teens marketplaces, but also generate revenue derived from these virtual worlds (Kzero, 2009).

Research has shown that online sales, advertising and the general efficiency of the web has increased due to existence of the virtual worlds (Coyle & Thorson, 2001; Griffith & Chen, 2004). By 2011, projections indicate that 80% of Internet users will have an avatar presence in a virtual community and that virtual world membership could reach a billion users by 2017 (Gartner, 2007, April 24). The use of virtual worlds as a social environment is on the rise; its importance to firms makes it an environment in need of understanding. There is evidence that virtual worlds have a huge economic potential as virtual residents start spending more on their avatars. However, very little is known about virtual residents' behavior as consumers (Wood & Solomon, 2008).

2.3 Theoretical Background

To fulfill research objectives, a research model is developed through integrating three theories, the social learning theory, the innovation adoption theory and the use and gratification theory. Below three theories and related literature is reviewed.

2.3.1 Social Learning Theory (SCT)

Albert Bandura, the founder of social learning theory suggests that as individuals interact with one another, learning experiences occur that could influence their attitudes and behaviors as consumers. He emphasizes the importance of observing, learning, and modeling (Bandura, 1977). Learning experiences can occur in a variety of environments as consumers are exposed to a large number of different activities. The social learning theory has been used extensively by many researchers to examine how different groups of consumers learn their consumption patterns (Craig & Alan, 2000; Keillor, Parker, & Schaefer, 1996; Moschis & Churchill Jr, 1978; Scott Ward, 1978). For instance, Martin and Bush 2000 explored the impact that role models may have on teenagers and found that mothers, fathers, famous athletes, and entertainers are perceived as important role models to teenagers today.

Ward (1978) suggested that consumer socialization be viewed as a lifelong process of acquisition of skills, knowledge and attitudes relating to consumption. Keillor, Parker, and Schaefer 1996 studied influences on adolescent brand preferences in the United States and Mexico in the context of the model of consumer socialization and found similarity across cultures. Moschis and Churchill (1979) viewed socialization as a social process by which norms, attitudes, motivations, and behaviors are transmitted from specific sources, commonly known as 'socialization agents' to the learner. Overall, teens' learning experiences during their interactions in various environments are very vital in influencing their behaviors as consumers (King & Multon, 1996).

The virtual world provides an environment in which teens explore, interact and communicate with others through their avatars. In the process of online interaction, teens observe and learn attitudes towards the fashion presented in the virtual fashion worlds that could

influence their clothing behaviors in the real world by adopting the virtual fashion. Therefore, the virtual world can be viewed as a virtual social system that allows teens to share their fashion interests and express their opinions as they engage in play and construction of their avatars. Because avatars are created and directed by teens in the real world, the thoughts, choices and actions of avatars could be used to reflect teen's real life behavior. Hence, during interaction/communication and play with their avatars, teens are gaining social and consumer skills. As teen girls socialize in the virtual world, they observe, learn, and model fashion related behaviors from others in the virtual fashion world. However, whether and how the virtual fashion world can function as a socialization agent for teen girls has not been examined.

Peer pressure and self identity go hand in hand. Self identity can be defined as an important label people use to portray themselves (Biddle, Bank, & Slavings, 1987). Sociologists and psychologist view self-identity as a very important aspect in determining behavior. Arnett (2000) stated that it is during the teen years that the processes of identity and evaluation of one's self worth largely occur. During this developmental stage, many changes take place as individuals leave the role of childhood and prepare to assume the role of adulthood. These changes create a lot of uncertainty about self, and the need to belong and to find one's unique identity as a person becomes extremely vital (Erikson, 1968).

Every day, teens are presented with myriad opportunities to purchase and consume, both, to satisfy their physical needs and to express their identities and values. Teens may purchase clothing as a way to portray their identities and express their values (Beaudoin, Lachance, & Robitaille, 2003). In the virtual worlds teens have freedom to explore who they are, consequently teens' clothing related behavior in a virtual world could play an important part in influencing their clothing behavior in the real world.

Solomon (2006, p. 380) refers to human beings as “social animals who must belong to a group.” He also states that teens belong to groups in which they try to conform and use other teens as mirrors on how to behave by observing the actions of other members of the group. During teen years, peer acceptance becomes supreme, and teens are actively searching for the “right way” to look and behave so that they are approved by others. Fashion usage is one significant medium through which the need to have the “right way” to look and behave can be met.

Scott Ward (1974) affirmed that young people gain skills, knowledge and attitudes through socialization to help them become consumers. Socialization also plays a major role in the virtual world. In a virtual world such as stardoll.com (which is one of the online communities for girls who love fashion, shopping, decorating, creativity, and making new friends) members can create their own McDoll avatar, shop, dress up, decorate their suite, express themselves creatively, and socialize with each other. As teens engage in these activities, they acquire skills, knowledge, and attitudes, which are important to the functioning as consumers (Ward, 1974).

Peer pressure is perhaps the strongest influence on teens’ socialization and learning process it is also one of the influences on consumer behavior, especially in relation to consumption of symbolic goods such as clothes and fashion items (Brittain, 1963). Dotson and Hyatt (2005) studied peer pressure between boys and girls in relation to clothing choices and found out that girls are subject to peer pressure more than boys. Auty and Elliott (2001) held similar views as they affirmed that conforming to the fashion that is accepted by their peer group is more important than choosing brands that express one’s own identity among girls. However, Bearden and Rose (1990) found that, generally teens valued group identity and before making

any clothing choices they had to get approval from their groups to maintain identity. It is evident that teens not only consume fashion to create and boost a sense of identity but at the same time also need to express differences between groups and maintain group identity (Bourdieu, 1984). Peer pressure is very prevalent in the adolescence stage. However, whether peer pressure affects teens' going to the virtual world to rehearse their clothing practices has not been examined yet.

2.3.2 Innovation Adoption Decision Process

Rogers (1995), a well known sociologist and scholar pioneered the diffusion of innovations theory. Rogers (1995) categorizes individuals within the social system based on their innovativeness into five categories: innovators, early adopters, early majority, late majority, and laggards. Innovators are the first individuals to adopt an innovation, willing to take risks, youngest in age, having the highest social class, great financial lucidity, very social and having the closest contact to scientific sources and interaction with other innovators. Looking at the characteristics described above we can say that most teens are innovators in that they are young, have disposable income, like to take risks and are social.

Adoption decision making framework examines how new ideas are embraced among groups of people (Rogers, 1995). The virtual world is a relatively new idea to many people; teens have been considered to have the characteristics of innovators, and they are among the first groups of people in the society to embrace this new technology. Adoption of a new idea is affected by human interaction through an interpersonal network (Rogers, 1995). It is evident that teens are social and innovative and could be embracing the virtual world as a means for social networking. At this point, the social learning theory and innovation theory entwine. However, to

what degree teens' innovativeness affects them to adopt virtual worlds as a learning environment has not been examined.

Research indicates that innovativeness is domain specific, which means that consumers lean toward a specific product (Goldsmith & Newell, 1997). Fashion is highly significant in the diffusion of innovation, and since fashion cycles frequently occur with the introduction of new styles, this makes the fashion business a highly popular ground for diffusion studies that focus on innovativeness (Goldsmith, d'Hauteville, & Flynn, 1998). Fashion can refer to the process by which styles are introduced and accepted by consumers, and also to a particular style that is accepted by a large group of consumers at a particular time (Kaiser, 1985). Whatever one's take on fashion, fashion innovators help facilitate the spread of new fashion clothing, so that an understanding of this group should contribute to the development of new strategies to speed up adoption, and increase sales and profits.

In comparison to other age groups, teens seem to be more involved with fashion. They emanate fashion, styles and trends (Mediamark, 2004; Zollo, 1995). Teens are an important consumer group because they are influential in terms of being fashion arbiters and innovators or early adopters. Many studies agree that a majority of fashion leaders and innovators or early adopters are most commonly found among adolescents (Beaudoin, et al., 2003; Goldsmith, Moore, & Beaudoin, 1999; Gutman & Mills, 1982).

The theory of the diffusion of innovations demonstrates that innovators are the first to buy a new fashion product or to adopt to a new fashion style as it appears in the marketplace; they give the new product approval for the other fashion consumers who imitate (Flynn & Goldsmith, 1993; Martínez & Polo, 1996). Fashion consumption has generally been associated with girls/women, research shows that girls/women are concerned about fashion, beauty and

appearance more than boys/men in most societies (Beaudoin et al., 2003). Further research has shown that women who are young, educated and have some income are fashion innovators (Brannon, 2005). The innovativeness of a consumer acts as the force that motivates the marketplace to always offer new, novel products and services (Midgley & Dowling, 1978). This research focuses on teen girls' and is geared to examine the relationship between their fashion innovativeness and adoption of virtual fashion.

Marketers agree that innovativeness is one of the concept that has a direct significance to consumer behavior (Muzinich, Pecotich, & Putrevu, 2003). Thus, it is very important to examine the impact of innovativeness on consumer adoption of innovations. Rogers and Shoemaker (1971) define innovativeness as the “degree to which an individual is relatively earlier in adopting an innovation than other members of his system” (p. 27). The acquisition of new information, ideas, and products encourages new product adoption. In order to identify new product adopters, a characteristic of individual traits is visualized as consumer innovativeness (Hirschman, 1980; Midgley & Dowling, 1978). Consumer innovativeness is perceived as a precursor to adopting new products (Chau & Kai, 1998). In the same way fashion innovativeness can be perceived as an antecedent to adopting new fashion products. There is no research yet examining how fashion innovativeness is related to adoption of virtual fashion.

2.3.3 Uses and Gratifications Theory

The uses and gratifications theory is from mass communications research that focuses on individual use and choice of media (Blumler & Katz, 1974). The uses and gratifications theory views persons as purposive and active, specifying that people select media based on needs.

Blumler and Katz (1974) propose that when individuals face media choices, they choose a media that gratify their needs the best.

Although so many needs have been examined, people seem to use various media for such core needs as getting information, being entertained, interacting with others socially, and gaining insight into one's personal identity (Ang, 1995). Social integration needs engage in establishing and maintaining contact with others. Personal identity needs involve learning about self. Entertainment needs are typically the need to be entertained or to play. The uses and gratifications theory suggest that individuals choose to use media based on their beliefs and feelings about how well doing so will satisfy their needs (Palmgreen, 1984). One of the earliest models of media choice proposed that people select communication technologies based on a medium's attributes. Short, Williams, and Christie, (1976) claims that media vary in the degree to which they can convey the physical presence of communicators. The media is arranged along a continuum from low to high social presence and argues that persons will choose the medium that they recognize to have the highest social presence.

As indicated by Ko, Cho and Roberts (2005), uses and gratifications theory is generally accepted and has been used in various research to understand different media ranging from newspapers to the internet. Once a new technology enters the stage of mass communication, this theory could be used to investigate the effectiveness of media in fulfilling individual needs (Elliott & Rosenberg, 1987). In recent years, there has been an increase in research that uses the uses and gratifications theory to explain user participation in virtual communities (Dholakia, Bagozzi, & Pearo, 2004; Sunanda, 2005).

2.4 A Conceptual Model of Adoption of Virtual Fashion

The research reviewed above has yielded a number of factors that may influence the adoption of virtual fashion. A conceptual model concerning adoption of virtual fashion (Figure 1) based on review of literature is proposed below. It integrates communications, sociological and fashion research. The model specifies that two external variables, fashion innovativeness and peer pressure are associated with teen girls' attitudes toward the virtual fashion world and the degree of need gratification. The model also indicates that attitude towards the virtual fashion as well as the gratifications of needs are expected to impact teens' virtual fashion adoption.

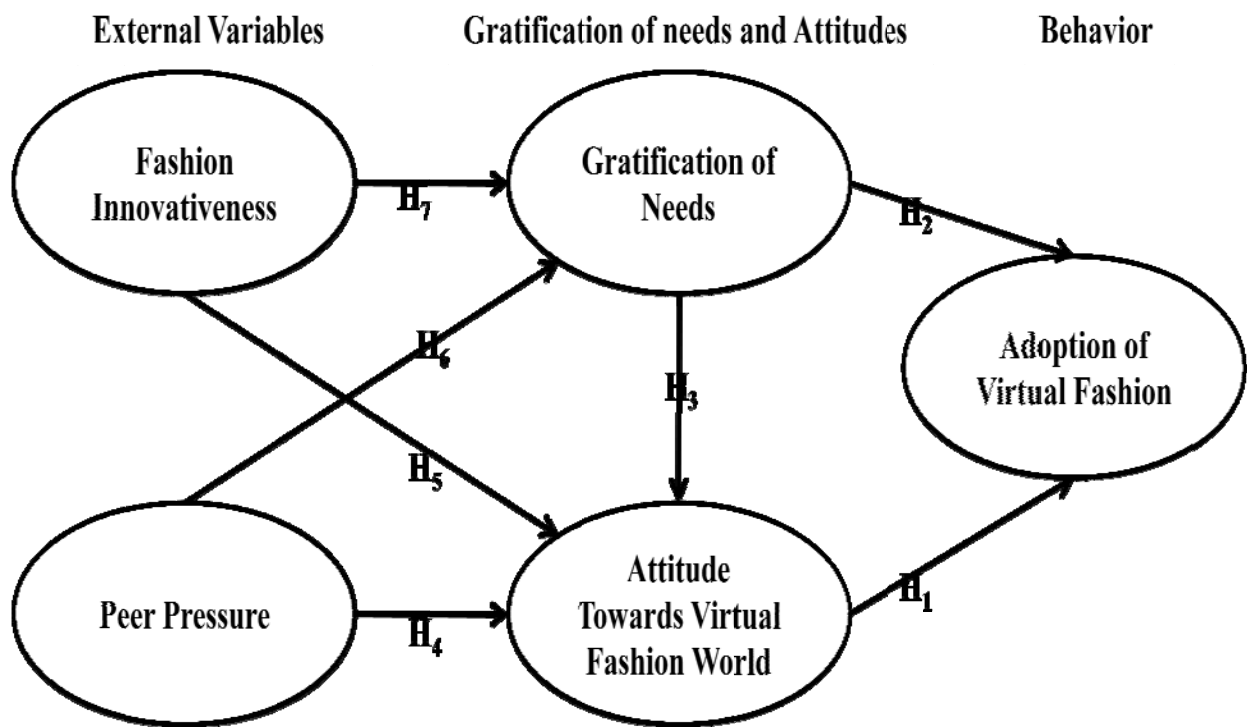


Figure 1: Hypothesized Conceptual Framework of Adoption of Virtual Fashion

2.5 Hypothesis Development

2.5.1 Adoption of Virtual Fashion World

A virtual world is an immersive three-dimensional world that has the likeness of the real world but without its physical limitations; people in the virtual world interact as avatars with each other (Bainbridge, 2007). Virtual fashion can be defined as popular clothing styles presented in the virtual world, which may or may not have a physical existence in a real retail store.

King and Ring (1980) define fashion adoption as the process by which new fashion clothing is adopted by the consumer after it has been introduced in the market. Adoption of virtual fashion can therefore be seen as the process by which teen girls are getting clothing ideas and tips from the virtual fashion worlds and using them not only in the virtual worlds but also in the real world. The adoption of virtual fashion is manifested by purchasing real fashion clothing pieces and also through word of mouth where fashion innovators recommend fashion ideas and tips to fashion followers.

2.5.2 Attitude Toward Virtual Fashion Worlds

Attitudes can be defined as an overall positive or negative evaluation of a product or service. Attitudes are learned through socialization and other cognitive processes and have been identified as the immediate predicator of adoption of an innovation (Jobber, 2001). For instance, Chen and Wells (1999) found that positive consumer attitude towards a site is a major indicator of web effectiveness. MacKenzie, Lutz, and Belch (1986) also suggest that attitude toward a site directly affects attitude toward the brand, which exerts a direct influence on purchase.

It is reasonable to assume that a positive attitude towards the virtual fashion world might consequently lead to adoption of virtual fashion. This positivity may consequently lead not only to purchases in the virtual fashion worlds but also purchases in the real world.

Based on the above, we posit the following:

H₁: Teen girls' positive attitude towards virtual fashion worlds lead to adoption of virtual fashion.

2.5.3 Gratification of Needs

The choice to use a particular media by an individual is geared to fulfilling a need (Blumler & Katz, 1974). Papacharissi and Rubin (2000) noted that Internet usage is paramount in providing evidence supporting the use and gratification theory. Papacharissi and Rubin (2000) proposed five primary needs for using the internet: socialization, pastime, information seeking, convenience and entertainment. Information seeking, socialization and entertainment were chosen as the focus for the study given the fact that the most popular reasons for teens to use the web were to get information, to communicate, and for fun (Arnett, 1995; Arnett, Larson, & Offer, 1995)

The entertainment construct refers to the extent to which the web media is fun and entertaining to media users (Eighmey, 1997; Eighmey & McCord, 1998). Informativeness can be defined as the extent to which the Web provides users with resourceful and helpful information (Chen & Wells, 1999). Socialization can be termed as the interaction of individuals, through which learning experiences are obtained (Bandura, 1977). Providing higher entertainment, socialization and information value is likely to lead to perceived advantage for media users and therefore motivates them to use the media more.

Many real life companies, as discussed in the subtitle of virtual economies, are making their landing in the virtual worlds. For instance, in a virtual fashion world like stardoll we see real life companies like Donna Karan New York (DKNY), Kohl's, and many others. Teen girls who visit the virtual fashion worlds have various needs including the needs to search for fashion information, to play or be entertained or to socialize. The extent to which virtual worlds meet the teen girls' needs for getting information, communicating with peers, and for fun; will impact their attitudes towards the virtual fashion world and the adoption of virtual fashion.

Based on the above, it is hypothesized that:

H₂: Gratification of needs will lead to teen girls' adoption of virtual fashion.

H₃: Gratification of needs will lead to a positive attitude towards virtual fashion world.

2.5.4 Peer Pressure

It has been argued that virtual worlds have such strong real-to-virtual economies because of one main factor: social pressure (Jennifer, 2009). In a virtual world, stores of every type are extensive throughout the world, and avatars with beautiful clothing and accessories quickly grab the attention of other avatars, who begin to feel the pressure to fit in. As with real world goods, virtual goods are associated with establishing identity. Even though inhabitants of virtual worlds are not told outright to change their appearance, it is apparent that the pressure to fit in makes appearances matter throughout the world (Jennifer, 2009).

Many studies have found a positive relation between interactivity and attitude toward the Web (Cho & Leckenby, 1999; Jee & Lee, 2002). Once teen girls (consumers) visit the virtual fashion worlds and interact with clothing and other avatars, they may evaluate the site and also the virtual clothing presented. This interactivity may relate to teens evaluation of clothing and

consequently attitude toward the virtual fashion and eventually willingness to adopt virtual fashion. In addition, how the virtual fashion world presents its products can provide consumers with better opportunities to process information provided to meet their needs. The degree to which to which peer pressure is in existence in the virtual fashion worlds may impact their perception towards the virtual fashion words.

Based on the above, it is hypothesized that:

H₄: Peer pressure will lead to a positive attitude towards the virtual fashion worlds.

Teen years are a time of susceptibility to peer pressure and conformity (Dotson & Hyatt, 2005). The virtual world is a social environment that resembles the real world. In a virtual world, teens are equally prone to the influence of other avatars as they interact, explore and engage in various activities together to meet various needs. As teens explore the virtual fashion worlds their needs may be met and they may acquire skills, knowledge, and attitudes, which are important to the functioning as consumers (Scott Ward, 1974).

Based on the above, it is hypothesized that:

H₅: Peer pressure will be associated with the degree of need gratification.

2.5.5 Fashion Innovativeness

Fashion innovators try new clothing fashions and hence they have a strong need to gather and assess information pertaining to fashions because they want to be the trendsetters for fashion clothing. Previous studies have found that innovators spend more money on clothing, they know more about clothing styles and brands, and own more styles than non-innovators (Baumgarten, 1975; Goldsmith, Flynn, & Moore, 1996). Greater knowledge of fashion seems to be an indispensable requirement for fashion innovativeness (Goldsmith et al., 1996). Rarely do

innovators get information from peers hence they must rely on specific sources of fashion information. This information can come from mass-media sources such as catalogs, magazines and television shows or virtual fashion worlds.

Studies of diffusion of innovations consistently show a significant positive relationship between innovativeness and information-seeking propensity (Dorothy & Lynda, 1983). This implies that consumers with an innovative persona are more likely to search for information with reference to new products or services. This is understandable because new products and services necessitate consumers to take in a lot of information about the various attributes. Many studies agree that a majority of fashion innovators are most commonly found among adolescents (Beaudoin et al., 2003; Goldsmith et al., 1999; Gutman & Mills, 1982). Specifically, teen girls have a high degree of fashion innovativeness (Beaudoin et al., 2003).

Assumptions can be made about virtual fashion worlds, a new invention, and the fact that teen girls are rushing to these environments to have their needs met. Previous research suggests that if a media is perceived as one that fulfils the needs of it's users it can motivate them to use the media more frequently (Alwitt & Prabhaker, 1992). Due to their high degree of fashion innovativeness, teen girls may be more likely to have a positive attitude towards the virtual fashion world and will therefore visit these virtual fashion worlds to acquire more fashion related knowledge. It seems reasonable to expect that teen girls with higher fashion innovativeness will be more likely to visit virtual worlds to seek information, get fun, or socialize with other teens, and to do any activities related to virtual fashion adoption.

Based on the above, it is hypothesized that:

H₆: Teen girls' fashion innovativeness will positively impact their attitude towards the virtual fashion world.

H₇: Teen girls' fashion innovativeness is associated with gratification of needs.

CHAPTER 3. METHODOLOGY

This chapter presents the methodology, including: (1) procedure and sample; (2) questionnaire development; (3) measures; (4); statistical analysis and (5) chapter summary.

3.1 Procedure and Sample

Qualitative and quantitative approaches were used to fulfill the research objectives. The qualitative method was used in order to determine what factors influence a teenager's propensity to use the virtual world. According Strauss and Corbin (1990), qualitative research methods such as in-depth interviews or focus groups are appropriate when the researcher is attempting to find out what lies behind a phenomenon about which little is known. Very little is known about the virtual world; hence, this was an appropriate method. Two focus groups were recruited to conduct panel discussions. For the quantitative method section, a questionnaire survey was administered.

3.1.1 Qualitative Study

The state 4-H fashion board girls were used to conduct two focus group interviews. Before the interview, the girls, through Louisiana State University AgCenter 4-H Youth Development director were informed of the interviews. Detailed information was given to the girls to ensure a clear understanding of what focus groups entail. Questions regarding the use of the virtual world were asked (Appendix B) and taped. The interviews were coded and themes were derived. The information attained from the focus groups aided in the development of the survey.

3.1.2 Quantitative Study

Data was collected from a convenience sample. The sample consisted of girls between the ages of 12 and 19 from Louisiana. The following institutions granted permission to carry the study; 4-H fashion board girls from Louisiana State, White Castle High school, St. Josephs Academy, Starring lane Education centre and Dunham School. The sample is considered relatively representative since the girls come from different parishes in Louisiana. IRB approval forms (Appendix A) were given to all the institutions involved. Volunteers from each institution met with the researcher, who explained the study. As an incentive the respondents had a chance to win Wal-mart gift cards. There was one grand winner to receive \$30, two winners to receive \$20 and three winners to receive \$10 Wal-Mart gift cards. A total of 218 responses were collected. After data cleaning 177 responses were included for empirical study.

Stadoll.com was chosen based on the criteria that it is one of the virtual worlds that exclusively deals' with fashion and girls. The researcher introduced the site to the girls and from the focus group it was apparent that the majority of the girls had visited this virtual fashion world. The volunteers were asked to spend time examining the site letting their own level of interest guide them in deciding how much time to spend on this site. A date was scheduled with each institution when the survey could be taken. The survey was launched using an online survey provider qualtrics.com. Participants accessed the survey by clicking the link http://lsu.qualtrics.com//SE?SID=SV_8i6gsURCxd8dwHi&SVID= in the school computer labs. The use of online survey was deemed advantageous because it is easy to complete and return; it is also easy to recognize incomplete responses. Data can also be easily transferred for analysis without the need for additional data entry, eliminating error and reducing costs associated with manual data entry.

3.2 Questionnaire Development

In addition to the focus groups, a comprehensive review of literature was also used as an aid to develop the survey through obtaining conceptual and measurement information pertaining to the variables being studied. The survey was designed by combining and modifying key elements found in other instruments. Modifying the testing tools was necessary so that the questions would better relate to virtual world activities. A list of measurement items was compiled into a prototype survey. As a result, the written survey (Appendix B) comprised measures of the following variables. The first variable was used to measure fashion innovativeness and peer pressure influence. The second measure was used to measure gratification of information, entertainment, and socialization needs. The third variable was used to examine attitude towards the virtual fashion worlds, and finally, adoption of virtual fashion was also measured. Demographic information was assessed as well, including age, gender and amount of money spent on clothing.

The survey was pretested using an undergraduate class at Louisiana State University to ensure that the survey pages appeared correctly, in terms of format and design and that the wording of the questions was clear. Modifications were made based on the commentaries from the participants.

3.3 Measures

The scales of measurement were drawn from previous literature related to consumer behavior. Table 1 shows that most of the constructs in the study were measured using a five-point Likert-type scale. The scales range from strongly disagree (1) to strongly agree (5).

Table 1: Measurement and Its Source

Variable	Number of Items	Source of Items	Scale
Peer Pressure	10	Boush, Friestad, and Rose (1994)	Five-point Likert-type (strongly agree/disagree)
Fashion innovativeness	6	Goldsmith's scale (1997)	Five-point Likert-type (strongly agree/ disagree)
Gratification of needs	15	Korgagaonkar and Wolin (1999) and Lin (1999)	Five-point Likert-type (strongly agree/disagree)
Attitude towards the virtual fashion worlds	7	Chen and Well's (1999)	Five-point Likert-type (strongly agree/disagree)
Adoption of Virtual Fashion	7	Adopted from Holdorf (2005)	Five-point Likert-type (strongly agree/disagree)

Ten items from Boush, Friestad, and Rose (1994) scale were used to measure the susceptibility of teen girls to peer pressure; the scale measures the degree to which a person expresses the tendency to seek information about products by observing others behavior and asking for their opinions. The scale has been rigorously tested by different researchers for reliability and validity and it has been found appropriate for teen respondents.

The scale developed by Goldsmith and Flynn (1998) was adapted to measure teens' fashion innovativeness. The scale is balanced with three positively and three negatively worded items using a five-point likert scale. Several studies have shown the innovativeness scale to be reliable (between 0. 81 and 0. 86), valid, internally consistent and free from social desirability bias (Bearden & Netemeyer, 1993).

For gratification of needs, three dimensions of needs (i.e. socialization, entertainment and information) were identified and included in the study. Therefore, gratification was assessed in terms of meeting teens' needs in socialization, entertainment, and information. Gratification of the needs of socialization was assessed using the scale from Korgaonkar and Wolin (1999), the

scale has reliability of an alpha of .80; it is considered valid because the items composing the scale loaded together and highest on socialization dimension in the seven- factor solution based upon principal components factor analysis with varimax rotation. Gratification of needs for entertainment was measured using Lin's scale (1999), which has a reliability of alpha of .88. The gratification of information need was measured using the Korgaonkar and Wolin (1999) scale. The scale is composed of five items that appear to capture the extent to which a person uses the web due to its ability to help locate information quickly and cheaply. The scale showed a reliability of an alpha of .77 (Korgaonkar & Wolin, 1999).

To assess their attitude towards the virtual fashion worlds, Chen and Well's (1999) scale of adoption towards a site was modified to measure a person's general evaluation of a virtual fashion world. The scale showed reliability of an alpha of .92 in the initial study.

The construct for adoption of virtual fashion were adopted from an adaptation of common uses and gratifications survey (Holdorf, 2005) Other items were developed specifically for the current study by the researchers to assess virtual fashion adoption. In addition, demographic information was obtained related to participants' 1) gender, 2) age, and 3) spending on clothing products.

3.4 Statistical Analysis

Data obtained in this study was entered into the Statistic Package for Social Sciences (SPSS) for statistical analysis. Descriptive analyses (e.g., frequency, means, and modes) were run on data related to demographic information. The reliability of each multi-item scale was assessed prior to subsequent analyses. Factor analysis and a series of multiple regressions were employed to answer all hypotheses.

CHAPTER 4. RESULTS

This chapter consists of three major sections. The first section begins with an overview of participants' characteristics, then, descriptive information about variables related to, fashion innovativeness, peer pressure, gratification of needs, attitude towards virtual fashion and adoption of virtual fashion. The chapter concludes with the results of hypotheses testing.

4.1 Descriptive Statistics

4.1.1 Participant Characteristic

A total of 218 respondents answered the surveys, however; only 177 were usable. The demographic characteristics of the sample are summarized in Table 2. The descriptive analysis of the survey results revealed an average age of participants of 14.5 years old. Of these, 10.2% spent less than \$50, 29.4% spent \$50-\$100, 29.9% spent \$100-\$200, and 30.5% spent more than \$250 on clothing per semester.

Table 2: Demographic Characteristics of the Sample (n = 177)

Demographic Variable		Frequency	Percent (%)
Gender	Female	177	100
Age	11	4	2.3
	12	28	15.8
	13	30	16.9
	14	29	16.4
	15	18	10.2
	16	44	24.9
	17	21	11.9
	18	2	1.1
	19	1	.6
	Total	177	100
Money spent on Clothing per semester	Less than \$ 50	18	10.2
	\$50-\$100	52	29.4
	\$100-\$200	53	29.9
	more than \$250	54	30.5
	Total	177	100.0

4.1.2 Internet Usage

Because virtual behavior is an online behavior, respondent's online shopping behavior for fashion products was profiled. Approximately 65% of the respondents reported to have bought clothing online. When profiled on how likely they are to be influenced by what they read, hear or see about fashion clothing while online, 42% and 17% respondents likely and very likely respectively, this indicates the impact that Internet has on clothing behavior of teens.

4.2 Measurement Assessments

4.2.1 Exploratory Factor Analysis

Exploratory factor analysis, using a Principal Component Analysis method was performed on 45 items for measuring five identified research constructs; fashion innovativeness, peer pressure, gratification of needs, attitude toward virtual fashion worlds and adoption of virtual fashion to assess measurement structure and validity.

The first iteration of analysis identified three items with low commonalities and consequently the three items were dropped. The remaining 42 items were again factor analyzed. The second round of factor analysis identified five items with low loadings and therefore those five items were dropped. The remaining 37 items were once again factor analyzed. The final factor solution from the third iteration accounted for approximately 75.5% of the total variance. All commonalities ranged from .616 to .869.

The rotated component matrix showing the items and factor loadings are presented in Table 3. To assess the reliability of the variables, Cronbach's alpha was calculated. Cronbach's alpha is a widely used measure for assessing the reliability of a psychometrically developed scale

(Peter, 1979). In addition, Cronbach's alpha was used to examine the internal consistency of the measures. The value of the Cronbach's coefficient ranges from 0 and 1, where 0 indicates a completely unreliable measure and 1 indicates a completely reliable measure. Nunnally and Bernstein (1994) recommend that the reliability of all latent constructs should exceed the benchmark of 0.70 as an indication of acceptable measures. Table 3 shows the reliability of all measures used in the study, in summary, all measures demonstrated acceptable degree of reliability.

Table 3: Five-Factor Structure of Adoption of Virtual Fashion

Factor Labels	Statements	Factor Loadings	Reliability
Fashion Innovativeness	If I heard that a new fashion style was available in the store, I would be interested enough to buy it	.756	.809
	In general, I am among the first in my circle of friends to buy a new fashion item when it appears on the market	.724	
	I regularly purchase different clothes or accessories to create a different look	.696	
	I know the names of new fashion designers before other people do	.644	
Peer pressure	When buying fashion products, I generally purchase what I think others will also like	.869	.898
	It is important that others like the fashion clothing and brands I buy	.808	
	To make sure I buy the right fashion product or brand, I often observe what my peers are buying and using	.799	
	I achieve a sense of belonging by purchasing the same fashion products as my peers	.766	
	I like to know what fashion brands and products make a good impression on others	.760	
	If I have little experience with a fashion product, I often ask my friends about it	.634	
Gratification of needs	Overall, information obtained from stardoll.com is very useful	.860	.970
	I enjoy surfing stardoll.com	.845	
	This virtual fashion world is fun to use	.836	
	I feel excited when surfing stardoll.com	.799	
	Overall, I learn a lot about fashion from visiting stardoll.com	.797	
	Stardoll.com gives me quick and easy access to large volumes of fashion information	.792	
	I feel free to express myself when visiting stardoll.com	.789	
	This virtual fashion world is cool	.788	
	I can learn about things happening in the fashion world from visiting stardoll.com	.767	
	I enjoy dressing my avatar freely	.766	
	Surfing stardoll.com is entertaining to me	.758	
	I can make new friends at stardoll.com if I want	.748	
	I enjoy joining some of the clubs.	.718	
	Acquiring fashion information in stardoll.com is inexpensive	.677	
	I can freely meet people with my interests if I want	.616	

(Table 3 Continued)

Attitude Toward Virtual Fashion World	stardoll keeps me up-to-date on how I should dress	.766	.934
	stardoll points out what I need to wear to be cool	.729	
	stardoll lets me know how I should wear my clothes	.713	
	stardoll helps me develop my style	.698	
Adoption of Virtual Fashion	How likely will you shop in the real stores you see in the virtual fashion world e.g., KOHL'S, DKNY...?	.732	.915
	How likely will you recommend your friends to get fashion ideas from stardoll?	.682	
	How likely will you try some of the style tips obtained from stardoll.com?	.659	
	How likely will you buy apparel/fashion brands you put on your avatar if you know the apparel/fashion	.643	
	When you see some cool clothes/fashion on other people's avatars, how likely will you try those clothes	.637	

4.3 Hypotheses Testing

Summit indicator was created by averaging scale items for each research construct. Then summit indicators were used to conduct multiple regressions to test the hypotheses. Table 4 shows standardized coefficients and their significance levels generated from running regression models.

Table 4: Results of regression analysis (n=177)

Independent Variable	Dependent Variable			
	Adoption of virtual fashion (Model 1)	Attitude towards virtual fashion worlds (Model 2)	Attitude towards virtual fashion worlds (Model 3)	Gratification of needs (Model 4)
Attitude towards virtual fashion worlds	(.249) 3.579*			
Gratification of needs	(.567) 8.164*	(.709) 13.301*		
Peer Pressure			(.178) 2.206*	(.059) .749*
Fashion Innovativeness			(.290) 3.583*	(.433) 5.506*
F-value	121.560	176.912	17.774	24.112
Adjusted R ²	.583	.500	.170	.208

Note: Table entries are regression coefficients. Standardized regression coefficients (Beta) are given in parentheses and * p<0.001

H₁ and H₂ suggested that teen girl's positive attitude towards virtual fashion worlds (H₁) and gratification of needs (H₂) lead to adoption of virtual fashion. To test for these hypotheses a regression model with adoption of virtual fashion as the dependent variable and the other two variables as independent variables was conducted. As shown in Table 5, the overall model was significant ($F = 121.560$, $R^2=.583$). As anticipated, attitude towards virtual fashion worlds had a direct positive effect on adoption of virtual fashion ($\beta=.249$, $t=3.579$), providing support for H₁; gratification of needs also had a positive effect on adoption of fashion ($\beta=.567$, $t=8.164$), providing support for H₂.

H₃ suggested gratification of needs will lead to a positive attitude towards the virtual fashion world. The data supported this hypothesis with a significant regression model ($F=176.912$, $R^2.500$) and a significant parameter ($\beta=.709$, $t=13.301$).

H₄ and H₆ suggested that peer pressure and teen girls' fashion innovativeness will lead to a positive attitude towards the virtual fashion worlds. While the overall regression model was significant ($F = 17.774$, $R^2.170$) not all parameters were significant. H₆ suggested that teen girls' fashion innovativeness will positively impact their attitude towards the virtual fashion. Therefore hypothesis 6 was supported by the data ($\beta=.290$, $t=3.583$). However, the findings did not provide support for H₄ ($\beta=.178$, $t=2.206$).

H₅ and H₇ suggested that peer pressure and teen girls' fashion innovativeness will be associated with the degree of need gratification. These hypotheses were partially supported by the data ($F = 24.112$, $R^2=.208$). Contrary to our expectations, peer pressure did not have a positive effect on gratification of needs ($\beta=.059$, $t=.749$), thus failing to provide support for H₅. On the other hand teen girls' fashion innovativeness had a positive effect on gratification of needs providing support for H₇.

4.4 Chapter Summary

This chapter presents statistical findings related to hypotheses addressed in chapter 2. In the next chapter, a discussion of conclusions related to these findings is addressed. Implications are provided. It is then concluded with limitations and future research directions.

CHAPTER 5. DISCUSSION AND CONCLUSIONS

The overall objective of this study was to examine the impact of virtual fashion worlds on teen girls' adoption of fashion. By integrating communications, sociological and innovation adoption theories, this research provides a framework to empirically examine teen girls' consumers' adoption of virtual fashion. More specifically, a model was formulated that enabled the testing of seven hypotheses to answer important research questions. In this chapter, a discussion of the findings is provided. Then implications of this study are presented. Finally, the limitations pertaining to the study are identified, followed by brief suggestions for future research directions.

5.1 Discussion of Major Findings

The research extends previous studies by examining the impact of both fashion innovativeness and peer pressure on teen girls' attitude toward virtual fashion worlds and the gratification of needs leading to adoption of virtual fashion. Many studies have focused on fashion innovativeness and peer pressure, but this is the first study to our knowledge that focuses on their impact in the virtual fashion worlds. The consumers in this study are specified as teen girls. Due to the unique characteristics of teenagers, these teen attitudes and behavior may result in different outcomes from studies of general consumers.

Objective 1: Examining the effects fashion innovativeness and peer influence on teen girls' gratification of needs and their attitude towards the virtual fashion world.

In examining the effect of fashion innovativeness on teen girls' gratification of needs and their attitude towards the virtual fashion world results revealed that fashion innovativeness had a positive effect on teen girls gratification of need and their attitude toward the virtual fashion

worlds. These results revealed support for previous studies that found that fashion innovativeness helped predict consumers' adoption of a product (Beaudoin et al., 2003; Goldsmith & Hofacker, 1991; Midgley & Dowling, 1978; Muzinich et al., 2003). In essence, this shows that personal innovativeness impacts adoption of virtual fashion just like it does for real world fashion.

However, when examining the peer influence effect on gratification of needs and attitude towards the virtual world, results revealed that peer pressure did not have a significant effect on gratification of needs and attitude towards the virtual world. These results are contradictory to previous works that found peer pressure to be a strong influence on teen consumer behavior especially in relation to symbolic goods such as clothes and fashion items (Brittain, 1963). This may be because, the anonymity of the virtual worlds allows teens to truly be themselves by offering the freedom and safe virtual space for them to experiment with multiple identities (Turkle, 1997). Through these interactions, teens can understand themselves and their world free from the peer pressure.

Objective 2: Examining the effect of teen girls' gratification of needs on their attitude towards virtual the fashion world.

When examining the effect of gratification of needs on the attitude towards virtual fashion world, results revealed that gratification of needs positively influence attitude towards virtual the fashion world. That is, when teen girls' information, entertainment and socialization needs are met, then, they are more likely to develop positive attitude towards the virtual fashion worlds.

Objective 3: Examining the effect of gratification of needs and attitude towards the virtual fashion world's on teen girls adoption of virtual fashion.

When the effect of gratification of needs on teen girls' adoption of virtual fashion was examined, results showed a significant relationship. That is, teen girls are likely to adopt virtual fashion if their needs are gratified. We further examined whether attitude towards the virtual fashion world play a critical role in influencing teen girls' adoption of virtual fashion. Results revealed that a positive attitude towards the virtual fashion world had a significant role in the adoption of virtual fashion. The results lend support for previous findings, indicating that attitudes are predicator of adoption of an innovation and that positive consumer attitude towards a site is a major indicator of web effectiveness, which exerts direct influence on adoption (Chen & Wells, 1999; MacKenzie, Lutz, & Belch, 1986).

5.2 Conclusion

To our knowledge, this study is among the first to examine the effect of virtual fashion worlds on teen girls' adoption of virtual fashion. We found significant relationship between teen girl consumers' gratification of needs and attitude towards the virtual fashion world. We also found that individual fashion innovativeness and peer pressure indirectly affect teens' adoption of virtual fashion mediated by attitude and needs gratifications. However, we did not find a significant relationship between peer pressure and gratification of needs. Overall, the proposed research model was supported.

5.2 Implications

This research approached the examination of teen girls' adoption of virtual fashion in a robust way by comprehensively reviewing previous research relating to this subject and

developing a strong research rationale, encompassing both theoretical and practical components. A theoretical conceptual framework was developed to guide the research by integrating well established communications, sociological and innovation adoption theories.

Empirical data were collected through an online survey to learn how teen girls use the virtual fashion worlds. Finally, regression model was used to test the proposed research model and hypotheses. Overall, the successful integration of well-understood theories in communications, sociology and innovation adoption have contributed to a better understanding of the effect of virtual fashion worlds on adoption of virtual fashion providing important implications from theoretical and practical perspectives.

5.2.1 Theoretical Implications

The virtual world provides a new framework within which to test developed theories and to apply current theories in a more innovative manner to better understand consumer behavior. The results add to existing literature related to consumers' adoption of an innovation explained by the integration of communications, sociological and innovation adoption theories. The study also adds to the limited studies done with virtual words, and allows future research to build upon it.

5.2.2 Practical Implications

The findings of this research have important practical implications for apparel retailers because they could be used in a way that would potentially enable online retailers to improve their performance. The results show that teen girls adopt virtual fashion when their needs are met and also when they have a positive attitude towards virtual fashion worlds. It is therefore

important that apparel firms meet the needs of consumer to ensure a positive perception for the user to perceive the media as effective. The growing use of virtual worlds as a social environment is important to apparel firms due to their huge economic potential since virtual residents are spending money on their avatars. It is without doubt a sensible strategy to be equipped for the increasing significance of virtual worlds in the future, and to build sufficient expertise in every firm today in preparation for tomorrow.

In addition, the results provide a preliminary venue for apparel retailers to target their customers. To effectively target specific consumer segments, retailers need to segment their customers based on their needs. For example marketing strategies aimed at teen girls may focus on product information socialization and entertainment. Not only do many marketers realize the spending power of teen consumers, they also recognize the significance clothing has for teens. Since businesses have the knowledge about this demographic, they need to respond by meeting their needs in the virtual worlds. Since technology is changing they also now need to capitalize on making their presence in the virtual worlds. Most experts agree that once the best ways to communicate, advertise and market products and services are determined, the virtual worlds will be very significant to companies and individuals, just as the web is today (Papadopoulou, 2007).

5.3 Limitations and Future Research Directions

In this study, the generalizability of findings beyond a specific sample and a specific virtual fashion may be limited, so it is important to note certain limitations of this study. First, the use of a small convenience sample restricts the generalization of the results to a specific population, usually because the population is not defined explicitly. The sample was limited to

one geographical area (Louisiana); future research may investigate teen responses to use of virtual fashion worlds in other geographical regions.

Second, the study did not have a distinction between urban and suburban teens; future research may want to investigate the differences between American teens in an urban area versus ones in a suburban area on the usage of virtual fashion world.

Third, the age range 12 to 19 was wide, future research may want to examine whether there are any similarities and differences between children, tweens and teens. All participants were females, if male participants were included in the study, the results of the study may be more interesting as to one may want to compare the gender differences related to adoption of virtual fashion.

Finally, the use of one virtual fashion world limited the study; respondents may have different perspectives about virtual fashion if they had an opportunity to examine other virtual fashion worlds. Future research could be extended to include the types of virtual fashion worlds visited to understand how respondents used the virtual worlds and to identify the factors that affected the duration of visit to a virtual world.

REFERENCES

- Alwitt, L. F., & Prabhaker, P. R. (1992). Functional and Belief Dimensions of Attitudes to Television Advertising: Implications for Copytesting. [Article]. *Journal of Advertising Research*, 32(5), 30-42.
- Ang, I. (Ed.). (1995). *Questioning the media: A critical introduction* (2 ed.): Thousand Oaks, CA: Sage.
- Arnett, J. J. (1995). Adolescents' uses of media for self-socialization. *Journal of Youth and Adolescence*, 24(5), 519-533.
- Arnett, J. J., Larson, R., & Offer, D. (1995). Beyond effects: Adolescents as active media users. *Journal of Youth and Adolescence*, 24(5), 511-518.
- Arnett, J. J. (2000). Emerging adulthood(s): The cultural psychology of a new life stage. In L. A. Jensen (Ed.), *Bridging cultural and developmental approaches to psychology: New syntheses in theory, research, and policy*. (pp. 255-275). New York, NY US: Oxford University Press.
- Auty, S., & Elliott, R. (2001). Being Like or Being Liked: Identity vs. Approval in a Social Context. [Article]. *Advances in Consumer Research*, 28(1), 235-241.
- Bailenson, J. N., Swinth, K., Hoyt, C., Persky, S., Dimov, A., & Blascovich, J. (2005). The Independent and Interactive Effects of Embodied-Agent Appearance and Behavior on Self-Report, Cognitive, and Behavioral Markers of Copresence in Immersive Virtual Environments. *Presence: Teleoperators and Virtual Environments*, 14(4), 379-393.
- Bainbridge, W. S. (2007). The Scientific Research Potential of Virtual Worlds. *Science*, 317(5837), 472-476.
- Bandura, A. (1977). Social learning theory *Group & Organization Management*, 2(3), 384-385.
- Batat, W. (2008). Exploring adolescent development skills through Internet usage: a study of French 11–15 year olds. *International Journal of Consumer Studies* 32, 374–381.
- Baumgarten, S. A. (1975). The innovative communicator in the diffusion process. *Journal of Marketing Research*, 12(1), 12-18.
- Bearden, W. O., & Netemeyer, R. G. (Eds.). (1993). *Handbook of Marketing Scales: Multi-Item Measures for Marketing and Consumer Behavior Research* Newburg Park, California Sage Publication.
- Bearden, W. O., & Rose, R. L. (1990). Attention to Social Comparison Information: An Individual Difference Factor Affecting Consumer Conformity. [Article]. *Journal of Consumer Research*, 16(4), 461-471.

- Beaudoin, P., Lachance, M. J., & Robitaille, J. (2003). Fashion innovativeness, fashion diffusion and brand sensitivity among adolescents. *Journal of Fashion Marketing and Management*, 7(1), 23-30.
- Biddle, B. J., Bank, B. J., & Slavings, R. L. (1987). Norms, preferences, identities and retention decisions. *Social Psychology Quarterly*, 50(4), 322-337.
- Blumler, J. G., & Katz, E. (1974). *The Uses of Mass Communications: Current Perspectives on Gratifications Research*. Sage Annual Reviews of Communication Research Volume III.
- Bourdieu, P. (Ed.). (1984). *Distinction: A social critique of the judgment of taste*.
- Boush, D. M., Friestad, M., & Rose, G. M. (1994). Adolescent skepticism toward TV advertising and knowledge of advertiser tactics. *Journal of Consumer Research*, 21(1), 165-175.
- Brannon, E. L. (2005). Fashion forecasting
- Brittain, C. V. (1963). Adolescent Choices and Parent-Peer Cross-Pressures. *American Sociological Review*, 28(3), 385-391.
- Chau, P. Y. K., & Kai, L. H. (1998). Identifying early adopters of new IT products: A case of Windows 95. [doi: DOI: 10.1016/S0378-7206(98)00031-7]. *Information & Management*, 33(5), 225-230.
- Chen, Q., & Wells, W. D. (1999). Attitude toward the Site. *Journal of Advertising Research*, 39(5), 27-37.
- Cheng, K. (1999). 'Setting their sites on generation 'Y''. In Adweek (Eds.) (Vol. 40, pp. 46-47).
- Cho, C.-H., & Leckenby, J. D. (1999). *Interactivity as a Measure of Advertising Effectiveness: Antecedents and Consequences of Interactivity in Web Advertising*, in *Proceedings of the 1999 Conference of the American Academy of Advertising*, . Pullman, Washington.
- Coyle, J. R., & Thorson, E. (2001). The Effects of Progressive Levels of Interactivity and Vividness in Web Marketing Sites. [Article]. *Journal of Advertising*, 30(3), 65-77.
- Craig, M. A., & Alan, B. J. (2000). Do role models influence teenagers' purchase intentions and behavior? *Journal of Consumer Marketing*, 17(5), 441-453.
- Dholakia, U. M., Bagozzi, R. P., & Pearo, L. K. (2004). A social influence model of consumer participation in network- and small-group-based virtual communities. [doi: DOI: 10.1016/j.ijresmar.2003.12.004]. *International Journal of Research in Marketing*, 21(3), 241-263.
- Dorothy, R. S., & Lynda, G. R. (1983). Fashion: A Marketing Approach. [Book Review]. *Marketing News*, 17(11), 19-19.

- Dotson, M. J., & Hyatt, E. M. (2005). Major influence factors in children's consumer socialization. *Journal of Consumer Marketing*, 22(1), 35-42.
- Eighmey, J. (1997). Profiling user responses to commercial Web sites. *Journal of Advertising Research*, 37(3), 59-66.
- Eighmey, J., & McCord, L. (1998). Adding Value in the Information Age: Uses and Gratifications of Sites on the World Wide Web. [Article]. *Journal of Business Research*, 41(3), 187-194.
- Elliott, W. R., & Rosenberg, W. L. (1987). The 1985 Philadelphia Newspaper Strike: A Uses and Gratifications Study. [Article]. *Journalism Quarterly*, 64(4), 679-687.
- Erikson, E. H. (1968). Identity: Youth and Crisis. Erik H. Erikson. Norton, New York, 1968. 336 pp. Cloth, \$6.95; paper, \$2.95. *Science*, 161(3838), 257-258.
- Ess, C. (2001). Culture, technology, communication (pp. pp. 31–48). Albany, NY: State University of New York Press.
- Facts, P. (2007). Teen markets in the U.S. from <http://www.packagedfacts.com/Teens 1493744/>
- Flynn, L. R., & Goldsmith, R. (1993). Identifying Innovators in Consumer Service Markets. *Service Industries Journal*, 13(3), 97-109.
- Gartner. (2007, April 24). Gartner says 80 percent of active Internet users will have a “second life” in the virtual world by the end of 2011. 503861. Retrieved Retrieved on August 4, from <http://gartner.com/it/page.jsp?id=>
- Giffey, T. (2006). Wired from birth. *Leader Telegram*.
- Goldsmith, R. E., d’Hauteville, F., & Flynn, L. R. (1998). Theory and measurement of consumer innovativeness: A transnational evaluation. *European Journal of Marketing*, Vol. 32 (3/4), 340-353.
- Goldsmith, R. E., Flynn, L. R., & Moore, M. A. (1996). The self-concept of fashion leaders. *Clothing & Textiles Research Journal*, 14(4), 242-248.
- Goldsmith, R. E., & Hofacker, C. F. (1991). Measuring consumer innovativeness. *Journal of the Academy of Marketing Science*, 19(3), 209-221.
- Goldsmith, R. E., Moore, M. A., & Beaudoin, P. (1999). Fashion innovativeness and self-concept: a replication. *Journal of Product & Brand Management*, 8(1), 7-18.
- Goldsmith, R. E., & Newell, S. J. (1997). Innovativeness and price sensitivity: managerial, theoretical and methodological issues. [Article]. *Journal of Product & Brand Management*, 6(3), 163.

- Goodstein, A. (2006). My So-Called Virtual Life. [Article]. *BusinessWeek Online*, 13-13.
- Greenfield, P. M., & Subrahmanyam, K. (2003). Online discourse in a teen chatroom: New codes and new modes of coherence in a visual medium. *Journal of Applied Developmental Psychology*, 24(6), 713-738.
- Griffith, D. A., & Chen, Q. (2004). The influence of virtual direct experience (VDE) on on-line ad message effectiveness. *Journal of Advertising*, 33(1), 55-68.
- Gross, E. F. (2004). Adolescent Internet use: What we expect, what teens report. *Journal of Applied Developmental Psychology*, 25(6), 633-649.
- Gutman, J., & Mills, M. K. (1982). Fashion Life Style, Self-Concept, Shopping Orientation, and Store Patronage: An Integrative Analysis. [Article]. *Journal of Retailing*, 58(2), 64.
- Haytko, D. L., & Baker, J. (2004). It's all at the mall: exploring adolescent girls' experiences. *Journal of Retailing*, Vol. 80(1), pp67-83.
- Hirschman, E. C. (1980). Innovativeness, Novelty Seeking, and Consumer Creativity. *Journal of Consumer Research*, 7(3), 283-295.
- Holdorf, R. L. (2005). *The Role of Teen Oriented Fashion Magazine Content on Clothing Purchase Behaviors and Attitudes of Adolescents and Teens*. Florida State University, Florida.
- Horridge, P., & Richards, L. (1984). Relationship of Fashion Awareness and Clothing Economic Practices. *Family and Consumer Sciences Research Journal*, 13(2), 138-152.
- James, M. L., Wotring, C. E., & Forrest, E. J. (1995). An exploratory study of the perceived benefits of electronic bulletin board use and their impact on other communication activities. *Journal of Broadcasting & Electronic Media*, 39(1), 30-50.
- Jee, J., & Lee, W.-N. (2002). Antecedents and Consequences of Perceived Interactivity: An Exploratory Study. *Journal of Interactive Advertising*, 3(1), 34-45.
- Jennifer, M. (2009). *Does Pressure Play Into Second Life Purchasing?* : Virtual Economy Research Network.
- Jobber, D. (2001). *Principles & practice of marketing*: McGraw-Hill, London, UK.
- Kaiser, S. B. (1985). The social psychology of clothing and personal adornment / Susan B. Kaiser: New York : Macmillan ; London : Collier Macmillan, c1985.
- Kaplan, A. M., & Haenlein, M. The fairyland of Second Life: Virtual social worlds and how to use them. [doi: DOI: 10.1016/j.bushor.2009.07.002]. *Business Horizons*, 52(6), 563-572.

- Kaplan, A. M., & Haenlein, M. (2009). The fairyland of Second Life: Virtual social worlds and how to use them. [Article]. *Business Horizons*, 52(6), 563-572.
- Keillor, B. D., Parker, R. S., & Schaefer, A. (1996). Influences on adolescent brand preferences in the United States and Mexico. *Journal of Advertising Research*, 36(3), 47-56.
- Kelton, A. J. (2008). Virtual Worlds? "Outlook Good". *EDUCAUSE Review*, 43(5), 15-16.
- King, C. W., & Ring, L. J. (1980). The Dynamics of Style and Taste Adoption and Diffusion: Contributions from Fashion Theory. [Article]. *Advances in Consumer Research*, 7(1), 13-16.
- King, M., & Multon, K. (1996). The Effects of Television Role Models on the Career Aspirations of African American Junior High School Students. *Journal of Career Development*, 23(2), 111-125.
- Ko, H., Cho, C.-H., & Roberts, M. S. (2005). Internet Uses and Gratifications. [Article]. *Journal of Advertising*, 34(2), 57-70.
- Koester, A. W., & May, J. K. (1985). Profiles of Adolescents' Clothing Practices: Purchase, Daily Selection, and Care. *Adolescence*, 20(77), 97-113.
- Kohler, T., Matzler, K., & Füller, J. (2009). Avatar-based innovation: Using virtual worlds for real-world innovation. *Technovation*, 29(6-7), 395-407.
- Korgaonkar, P. K., & Wolin, L. D. (1999). A multivariate analysis of Web usage. *Journal of Advertising Research*, 39(2), 53-68.
- Kzero. (2009). Kids, Tweens and Teens in Virtual Worlds. from <http://www.slideshare.net/nicmitham/kids-tweens-and-teens-in-virtual-worlds-2091502>
- Lenhart, A., Madden, M., & Hitlin, P. (2005). Teens and Technology: youth are leading the transition to a fully wired and mobile nation. Retrieved from from http://www.pewInternet.org/report_display.asp?r=162.
- Lenhart A., Rainie, L., & Lewis, O. (2001). *Teenage life online*. Washington, DC: Pew Internet and American Life Project.
- Lin, C. A. (1999). Online-Service Adoption Likelihood. [Article]. *Journal of Advertising Research*, 39(2), 79-89.
- MacKenzie, S. B., Lutz, R. J., & Belch, G. E. (1986). The role of attitude toward the ad as a mediator of advertising effectiveness: A test of competing explanations. *Journal of Marketing Research*, 23(2), 130-143.
- Martínez, E., & Polo, Y. (1996). Adopter categories in the acceptance process for consumer durables. *Journal of Product & Brand Management*, 5(3), 34-47.

- Mediamark, R. (2003). Teen Profile. from <http://www.magazine.org/content/files/teenprofile04.pdf>
- Mediamark, R. (2004). *Teen Market Profile*. New York: Magazine Publishers of America.
- Messinger, P. R., Stroulia, E., Lyons, K., Bone, M., Niu, R. H., Smirnov, K., et al. (2009). Virtual worlds — past, present, and future: New directions in social computing. *Decision Support Systems*, 47(3), 204-228.
- Michman, Mazze, E. M., & Greco, A. J. (Eds.). (2003). *Lifestyle Marketing: Reaching the New American Consumer*: Book by Ronald D.
- Midgley, D. F., & Dowling, G. R. (1978). Innovativeness: The concept and its measurement. *Journal of Consumer Research*, 4(4), 229-242.
- Montgomery, K. C. (2000). Children's media culture in the new millennium: Mapping the digital landscape. *The Future of Children*, 10(2), 145-167.
- Moschis, G. P. (1985). The Role of Family Communication in Consumer Socialization of Children and Adolescents. *Journal of Consumer Research*, 11(4), 898-913.
- Moschis, G. P., & Churchill Jr, G. A. (1978). Consumer Socialization: A Theoretical and Empirical Analysis. [Article]. *Journal of Marketing Research (JMR)*, 15(4), 599-609.
- Muuss, R. E. H. (1968). *Theories of Adolescence* (2 ed.). New York: Random House.
- Muzinich, N., Pecotich, A., & Putrevu, S. (2003). A model of the antecedents and consequents of female fashion innovativeness. [doi: DOI: 10.1016/S0969-6989(02)00060-7]. *Journal of Retailing and Consumer Services*, 10(5), 297-310.
- Negroponte, N. (1995). Being digital by Nicholas Negroponte. New York: Knopf, 1995. 243p. \$23.00. ISBN 0-679-43919-6. LC 94-45971. *Journal of Academic Librarianship*, 21(6), 498-498.
- Neuborne, E., & Kerwin, K. (1999, 15(February)). Generation Y. *Business Week*, pp. 80–88.
- Paisley, B. (2008). “I am so much cooler online”
- Palan, K. M. (2006). How Good A Shopper Am I? Conceptualizing Teenage Girls’ Perceived Shopping Competence. *Academy of Marketing Sciences Review*, 6.
- Palmgreen, P. (Ed.). (1984). *Uses and gratifications: a theoretical perspective* (Vol. 8). R.N. Bostrom Beverly Hills, CA: Sage.
- Papacharissi, Z., & Rubin, A. M. (2000). Predictors of Internet Use. *Journal of Broadcasting & Electronic Media*, 44(2), 175.

- Papadopoulou, P. (2007). Applying virtual reality for trust-building e-commerce environments. *Virtual Reality*, 11(2-3), 107-127.
- Peter, J. P. (1979). Reliability: A Review of Psychometric Basics and Recent Marketing Practices. [Article]. *Journal of Marketing Research (JMR)*, 16(1), 6-17.
- Poggi, J. (2007). Teen Spending on Apparel Down. [Article]. *WWD: Women's Wear Daily*, 194(79), 15-15.
- Reuters (Producer). (2007) Kids socialize in a virtual world as avatars. retrieved from <http://www.reuters.com/article/idUSN3118618120070601>
- Rogers, E. M. (1995). *Diffusion of Innovations* (4 ed.). New York: Free Press.
- Rogers, E. M., & Shoemaker, F. F. (Eds.). (1971). *Communication of innovations*. New York:: The Free Press.
- Rosen, E. (2000). *THE ANATOMY OF BUZZ* (Vol. 54). Doubleday, New York, (2000). Director Publications Ltd.
- Short, J., Williams, E., & Christie, B. (Eds.). (1976). *The social psychology of telecommunications*: Wiley (London and New York
- Sivan, Y. (2009). Overview: State of Virtual Worlds Standards in 2009. *Journal of Virtual Worlds*, 2(3).
- Smahel, D., & Subrahmanyam, K. (2007). "Any Girls Want to Chat Press 911" Partner Selection in Monitored and Unmonitored Teen Chat Rooms. *CyberPsychology and Behavior*, 10(3), 346-353.
- Solomon, M. R. (2006). The Psychology of fashion / edited by Michael R. Solomon *The Advances in retailing series*: Lexington, Mass. : Lexington Books, c1985.
- Strauss, A., & Corbin, J. (Eds.). (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*: Sage Publications, Inc
- Subrahmanyam, K., & Greenfield, P. (2008). Online communication and adolescent relationships. *The Future of Children*, 18(1), 119-146.
- Subrahmanyam, K., & Lin, G. (2007). Adolescents on the net: Internet use and well-being. *Adolescence*, 42(168), 659-677.
- Sunanda, S. (2005). Virtual Community Success: a Uses and Gratifications Perspective. (Proceedings of the 38th Hawaii International Conference on System Sciences).
- Tapscott, D. (1997). Growing up Digital. (pp. 64).

- Turkle, S. (1997). Sherry Turkle, *Life on the Screen: Identity in the Age of the Internet* (London: Weidenfeld & Nicholson, 1996), 347pp. ISBN 0 297 81514 8. *Convergence*, 3(1), 131-133.
- Ward, S. (1974). Consumer socialization. *Journal of Consumer Research*, 1(2), 1-14.
- Ward, S. (1978). Contributions of Socialization Theory to Consumer Behavior Research. [Article]. *American Behavioral Scientist*, 21(4), 501.
- Wood, N. T., & Solomon, M. R. (2008). Is Beauty Only Screen Deep? Perceptions of Avatars in Computer-Mediated Environments. [Abstract]. *Advances in Consumer Research - North American Conference Proceedings*, 35, 84-88.
- Zollo, P. (1995). *Wise Up to Teens*. Ithaca, NY: New Strategists Publications, Inc.

APPENDIX A: IRB FORMS

ACTION ON PROTOCOL APPROVAL REQUEST



Institutional Review Board
Dr. Robert Mathews, Chair
203 B-1 David Boyd Hall
Baton Rouge, LA 70803
P: 225 578 8692
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irb@lsu.edu | lsu.edu/irb

TO: Chuanlan Liu
Human Ecology

FROM: Robert C. Mathews
Chair, Institutional Review Board

DATE: December 2, 2009
RE: IRB# 3022

TITLE: Examining the Influence of Virtual World Fashion on Teen Girls Real Fashion Behavior

New Protocol/Modification/Continuation: New Protocol

Review type: Full ☐ Expedited ☒ Review date: 11/23/2009

Risk Factor: Minimal ☒ Uncertain ☐ Greater Than Minimal ☐

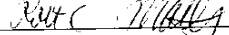
Approved ☒ Disapproved ☐

Approval Date: 12/2/2009 Approval Expiration Date: 12/1/2010

Re-review frequency: (annual unless otherwise stated)

Number of subjects approved: 1/482

Protocol Matches Scope of Work in Grant proposal : (if applicable) ☐

By: Robert C. Mathews, Chairman 

PRINCIPAL INVESTIGATOR: PLEASE READ THE FOLLOWING –
Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.
8. SPECIAL NOTE:

**All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at <http://www.lsu.edu/irb>*

**Application for:
Approval of Projects Which Use Human Subjects**

This application is used for projects/study's that cannot be reviewed through the exemption process.



Institutional Review Board
Dr. Robert Mathews, Chair
203 B-1 David Boyd Hall
Baton Rouge, LA 70803
P: 225.578.8692
F: 225.578.6792
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- Applicant, Please fill out the application in its entirety and include two copies of the completed application as well as parts A-E, listed below. Once the application is completed, please submit it to the IRB Office for review and please allow ample time for the application to be reviewed. Expedited review usually takes 2 weeks. Carefully completed applications should be submitted 3 weeks before a meeting to ensure a prompt decision.
- A Complete Application Includes All of the Following:
 - (A) Two copies of this completed form and two copies of parts B thru E.
 - (B) A complete copy of any grant proposal relevant to the project.
 - (C) Copies of all instruments to be used.
 - If this proposal is a part of a grant application, include a copy of the grant proposal, the investigative brochure (if one exists) and any recruitment materials including advertisements intended to be seen or heard by potential subjects.
 - (D) The consent form that will be used. A copy of the Waiver of Signed Informed Consent is attached and must be completed only if there is the intention to use an unsigned consent form. The **script to be used as the unsigned consent script MUST be included** with the waiver of signed informed consent.
 - (E) Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project, including students who are involved with testing or handling data, unless already on file with the IRB. Training link: <http://phrp.nihtraining.com/users/login.php>.

1) **Principal Investigator***: Dr. Chuanlan Liu Rank: Assistant Professor
*PI must be an LSU Faculty member

Dept.: Human Ecology Ph: 225 578 2400 E-Mail: clliu@lsu.edu

2) **All Co Investigators**: please include department, rank, phone, and e-mail for each

Caroline Makena Kobia
Rank: Student
Department: Human Ecology
Phone: 225 754 2347
Email: ckobial@lsu.edu

3) **Project Title**: Examining the Influence of Virtual World Fashion on Teen Girls Real Fashion Behavior

4) **Proposed Start Date**: Jan 24, 10 5) **Proposed Duration Months**: 3 months

6) **Number of Subjects Requested**: 200 7) **LSU Proposal#**: _____

8) **Funding Sought From**: _____

IRB# <u>3022</u>	LSU Proposal# _____
<input checked="" type="checkbox"/> Full	<input type="checkbox"/> Expedited
<input type="checkbox"/> Complete Application	<input type="checkbox"/> Human Subjects Training

Study Approved By:	Dr. Robert C. Mathews, Chairman
Institutional Review Board	Louisiana State University
203 B-1 David Boyd Hall	Baton Rouge, LA 70803
225-578-8692	www.lsu.edu/irb
Approval Expires:	<u>12-1-2010</u>

Parental Permission Form

Study Approved By:
Dr. Robert C. Mathews, Chairman
Institutional Review Board
Louisiana State University
305 401 Paul Boyd Hall
705-754-6802 www.lsu.edu/irb
Approval Expires: 12.1.2010

Project Title: Examining the Influence of virtual Fashion on Teen girls real world fashion Behavior.

Performance Site: Louisiana State University, 4-H camp venue.

Investigators: Caroline Kobia (225-754 2347) is available for any additional information regarding the study Monday- Friday 9a.m to 5p.m. or Chunlan Liu, Ph.D., Textile and Apparel Design and Merchandising School of Human Ecology (225 578-2400) Supervising Professor or Tanya Alleman Giroir M.S., Instructor LSU AgCenter 4-H Youth Development (twalker@agcenter.lsu.edu)

Purpose of the Study: The purpose of this research project is to examine the influence virtual fashion is having on teen girls and the implications that this pose on marketers.

Inclusion Criteria: Teens between the ages 12 to 19 years old that use the internet and are fashion conscious.

Exclusion Criteria: Teens under 12 years of age or teens who are not fashion conscious.

Description of the Study: The study will take place during the day of the camp and the teen will be asked to fill in the questionnaires. A focus group will be conducted with ten teens addressing the influence of virtual world fashion on teens.

Benefits: The study will generate valuable information regarding the concept of the virtual worlds in relation to fashion adding to the body of literature on the same. As a reward for their contribution to the study, teens earn the priority to choose fabric for their runway project or be invited to join the fashion board.

Risks: There are no known risks.

Right to Refuse: Participation is voluntary, and a teen will become part of the study only if both child and parent agree to the child's participation. At any time, either the subject may withdraw from the study or the subject's parent may withdraw the subject from the study without penalty or loss of any benefit to which they might otherwise be entitled.

Privacy: Results of the study may be published, but no names or identifying information will be included for publication. The investigator is the only individual with access to this information and will maintain anonymity of each subject.

Financial Information: There is no cost for participation in the study.

Signatures: The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigator. If I have questions about subjects' rights or other concerns, I can contact Robert C. Mathews, Chairman, Institutional Review Board, (225) 578-8692, irb@lsu.edu, and www.lsu.edu/irb. I will allow my child to participate in the study described above and acknowledge the investigator's obligation to provide me with a signed copy of this consent form.

Parent's Signature: _____ Date: _____

The parent/guardian has indicated to me that he/she is unable to read. I certify that I have read this consent form to the parent/guardian and explained that by completing the signature line above he/she has given permission for the child to participate in the study.

Signature of Reader: _____ Date: _____

Assent Form

I, _____, agree to be in the study examining the influence of virtual fashion on teen girl's real world fashion. I will answer questions thoroughly and to the best of my ability to provide needed information towards the study. Answers, comments, and remarks will all be truthful and appropriate to the specific subject at hand. I can decide to stop being in the study at any time without consequences.

Child's Signature: _____ Age: _____ Date: _____

Witness: _____ Date: _____

Study Approved By:
Dr. Robert C. McInerney, Chairman
Institutional Review Board
Louisiana State University
303 1A-1 David Boyd Hall
225-578-6000 / rmcin@lsu.edu/irb
Approval Expires: 12/1/2010

APPENDIX B: SURVEY QUESTIONS



LOUISIANA STATE UNIVERSITY

Dear Respondents,

I am a master's student majoring in fashion merchandising at Louisiana State University. I am conducting thesis research to better understand teen fashion behavior in the virtual world and the real world. Your input is very important to my study.

You are invited to participate in this study. It only takes about 15 minutes to complete this survey. There is no right or wrong answer to the questions. Your answer will be kept confidential and anonymous. You can work at your own pace. You may stop filling out this survey at any time you feel uncomfortable. By filling out this survey, you are agreeing to participate in this study.

Thank you in advance for your participation. If you have any questions, please feel free to ask the researchers. We would be glad to assist you. In addition, if you have any questions concerning your rights as a research subject, you may contact the Louisiana State University Institution Review Board at (225) 578 8692.

Researchers:

Caroline Kobia M.S., Graduate Student
Chuanlan Liu, Ph. D., Assistant Professor
Tanya Alleman Giroir M.S., Instructor

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REMEMBER: For all questions fashion products refers to clothing only.

PART I: Tell us about you.

1. Some individuals are completely involved with fashion clothing, attached to it and absorbed by it. Please tell us how involved you are with fashion clothing. Simply indicate to what extent you agree with the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Fashion clothing means a lot to me	1	2	3	4	5
Fashion clothing is a major part of my life	1	2	3	4	5
I consider fashion clothing to be a central part of my life	1	2	3	4	5
I think about fashion clothing a lot	1	2	3	4	5
I am interested in fashion clothing	1	2	3	4	5
Fashion clothing is important to me	1	2	3	4	5
I am very much involved in/with fashion clothing	1	2	3	4	5

2. Based on your experiences in buying and wearing fashion clothes, please indicate how you agree with each of the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
In general, I am among the first in my circle of friends to buy a new fashion item when it appears on the market	1	2	3	4	5
If I heard that a new fashion style was available in the store, I would be interested enough to buy it	1	2	3	4	5
Compared to my friends I own fewer new fashion items	1	2	3	4	5
In general, I am the last in my circle of friends to know the brand names of the latest fashions and styles	1	2	3	4	5
I know the names of new fashion designers	1	2	3	4	5

before other people do					
I regularly purchase different clothes or accessories to create a different look	1	2	3	4	5
3. Please indicate to what extent you agree with the following statements with regard to your interactions with peers.					
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I often seek out the advice of my friends regarding what fashion clothes to buy	1	2	3	4	5
I spend a lot of time talking with my friends about fashion	1	2	3	4	5
My friends give me advice on what kind of fashion clothing to buy	1	2	3	4	5
I rarely purchase the latest fashion styles until I am sure my friends accept them	1	2	3	4	5
It is important that others like the fashion clothing and brands I buy	1	2	3	4	5
When buying fashion products, I generally purchase what I think others will also like	1	2	3	4	5
I like to know what fashion brands and products make a good impression on others	1	2	3	4	5
I achieve a sense of belonging by purchasing the same fashion products as my peers	1	2	3	4	5
To make sure I buy the right fashion product or brand, I often observe what my peers are buying and using	1	2	3	4	5
If I have little experience with a fashion product, I often ask my friends about it	1	2	3	4	5

PART II: We would like to know your online shopping behavior for fashion products.

4. Have you ever bought clothing for yourself online?

☐ Yes ☐ No

5. If you answered No in the above question, skip to part 111. If you answered yes, how often do you purchase clothing on-line?

Never Rarely Sometimes Quite Often Very Often
1 2 3 4 5

6. How often do you search online to get clothing product information?

Never Rarely Sometimes Quite Often Very Often
1 2 3 4 5

7. How likely are you to be influenced by what you read, hear or see about fashion clothing while you are online?

Very Likely Unlikely Undecided Likely Very Likely
1 2 3 4 5

PART III: Tell us about your experience with stardoll.com.

8. How much time did you spend surfing stardoll.com?

30 minutes or less 1 hour 2 hours 3 hours More than 3 Hours
0 1 2 3 4

9. Please tell us to what extent you agree with the following statements about your experience with stardoll.com.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Surfing stardoll.com is entertaining to me	1	2	3	4	5
This virtual fashion world is fun to use	1	2	3	4	5
I feel excited when surfing stardoll.com	1	2	3	4	5
I enjoy surfing stardoll.com	1	2	3	4	5
This virtual fashion world is cool	1	2	3	4	5

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I can freely meet people with my interests if I want	1	2	3	4	5
I can make new friends at stardoll.com if I want	1	2	3	4	5
I enjoy joining some of the clubs.	1	2	3	4	5
I feel free to express myself when visiting stardoll.com	1	2	3	4	5
I enjoy dressing my avatar freely	1	2	3	4	5
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Stardoll.com gives me quick and easy access to large volumes of fashion information	1	2	3	4	5
Overall, I learn a lot about fashion from visiting stardoll.com	1	2	3	4	5
I can learn about things happening in the fashion world from visiting stardoll.com	1	2	3	4	5
Overall, information obtained from stardoll.com is very useful	1	2	3	4	5
Acquiring fashion information in stardoll.com is inexpensive	1	2	3	4	5

PART IV: Tell us about your general overview towards virtual fashion worlds, in our case stardoll.com

10. In this question we are going to ask you about fashion elements in stardoll.com. Please let us know most accurately your opinion by indicating to what extent you agree or disagree with the following statements.

Stardoll.com	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
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	e				
Lets me know I am in fashion	1	2	3	4	5
Lets me know who is trendy	1	2	3	4	5
Point out what I need to wear to be cool	1	2	3	4	5
Lets me know how I should wear my clothes	1	2	3	4	5
Help me develop my style	1	2	3	4	5
Keep me up-to-date on how I should dress	1	2	3	4	5
Reflect my style	1	2	3	4	5

BoringNeutralInteresting
123

Very Likely	Unlikely	Undecided	Likely	Very Likely
1	2	3	4	5

Very Likely	Unlikely	Undecided	Likely	Very Likely
1	2	3	4	5

Very Likely	Unlikely	Undecided	Likely	Very Likely
1	2	3	4	5

Very Likely 1 Unlikely 2 Undecided 3 Likely 4 Very Likely 5

16. Will you dress like your avatar in real life?

Very Likely 1 Unlikely 2 Undecided 3 Likely 4 Very Likely 5

17. How likely will you shop in the real stores you see in the virtual fashion world?

Very Likely 1 Unlikely 2 Undecided 3 Likely 4 Very Likely 5

18. How likely will you try some of the style tips obtained from stardoll.com?

Very Likely 1 Unlikely 2 Undecided 3 Likely 4 Very Likely 5

19. Please share your experience with Stardoll.com. When you create your avatar in stardoll.com or any other virtual world, to what extent does your avatar represent the following characters?

	Not at all	A little	Somewhat	Much like	Very much like
Real self	1	2	3	4	5
Ideal self	1	2	3	4	5
Your idol	1	2	3	4	5
Someone else	1	2	3	4	5

20. Do you visit other virtual worlds?

☐ Yes ☐ No

21. If you answered No in the above question skip to the next question. If you answered yes, check all the sites you visit.

- ☐ www.secondlife.com
- ☐ www.girlsense.com
- ☐ www.barbiegirls.com
- ☐ www.fashionworldgames.com
- ☐ www.rainbow.com
- ☐ Other

PART V

22. We would like to know where you get ideas on what styles/fashion you want to buy and wear. Please rate the degree you use the following sources for ideas on what styles/fashion you want to buy and wear.

	Never	Hardly	Sometimes	Usually	Always
Fashion magazines	1	2	3	4	5
Fashion clothing section in the newspaper	1	2	3	4	5
Television	1	2	3	4	5
Online fashion store websites	1	2	3	4	5
Peers	1	2	3	4	5
Movies	1	2	3	4	5
Celebrities	1	2	3	4	5
What I already own and like	1	2	3	4	5
Store displays (e.g., shopping mall, fashion boutiques)	1	2	3	4	5
Social networking sites (e.g. Face book)	1	2	3	4	5
Virtual Fashion worlds (e.g. stardoll.com, secondlife.com)	1	2	3	4	5
Retail Catalogs (e.g., Macy's, JCPenny)	1	2	3	4	5

23. Please indicate:

On average, how much money do you spend on buying clothes or fashion accessories every semester?

Less than \$ 50

\$50-\$100

\$100-\$200

more than \$250

Your age:

Your gender: ☐

Male

☐

Female

Your email address if you want to participate in the draw for gift cards

THANK YOU VERY MUCH FOR COMPLETING THIS SURVEY

APPENDIX C: FOCUS GROUP INTERVIEW QUESTIONS

1. What drives you to the virtual world?
2. What are some of the virtual worlds that you visit?
3. Do the virtual world sites help you in any way with your fashion?
4. How much time do you spend?
5. What do you like best about the virtual worlds?
6. What is it that you don't like about virtual world?
7. When you create your avatar do you create your real self or someone different?
8. Are there any similarities with virtual fashion and real fashion?
9. If the styles offered in virtual world were found in real life would you buy similar styles?
10. How can we apply what we see in the virtual world into the real world fashion?
11. Any contributions?
12. Anything new learnt from the interview?

VITA

Caroline Makena Kobia was born in August 1977, in Likipia District, Republic of Kenya. She finished her undergraduate studies at Moi University, Kenya, in December 2000 where she earned a Bachelor of Education in Home Economics degree. Later, in 2003 she earned a Higher Diploma in Guidance and Psychological Counselling from Kenya Institute of Professional Counseling. In August 2008, she came to Louisiana State University to pursue graduate studies in fashion merchandising. She is currently a candidate for the degree of Master of Science in fashion merchandising, which will be awarded in May 2011. After receiving her Master of Science degree, Caroline plans on building a career as a college professor in the field of textiles, apparel design, and merchandising.