Comparing fashion innovators and non-innovators' characteristics and perceptions of online shopping: the case of Taiwan

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Comparing fashion innovators and non-innovators’ characteristics and perceptions of online shopping: the case of Taiwan

by

Yitung Lo

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Major: Journalism and Mass Communication

Program of Study Committee:
Daniela V. Dimitrova (Major Professor)
Sela Sar
Ann Marie Fiore

Iowa State University
Ames, Iowa
2008

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>ABSTRACT</th>
<th>CHAPTER 1: INTRODUCTION AND STATEMENT OF THE PROBLEM</th>
<th>CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK</th>
<th>CHAPTER 3. METHODOLOGY</th>
<th>CHAPTER 4. RESULTS</th>
<th>CHAPTER 5. DISCUSSION AND CONCLUSIONS</th>
<th>APPENDIX A. CONSENT FORM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>........................................................................</td>
<td>........................................................................</td>
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Abstract

This study examined innovators and non-innovators in Taiwan. The study uses diffusion of innovations theory as theoretical framework, considering purchasing fashion items online as an innovation. Fashion innovators are a vital consumer group not only because their early purchase brings positive cash flow but also because their word-of-mouth legitimizations of new fashions.

This study compared fashion innovators and non-innovators’ demographic characteristics, psychographic characteristics, media usage, online shopping behavior, and perceptions toward shopping fashion items online. The data used in this study were gathered by surveying undergraduate students in Taipei, Taiwan, and 318 questionnaires were used in statistical analysis.

The results indicated that psychographic characteristics may be better indicators than demographic characteristics to identify fashion innovators. Fashion innovators perceived themselves as more delicate, dominating, indulgent, contemporary, youthful, liberal, complex, colorful, and vain. Moreover, their buying impulsiveness was higher than that of non-innovators. Fashion innovators use online and offline media as well as personal communication more frequently to gather fashion information. They purchase online more frequently than non-innovators, and they perceive shopping for fashion items online as more advantageous, easier to use, easier to try and more observable. The differences between fashion innovators and non-innovators have important implications for both academic and fashion industry.
CHAPTER 1: INTRODUCTION AND STATEMENT OF THE PROBLEM

In the United States, the online apparel sales are growing and thriving. ZD Net Research (2006) indicated that online apparel sales growth rates exceeded 40% in 2005; moreover, selling apparel online possibly has the most potential in e-commerce business (Smith, 2006). Based on eMarketer’s survey (2006), the largest online retail sales categories in 2005 were apparel, computer hardware/software, and home products. Web merchants, responding to an Internet Retailer survey in May 2005, also suggested that apparel and accessories will be leading items in the United States over the next five years (Grau, 2006).

According to Internet Retailer’s top 500 guide (2006), 22% of top 500 online retailers are under the apparel/accessory category, and it takes the largest percentage among other categories (Computers/Electronics=11%, Specialty stores=11%, Housewares=11%, Sporting goods=8%, Books/CDs/DVDs=6%, Food= 5%, Department stores=5%, Toys=4%, Home improvement=4%, Health/Beauty=3%). Furthermore, in the top 100 online retailers, one-fifth of them are apparel/accessory online retailers, such as GAP, J-Crew, and L.L. Bean. Most of the best-performing apparel online retailers are multi-channel retailers, which means they have not only online but also physical channel(s) for their customers. Almost all of the top performing apparel/accessory retailers’ online sales have increased, compared to their last year’s sales (Internet Retailer, 2006).

In Taiwan, online shopping has burgeoned. According to A.C. Nielsen’s latest survey of Internet trends for the country (2005), there were 2.1 million online customers in June 2004, a jump from only 0.73 million in the first half of 2002. The category most females purchase, “cosmetic/apparel/boutique,” has now surpassed the former best-seller category, “travel/ticket service” (Lee, 2004). This indicates the growing importance for online fashion
shopping in the Taiwanese market.

According to Taylor Nelson Sofres global eCommerce report (2002), Taiwan has the highest number of online shoppers who buy jewelry/fashion online, which shows a large potential market for selling fashion items online in this country (see Figure 1).

![Figure 1. Percentage of online shoppers in a specific country who buy jewelry/fashion accessories category online](source)

**Source:** Taylor Nelson Sofres Global eCommerce Report (2002)

With a continually growing online shopping population and purchase preferences in Taiwan shown in Figure 1, we find that selling fashion items online has become a thriving industry and there will be more potential customers in the future. As such, it is important to determine the profile of Taiwanese online shoppers, so the apparel online retailers can attract and communicate effectively with their main customers. Jordan (2003) also points out that online merchants today continue their research to seek new ways to gain shoppers’ attention, including developing technological enhancements to the e-commerce experience. Some websites even enable their customers to design their own virtual models. Most of these enhancements aim to balance common complaints about online shopping, such as customer feedback—“they cannot try on and feel the product’s texture” (p. 249).
In the United States, almost every fashion apparel store has its official website that provides consumers with basic information, such as store locations, brand introductions, sales promotions, and more relevant to this study, an online shopping service and communication channel (Siddiqui et al., 2003; Goldsmith & Flynn, 2005). Further, Jang and Burns (2004) categorized the apparel online retailers into four groups: 1) virtual e-retailers (do not own or lease “bricks-and-mortar” stores or warehouses but conduct nearly all business on the Web), 2) bricks-and-mortar retailers (have substantial stores), 3) catalog companies (sell through catalogs, but use the Web to expand their businesses), and 4) multi-channel retailers (provide not only online but offline sales channels).

In Asia, the majority of the online apparel selling websites are part of an online department store rather than independent apparel retailer or independent brand, for example, Yahoo! Shopping and PC home shopping online. They are the largest online department stores in Taiwan, which carry several fashion apparel brands. Most apparel companies use their official websites as communication and promotion tools rather than a shopping channel.

Of all the customer categories online fashion retailers target, perhaps the most important are the “innovators” in the fashion market (Phau & Lo, 2004). The “innovators” are one category of innovation adopters characterized by their very early adoption of new technologies and new practices. In this case, fashion innovators are those who buy and wear the latest trends in fashion (Workman & Studak, 2005).

To understand these innovators, diffusion theory is instructive. Rogers (1995), in describing the diffusion of innovations, delineates five innovation adopter categories. He called the first 2.5% of individuals in a system to adopt an innovation “innovators,” next to
adopt are the 13.5% labeled “early adopters”, followed by earlier majority (34%), late majority (34%), and laggards (16%)(Rogers, 1995). Phau and Lo (2004) suggest that “fashion innovators” extends to early adopters as well, so in this study, the percent of innovators and early adopters—16%—is a striking percentage of the fashion market.

Goldsmith and Flynn (1992) described early adopters as new brand triers who play an important role in the life cycle of a new fashion product. Sales to these early buyers represent a positive cash flow for the company eager to recover expenses accrued through new product development. Successful sales to innovators may result in market leadership, making it difficult for others to easily enter the market. Most important of all, the earliest buyers help promote the product to subsequent buyers, spreading information by word-of-mouth and legitimizing the product to other consumers (Goldsmith et al., 1992). They also found that fashion innovators can be identified through their intense interest in new fashion, exposure to fashion-relevant media, and heavier spending on new fashion products. Workman and Studak (2005) further portray this group as “less loyal to known clothing brands and more likely to preplan shopping trips” (p. 3). They tend to search for more fashion-related news, have more confidence in themselves, due to their knowledge of the trends; thus, external stimuli (e.g., sales person, promotion) have less influence on them. They choose the product by whether it reflects their ideas, values, and self-identity. If the product and shopping environment are congruent with their inner values, they will buy the product without hesitation (Phau et al., 2004).

Considering the growing market of e-commerce, Taylor Nelson global eCommerce report (2002) stated there is considerable growth in Internet usage in global market. Based on the latest report, 38.7% of Internet users were from Asia, 26.4% were from Europe, and
18.0% were from North America (*Internet World Stats*, 2008). Taiwan is one of the countries in Asia with the highest Internet penetration rate (67.4%), the percentage of Internet users compared to the whole population (*Internet World Stats*, 2008). Not only surfing on the Internet, Taiwanese online users also like to shop online. According to AC Nielsen (2005), Taiwan and South Korea rank highest in online users who have made purchases online. At least 90% of the respondents reported they have made purchases online, at least six out of ten have done so by September 2005. Moreover, looking at the Internet penetration rate around the world (*Internet World Stats*, 2007), Taiwan was ranked at 21, with over 63% of population being Internet users, in 2002, the penetration rate was just 40% (*Taylor Nelson Global eCommerce Report*, 2002). Other Asian countries in the top 30 list were Hong Kong, Singapore, Japan, and South Korea (see Table 1).

### Table 1. Highest Internet penetration rate countries

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<td>Iceland</td>
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<td>Luxembourg</td>
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<td>Taiwan</td>
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<td>2</td>
<td>Sweden</td>
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<td>Switzerland</td>
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<td>United Kingdom</td>
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<td>New Zealand</td>
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<td>Canada</td>
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<td>Japan</td>
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<td>Germany</td>
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<td>6</td>
<td>Australia</td>
<td>16</td>
<td>Korea, South</td>
<td>26</td>
<td>Barbados</td>
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<tr>
<td>7</td>
<td>United States</td>
<td>17</td>
<td>Singapore</td>
<td>27</td>
<td>Austria</td>
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<td>8</td>
<td>Falkland</td>
<td>18</td>
<td>Greenland</td>
<td>28</td>
<td>Guernsey &amp; Alder.</td>
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<td>Islands</td>
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<td>Denmark</td>
<td>19</td>
<td>Faroe Islands</td>
<td>29</td>
<td>Slovenia</td>
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<td>Bermuda</td>
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<td>Monaco</td>
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*Source: Internet World Stats (2007)*

Countries with high online purchase of jewelry and accessories shown in Figure 1 are found also in Table 1 under the high penetration category: Australia, South Korea, USA, and Taiwan. Research about fashion innovators’ online shopping behavior will be needed to
create an advantage for online retailers in Asia, especially for those high Internet penetration countries with considerable online market growth. However, only a few studies currently exist that focus on fashion innovators’ online shopping behavior in Asian cultures (Park, Burns, & Rabolt, 2007). Former studies relate to fashion innovators’ demographic, psychographic, or online shopping behaviors limited to Western Countries (Goldsmith et al, 1993; Phau et al., 2004). Thus, the results of these studies will not be directly applicable to other countries or other cultures’ systems. Study of the Taiwanese group will be helpful for online retailers to obtain a better sense of fashion innovators’ demographics, psychographic, and online shopping behaviors. Moreover, the results could be applied to other Asian countries, which share similar cultural values or the same language. Goldsmith and Flynn (2005) pointed out that research about fashion innovators was limited to U.S. consumers. They suggested that further study could avoid such limitations by examining different countries, which could show a clearer picture of fashion innovators in other cultures. Other studies of fashion innovators also proposed the need for relevant studies conducted in Non-Western countries so that data from other geographic areas could extend the findings (Goldsmith, Moore, & Beaudoin, 1999; Phau et al., 2004).

Thus, this study examines the online shopping preferences of fashion innovators in Taiwan, and tries to depict their demographic and psychographic characteristics. In doing so, online fashion apparel retailers can receive the attention of this special group of customers and trigger their online purchasing. The results of this study should be beneficial both to academics and business practitioners. For academics, theoretical scales regarding fashion innovativeness, self-images, impulsive buying, and online buying perceived attributes will be tested. Moreover, the profile of fashion innovators, and their online buying behavior will
be studied. For practitioners, the results provide information about this significant group of customers, and thus suggest some guidelines for improving marketing and communication strategies for online marketers. Hopefully, this will allow a fashion apparel website to provide a better online experience for their customers and improve their competitive position.
Chapter 2. Literature Review and Theoretical Framework

The purpose of this study is to determine the main characteristics and online shopping behaviors of an important audience segment in Taiwan—the fashion innovators. This chapter reviews background information of the fashion innovators demographic and psychographic characteristics, and diffusion innovation theory in e-commerce. The last part of the chapter proposes three research questions based on the relevant literature and previous studies. Table 2 contains the main components of this research.

Table 2. Main components of study

<table>
<thead>
<tr>
<th>Factors related to fashion innovativeness</th>
<th>Factors related to differences between fashion innovators and non-innovators</th>
<th>Online shopping pattern</th>
<th>Perceived attributes for shopping fashion items online</th>
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<td>Demographic characteristics</td>
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<td>*Product type</td>
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<td>*Intention</td>
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<td>*Observability</td>
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<td>* Unique self-concept</td>
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<td>* Buying impulsiveness</td>
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Fashion Innovators in Diffusion of Innovations Theory

In order to understand the needs of innovators in the fashion market, the concept of “difference between diverse individuals in a social system” (Rogers, 1995) could be applied to understand the differences between fashion innovators and non-fashion innovators. The propositions of the diffusion of innovations theory guide this study.
Rogers (1995) defined *diffusion* as “*the process by which an innovation is communicated through certain channels over time among the members of a social system*” (p. 10). Diffusion is one of the most commonly used theories in social science, education, health, and marketing, and is common in most communication theories or communications strategy and planning courses (Abbott & Yarbrough, 1999).

According to this theory, individuals in a social system adopt an innovation, not all at the same time, but in a sequence of stages over time. The theory classifies individuals in the social system into adopter categories. The categories include innovators, early adopters, early majority, late majority and laggards, on the basis of when they accept new ideas, technology, and practices. Phau et al. (2004) proposed that in the fashion market, fashion innovators are not just 2.5% of the population considered to be innovators in society. Innovators in the fashion world also include early adopters, which comprise another 13.5% of the population total. It can be surmised, therefore, that the total number of fashion innovators makes up 16% of the entire social system.

*Innovativeness* is a characteristic that Rogers (1995) defined as “*the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a system*” (p. 252). Goldsmith et al. (1992) defined *innovativeness* in the fashion market as “*the willingness to try and buy new fashion products*” (p. 44), and the *diffusion* in the fashion market refers to the *spread of new fashion within and across social systems* (Sproles, 1985; Workman et al., 2005). In the fashion world, the *fashion innovators* are the people who *learn and buy the latest trends* (Sproles, 1985; Goldsmith et al., 1993; Workman et al., 2005). They have profound influence on the rest of the population; they are the first triers, users and bring the word-of-mouth effect to the general public (Goldsmith et
According to Rogers (1995), there are some shared characteristics and values of each adopter category. The early adopters generally are opinion leaders, respected by their companions in the social system. In addition, they adopt the new idea to decrease uncertainty about it, and then pass on personal evaluations of the innovation to near-peers through their interpersonal networks.

More specifically, Rogers (1995) defines the early adopter’s (1) socioeconomic status, (2) personality values, and (3) communication behavior. First, the socioeconomic characteristics are age among earlier adopters and later adopters is not significantly different, earlier adopters are more educated, they have higher social status, and they are wealthier. Second, the early adopters’ personality variables are greater empathy, less dogmatic, greater ability to deal with abstraction, greater rationality, more favorable attitude toward change, better able to cope with uncertainty and risk, more confident for themselves, and they usually have higher aspirations. Finally, the adopter categories have a different communication behavior. The early adopters have more social participation, more cosmopolite, have greater exposure to mass media as well as interpersonal communication, seek information about innovation more actively, have greater knowledge of innovations, and finally, have a higher degree of opinion leadership (Rogers, 1995, pp. 269-274).

The diffusion model has been applied extensively to fashion adoption (Sproles, 1985; Phau et al., 2004; Park, et al., 2005). Looking at innovators in the fashion field more specifically, Martinez, Polo and Flazian (1998) claim that fashion innovators are more important than other adopter categories, because they are the first to try the new product and,
as a result, help increase the speed of the diffusion process, which is important to a fast paced industry such as fashion. According to Martinez et al. (1998), the adopters of an innovation could be classified by the point of time when they adopt that shows the degree of innovative behavior they present. It is important to understand the preference of different kinds of adopters. By doing so, it is possible to target markets for designing new products and to develop effective marketing strategies.

Demographically, past research indicated that fashion innovators were more likely to be female and younger (Goldsmith et al., 2004), and tended to have higher income (Goldsmith et al., 1992, 2004). Fashion innovators also typically read more fashion magazines and newspapers, as well as watch more fashion-related TV programs (Goldsmith et al., 1992).

However, prior studies reflect that using time of adoption and demographic characteristics (age, race, marital status, education level) were insufficient for identifying early adopter groups, and psychographic characteristics could be better indicators for identifying the fashion innovativeness (Phau et al, 2004; Goldsmith et al., 1996; Goldsmith et al., 1999).

**Psychographics of Fashion Innovators**

Sproles’ (1985) general fashion diffusion theory (Figure 2) focuses on fashion innovativeness, highlighted in the second stage of fashion leadership. This model outlines the stages in the fashion innovation adoption process and identifies the explanatory models that can account for adoption at each stage of the process. The fashion leadership stage is specifically explained, due to our research interests. The explanatory model says fashion leadership not only by the demographic aspects (sociological, communications), but also by psychological aspect (psychological), which means it is important to identify the
psychographic characteristics for completing the whole picture of fashion leadership (Sproles, 1985).

**Stages of the Fashion Process** | **Explanatory Model**
---|---
Invention and Introduction | Psychological (Individuality)
Increasing Social Visibility | Sociological (Trickle Down)
Conformity within and across Social Groups | Communications (Symbolic Communication Adoption and Diffusion)
Social Saturation | Economic (Scarcity, Conspicuous Consumption)
Decline and Obsolescence | Cultural (Social Conflict)

**Figure 2. General fashion diffusion process**

*Source: Sproles (1985)*

Fashion innovators in this study are the vital segment of the fashion market. They are the first to try and buy a new product and, as a result, help increase the speed of the diffusion process and bring a positive cash flow at the product’s initial stage. (Martinez et al., 1998; Goldsmith & Goldsmith, 2002; Goldsmith & Flynn, 2004; Phau & Lo, 2004; Goldsmith & Stith, 1992). However, studies indicate that unlike most diffusion situations, it is difficult to distinguish fashion innovators simply by their demographic characteristics. Goldsmith and Flynn (1992) found that fashion innovators can be identified through their intense interest in new fashions, their exposure to fashion-relevant media, and their heavier spending on new fashion products. Workman et al. (2000) described media usage of fashion innovators as follows: they read more magazines, especially fashion magazines and they “gather the information through intensive exposure to variety of media sources or sharing
knowledge about clothing accumulated from media sources or interpersonal contact” (p. 229). Martinez et al. (1998) also stated that in addition to demographic and socio-economic variables, more qualitative variables have been used to distinguish between the different adopter categories of an innovation. These variables include social values and psychographics of fashion innovators. Several studies portray fashion innovators by their psychographics rather than demographics; psychographics includes their self-perceptions and self-confidence (Goldsmith et al., 1992, Goldsmith et al., 1996; Goldsmith et al., 1999; Goldsmith et al., 2002; Goldsmith et al., 2004).

Self-Concept

The notion of *self-concept* involves *ideas people hold toward themselves, and it motivates behavior by providing control and direction of human behavior* (Malhotra, 1988; Phau et al., 2004). Self-concept includes self-esteem; an individual’s feeling of self worth (Kaiser, 1990). It also includes self-image, the perceptions people have of what they are like (Goldsmith, 1999). Self-perception could be indicated by internal and external cues—clothes we wear usually are the external cues to express ourselves and for others’ observation (Kaiser, 1990).

Solomon (1983) proposed that products such as clothing, cosmetics, and jewelry are “taken to be indicators of the underlying characteristics of others and are used to infer or predict role behavior” (p. 322). It can be implied that individuals will choose clothing congruent with their inner values (self-esteem) and helps to enhance his or her presentation to others (self-image) (Kaiser, 1990). Furthermore, people often “like, elect and wear clothing that they feel reflects their self-concept” (Davis & Lennon, 1985, p. 177). In the field of fashion behavior, the study of self-concept is extremely important because clothing
and accessories not only express wearers’ inner values, but also help the formation of the self (Goldsmith et al., 1996; Goldsmith et al., 1999; Kaiser, 1990).

Marketers are interested in consumers’ self-image because many consumers choose products and brands that fit or match the images of themselves or even the ideal self (Goldsmith et al., 1999). Moreover, how consumers view brands and advertising is influenced by self-concept. Wernick (1991) stated that advertisings’ messages are perceived differently by consumers, due to their different criteria of value and sense of identity.

Goldsmith et al. (1996) reported the first findings about fashion leaders’ self-concept. They measured fashion leadership of 376 college students and their self-concept. The results showed that fashion leaders hold a unique self-concept; they considered themselves more excitable, indulgent, contemporary, formal, colorful, and vain than their followers.

A replicate study of fashion innovators and self-concept was conducted three years later to extend their findings (Goldsmith et al., 1999). They used a random sample of 281 adult women from the state of Florida. The results showed that fashion innovators do have a unique self-concept, different from non-fashion innovators: “the fashion innovators describe themselves uniquely as more comfortable, pleasant, contemporary, formal, colorful and vain than the later adopters” (Goldsmith, 1999, p. 7). This study proposes that fashion innovators are not limited to younger women, which means demographic characteristics are poor indicators of distinguishing fashion innovators and non-fashion innovators. Managerial implication is also provided. Goldsmith et al. (1999) suggested self-image of fashion innovators could be used to improve apparel marketers’ marketing strategies. For example, this finding could help marketers distinguish between long-lived trends and mere fads, and gain differential advantage to strengthen their brand equity. Goldsmith et al. (1999) stated
that “new styles which are matching with fashion innovators self-concept should form longer lasting trends than those appealing simply to the desire for novelty” (p. 12). Based on their suggestions, many ads, that convey the image as “sexy and cute,” should also reflect self-indulgent and vanity as well. This will make the images more appealing to fashion innovators and increase their acceptance (Goldsmith, 1999).

Phau et al. (2004) further assert that identifying innovators’ unique self-concepts is a logical first step in creating marketing strategies. They studied the relationships between fashion innovativeness and self-concept. Based on 225 respondents at a Western Australia mall intercept, fashion innovators are characterized as “excitable, indulgent, contemporary, liberal, colorful and pleasant” (p. 406), only two characteristics were found to be identical (contemporary and colorful) compared to Goldsmith et al.’s (1999) study. The explanation for different results could be due to cultural differences, the values and identities within different societies have significant influence on the self-image of fashion innovators (Phau et al., 2004).

Fashion innovators possess distinct values that prompt clothing marketers and fashion designers to customize their products to suit the needs and desires of this vital segment. For online retailers, it is a challenge to attract and maintain this distinct target. Since clothing is important to one’s self-image, “fashion marketers should make use of the distinct variables of self-concept relevant to innovators. This can better position products in advertisements that might reflect lifestyle and values similar to fashion innovators’ perception” (Phau et al., 2004, p. 408).

**Buying impulsiveness**

Rook and Fisher (1995) defined *buying impulsiveness* as “a consumer’s tendency to
buy spontaneously, unreflectively, immediately, and kinetically” (p. 306). In the general buying impulsiveness theory, the consumer will be less likely to buy impulsively, due to social visibility. If the buying channel provides relative social anonymity, such as in “telemarketing, Internet, and direct mail ordering” (p. 312), the consumer will feel less socially exposed and lower their hesitation about acting impulsively (Rook & Fisher, 1995). Thus, the Internet can be regarded as a channel for “impulsive buying,” due to its social anonymity.

Online apparel websites should place a high emphasis on attracting the early adopter group. Dittmar (1995) predicted that highly impulsive buyers may be influenced by emotional attraction (an irrational judgment) rather than by price (a rational judgment). When they see images or models that reflect their ideal, impulsive buying will likely be triggered. The Internet provides unique opportunities for fashion innovators to shop online conveniently and quickly. As long as the images and messages conveyed on the websites fit with consumers’ self value, buying impulsively is likely to happen. This is why understanding consumers’ psychographic characteristics is very important for online marketers, who want to attract the early consumer group (Goldsmith, Flynn, & More, 1996, Goldsmith, Moore, & Beaudoin, 1999). Moreover, by understanding the buying impulsiveness of fashion innovators, online marketers can understand if the Internet could be an effective channel to this very important consumer group of impulsive buyers (Phau et al., 2004).

In summary, psychographically, fashion innovators describe themselves as more comfortable, pleasant, contemporary, colorful, and vain compared to non-fashion innovators (Phau et al., 2004; Goldsmith et al., 1999; Goldsmith et al., 1996). They can be identified
through their intense interest in new fashions, their exposure to fashion-relevant media, and
distinct self-concepts. They also like to share information and product evaluation related to
fashion through interpersonal communications. Moreover, the self-image of fashion
innovators can be influenced by different cultural contexts (Phau et al., 2004). By
understanding the characteristics of fashion innovators, apparel marketers cannot only better
distinguish a fad from a long-lasting trend, but also create more appealing advertising
messages to reach fashion innovators (Goldsmith et al., 1996).

**Perceived Attributes of Online Shopping**

Rogers’ diffusion of innovation theory (1995) can be applied to innovations such as
Internet shopping. He identified five stages that consumers experience when deciding to
adopt or decline an innovation. In the first stage—knowledge—an individual develops an
understanding of an innovation. During the second stage—persuasion—individuals
compose positive or negative attitudes toward the innovation, based on the knowledge he or
she developed during the first stage and continued experience with the innovation. In the
third stage—decision—individuals make decisions whether to adopt or reject the innovation
based on their perceptions. In the forth stage—implementation—individuals finally decide
to adopt or reject the innovation. If adopting, they will become frequent users of this
innovation. In the final stage—confirmation—individuals reconsider the innovation based
on experience, and decide whether he or she will continue to use the innovation in the future
(Rogers, 1995).

This research focuses on the second stage of Rogers’ (1995) model—persuasion. This
stage is important to assess because the perception towards the innovation is crucial for
making reject or adopt decisions. Rogers specifically identified five perceived attributes of
an innovation that influence its rate of adoption within a social system during the persuasion stage. He stated they are not attributes as classified by experts, but are the receivers’ perceptions of the attributes of an innovation. These are perceived attributes of an innovation—relative advantage, compatibility, complexity, trialability, and observability (Rogers, 1995, p. 208). Explanations of the five attributes follow.

(1) Relative advantage: the degree to which an innovation is perceived as being better than the idea it replaced. This attributes has been investigated in several online shopping studies. The most salient advantages of online shopping are time saving and convenience (Kim & Stoel, 2005; Li, 2001; Eastin, 2002; Seock & Norton, 2007). Besides, an engaging and interesting experience is expected by consumers, too (Siddiqui, O'Malley, McColl, & Birtwistle, 2003).

(2) Compatibility: the degree to which an innovation is perceived as consistent with existing values, past experiences, and the need for the innovation. In this case, a past experience similar to online shopping could affect online purchasing. Goldsmith et al. (2005) state that buying on the Internet was highly related to buying by catalog, which means online shoppers, who already had experience of buying without inspection, are more likely to accept shopping online.

(3) Complexity: the degree to which an innovation is perceived as relatively difficult to understand and use. Shopping online could be easy for some people, but extremely difficult for others. There are several studies that show the system should provide the online shopper with a simple and clear environment to trigger their purchasing (Park & Stoel, 2002; Park, Lennon, & Stoel, 2005).

(4) Trialability: the degree to which an innovation may be experimented with on a limited
basis. The perception of risk-taking could be considered under this attribute, the quality of merchandise, inspection before purchasing, and the transaction security could all affect consumers’ willingness to try shopping online (Smith & Rupp, 2003; Siddiqui et al., 2003).

(5) Observability: the degree to which a user can observe others’ results of adopting the innovation. Ensuring validity of other customers’ experiences is critical for potential online shoppers to observe results from other customers’ purchases. Thus, website interactivity, such as blogs and product reviews, could be important to influence consumers’ perceptions. The willingness of trying shopping online would be definitely higher if there are legitimizations available from other users who had experiences of online purchasing (Eastin, 2002).

Johnson, Lennon, and Damhorst (2003) applied the five perceived attributes model to assess small community consumers’ use of the Internet for product purchase. The results, based on 2,198 small community consumers in the United States, indicate that small community consumers, who purchased online, were more likely than non-purchasers to perceive online shopping as being relatively advantageous; more compatible with their values, beliefs, and past experience; less complex; can be tried more easily; and more observable (Johnson et al., 2003). This finding supports components of diffusion theory.

Lu and Rucker (2006) compared college students in the United States and China, and their perceptions of apparel online purchasing. The results indicate that the degree of preference for shopping online is positively related to the degree of convenience orientation and Internet connectivity in the Chinese sample. Thus, convenience orientation should be a major theme in the online retailers’ business models in China (Lu et al., 2006).

Eastin (2002) investigates the adoption of four e-commerce activities by Internet users:
(1) online shopping, (2) online banking, (3) online investing, and (4) electronic payment. Under the diffusion of innovations model, this study integrates traditional and current concepts of adoption. The study was informed by 274 online surveys in the United States. The results indicate that the adoption of online shopping is best predicted by “self-efficacy (complexity), followed by perceived financial benefits (relative advantage), previous adoption of telephone shopping (compatibility), and perceived convenience (relative advantage)” (Eastin, 2002, p. 261). It was also determined that when users decide to adopt one of the online activities, they tend to adopt another.

In summary, the perceived attributes of online shopping could be good indicator of (1) distinguishing the online purchasers and non purchasers, and (2) reasons that impede or facilitate consumers to make decisions to adopt online purchasing.

**E-commerce and the Fashion Industry in Taiwan**

Taiwan is one of Asia’s most developed Internet communities. This rapid growth was “largely brought about by private investment and government promotion of Taiwan as a regional operations center (ROC). Taiwan’s B2C (business to customer) e-business is undergoing a natural transformation from mail catalog ordering and TV shopping to e-commerce” (Trappey & Trappey, 2001, p. 203). In Taiwan, 4.32 million households have access to the Internet, and 3.46 million have broadband connections at the end of 2004 (Kao, 2005).

According to the Taiwan Chain Store Almanac, over 17 million credit cards have been issued and more than 10 million cards are in circulation for a population of 22 million. Moreover, according to Visa International, the number of platinum Visa cards issued by June 2004 in the Pacific region reached 5.7 million— more than 4 million of these were
issued to Taiwanese (Kao, 2005). These card holders are accessing the Internet and are quickly accepting online retailing as a viable alternative to shopping in brick-and-mortar stores (Trappey & Trappey, 2001).

A survey by Foreseeing Innovative New Digiservices (FIND) (2004) reported that the B2C e-commerce market in Taiwan jumped 57.2% to NT$ 34.72 billion from 2003 to 2004. The survey showed that more women (54%) than men (46%) shop online. This indicated there were more online stores targeting women in Taiwan, such as fashion items online retail stores. In terms of age groups, only a few of the online consumers were older than 40, most of them were 20-39 years old. The majority of online products in Taiwan were beauty products, daily household products and electronic devices (computers and communication products); the beauty products sold over 10% compared to the whole online selling. Although credit card has become the most popular payment method, which accounts for 30% of transactions, 33% of the consumers had concerns about online payment security. Kao (2005) stated that women’s apparel and beauty products were major categories of online shopping, indicating that women were indeed big buyers on the web.

Another survey of Taiwanese online users’ lifestyles conducted by YAM (2000) found that 15.3% of the population could be categorized as “fashion seekers,” whose characteristics match those of fashion innovators. This group was mostly composed of 16-26 year old females. They liked to shop at malls and boutiques, and they spend more money on cosmetics and clothes because they socialize frequently. Rather fancy-free with their income, they do not care about other people’s opinions. They think success is due to luck and they like to hang around with friends. Another characteristic of these fashion seekers was their low concern about rational judgment and willingness to buy new fashion
products. The online retailers could target these fashion innovators in Taiwan, since they not only contribute to positive cash flow for online companies, but also their socially active lifestyle brings the effect of word-of-mouth to their peers or fashion followers.

According to Chen (2005), online users fall under one of eight lifestyles listed in Table 3. The fashion extroverts have similar attitudes and lifestyles with fashion innovators.

### Table 3. Eight lifestyles of online users in Taiwan.

<table>
<thead>
<tr>
<th>Life Styles</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prudent</td>
<td>They seldom use Internet, seldom purchase online and are very anxious about online purchasing. They are either not buying online or bought items just a few times. They are not interested in online purchasing information.</td>
</tr>
<tr>
<td>Dream Walker</td>
<td>They only wonder through Internet. Although they perceive a conflict between self image and their personality, they do not like to purchase online and communicate to others</td>
</tr>
<tr>
<td>Heavy users seeking pleasure</td>
<td>They stay online all day long to kill time, but seldom communicate with others. They specialized in finding “unusual” channels to gain free resources. They love to spend their life downloading free pictures, MP3, movies, and software.</td>
</tr>
<tr>
<td>Octopus</td>
<td>Loving everything related to the Internet, their main goal in the online environment is to makes friends, play games, download soft wear and watch entertainment online. They are the main population for online purchases; they think online stores are more convenient and safer than brick-and-mortar store.</td>
</tr>
<tr>
<td>Fashion extroverts</td>
<td>They are extroverts who are fashionable, fashion eager and love stylish items. Although there are limitations to their income, they are still style and brand oriented. This group likes to chat online all the time and mainly single women and students. Over 77% of this group has Internet Messenger; only 6% are not using it.</td>
</tr>
<tr>
<td>Rational shoppers</td>
<td>They are rational and independent, actively searching information before making purchase decisions. They are not influenced by dazzle promotions. They know the benefit could be brought from Internet but will not over indulge in the cyber world.</td>
</tr>
<tr>
<td>Elitist</td>
<td>High SES, 36% use the Internet less than 3 hours a day and over 62% are not using Internet messenger. The only function of Internet for them is news reading, business information and data searching. The Internet for them is only a tool. They may use the Internet as a vehicle for financial transaction or purchase, but they keep away from online advertising and promotions.</td>
</tr>
<tr>
<td>Modern Learning buyers</td>
<td>Most of them spend less than 3 hours a day online. They are learning to adopt the new technology. Although they are not frequent online customers, their interest for shopping information makes them potential online customer in the future.</td>
</tr>
</tbody>
</table>

Source: Chen (2005)
There is little academic research about fashion innovators in Taiwan. Studies of fashion innovators and their online purchasing are especially rare. The goal of this study is not only to profile Taiwanese fashion innovators and document their online shopping, but also attempt to uncover any differences between them and non-fashion innovators.

Considering the foregoing literature, this study formulates the following research questions.

1. What are the differences in the characteristics of fashion innovators and non-innovators in Taiwan?
   
   1a. What are their demographic characteristics?
   
   1b. What are their psychographic characteristics?
   
   1c. What is their media usage behavior?

2. What are the characteristics of fashion innovators and non-fashion innovators online purchasing behavior?

   2a. How often do they make online purchase?

   2b. What kind of fashion items do they purchase online?

3. Are there any differences in the perceived attributes of online shopping between fashion innovators and non-fashion innovators in Taiwan?
Chapter 3. Methodology

The primary focus of this study is to profile fashion innovators in Taiwan and examine their fashion buying behavior online. Furthermore, this study seeks to determine the differences between fashion innovators and non-fashion innovators’ perceived attributes toward fashion items from online shopping.

Of all the different types of customers online retailers are targeting, perhaps the most important are the “innovators” in the fashion market. Fashion innovators are those who buy and wear the latest trends in fashion, and are early triers and heavy users of fashion products compared to other customers.

For these reasons, this study focuses on the characteristics of fashion innovators, profiling fashion innovators and their perceived attributes of online shopping. In doing so, online fashion apparel retailers can understand this consumer group better, get their attention, then create more effective strategies to maintain a business advantage.

Survey Design

This study used a directly administered survey to collect data. There were various procedures that can be used to conduct surveys. Newman and McNeil (1998) stated four basic ways to collect survey information—mail, directly administered, telephone, and interview. An example of a directly administered survey would be “administrating a survey to students in a classroom” (Newman et al., 1998, p. 27).

The directly administered survey’s construction, format, and procedures are the same as those used in the mail surveys. However, there is a major difference between those two methods, low return rate usually is not a problem with directly administered surveys.
Newman and McNeil (1998) further suggest that directly administered surveys should be preferred to mailed surveys, due to their advantages—lower cost, short data collection time, and high return rate. Moreover, they would allow the administrator to answer respondents’ questions and monitor the completion by respondents (Bourque & Fielder, 2003).

The main limitation of directly administered surveys is the lack of randomness in the sample, which limits generalizability. However, the main purpose of this study was to use the well-accepted scales—Domain Specific Innovativeness Scale (DSI) (Goldsmith & Hofacker, 1991), Self-Concept Scale (Malhotra, 1981), and Buying Impulsiveness Scale (Rook & Fisher, 1995) to profile fashion innovators in Taiwan. And furthermore, to portray the innovators’ media usage, online purchase behavior and perceived attributes. For the purpose of testing validity and reliability of established scales in other cultural contexts, the sample should represent minor limitations (Goldsmith et al., 1996).

**Procedure**

The questionnaire and consent form were first developed in English then translated into Chinese. A “back translation” (Green & White, 1976) technique was used to ensure the accuracy of translation. The first English version of the questionnaire and consent form were translated into Chinese by a bilingual scholar, then the Chinese version was back translated by a second bilingual scholar into English, after this, a second version of the English questionnaire was translated back into Chinese by a third bilingual scholar. The final Chinese version was determined, based on all three scholars’ agreements and discussion. This allowed the researcher to identify issues that might arise by noting the discrepancies between the original version of the survey instrument and the translated version (Green et al., 1976).
The researcher sent a description of study and research procedures to two selected universities at Taiwan for school evaluation, in order to obtain approval letters for conducting the survey. The approval letters from the two universities, finalized questionnaire and consent form in English and Chinese were then sent to Institutional Review Board (IRB) review.

The approved questionnaire and consent form were distributed and collected by the researcher in seven undergraduate classes. Before the questionnaire distribution, the researcher gave a short announcement to the students, briefly described the purpose of this research, and helped students understand the survey is voluntary and anonymous. During the survey time, students could raise a hand if they had any questions. Students who completed and returned the questionnaires were rewarded with a candy bar.

Participants

The data for this study came from two convenience samples of undergraduate students at two different universities at Taipei, Taiwan: (1) Department of Human Development and Family Study at National Taiwan Normal University and (2) Department of Advertising at Fu-Jen Catholic University. Students participants were from several different undergraduate classes, some of them were from other departments, so the majors were not limited to the two departments.

Although this was a convenience sample, student consumers are an appropriate group to study because they represent the younger market for online buying that marketers are interested in attracting in the long term (Goldsmith, 2001). Moreover, this younger generation is usually more familiar and interested in online buying, so the results will be useful for online retailers who target the younger consumer group. Considering the age
group and education level of targeted participants, it is likely to include a large portion of fashion innovators as well.

**Questionnaire Design**

This study replicates the scales used by Phau et al. (2004) to identify fashion innovators and their demographic and psychographic characteristics. Lee and Johnson’s (2002) scale of attitudes toward Internet shopping is adopted for online fashion items purchasing.

The questionnaire consists of structured questions with four parts. The first part contains questions and items as outlined in the Domain Specific Innovativeness Scale (DSI) for fashion. The Domain Specific Innovativeness Scale is a six-item Likert-type scale using a five-point response format that contains three positively worded and three negatively worded items. The scale was developed as a reliable and valid way to measure if the consumer is an innovator in a specific product field (Goldsmith et al., 1991; Goldsmith et al., 1996; Goldsmith et al., 1999; Phau et al., 2004). According to Rogers (1995), innovativeness is “the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a system” (p. 252). Many consumer researchers measure innovativeness following the time-of-adoption method. However, Goldsmith et al. (1992) pointed out that time-of-adoption methods cannot be used to predict future behaviors. Additionally, this method depends on the flawed memory of respondents, and interviewees may be biased by misconceptions of past actions or their own experiences. Goldsmith et al. (1992) recommended a “short, valid, reliable Likert-type scale, suitable for use in both self-administered (mail) questionnaires or in personal (face-to-face or telephone) interviews” (p. 45). Such a scale can be used before product launch because it does not focus on the product, but on consumers themselves and how they behave. Consequently,
Goldsmith and Hofacker (1991) developed the concept of consumer innovativeness expressed as prototypical behaviors and states. The unambiguous and easy to understand statements allow for self-report measures to be used to identify fashion innovators. The possible range of the summed scores on the scale ranged from 6-30. In terms of reliability of DSI, coefficient $\alpha$ is 0.8202 obtained by Phau et al. (2004), and is 0.86 obtained by Goldsmith et al. (2004). The purpose of this scale was to distinguish the fashion innovators from non-fashion innovators.

The second part of the questionnaire used the Self-Concept Scale developed by Malhotra (1981), which has been used to capture psychographic characteristics of fashion innovators (Goldsmith et al., 1996; Goldsmith et al., 1999; Phau et al., 2004). The Self-Concept Scale (Malhotra, 1981) is a semantic differential scale consisting of 15 bipolar adjective pairs with seven response points.

The third part of the questionnaire measures Internet consumption patterns among fashion innovators and non-fashion innovators. One open-ended question asked about the hours they spent online weekly. The remaining questions were related to respondents Internet usage, online purchase frequency, the fashion items they bought online, and online purchase intention.

The fourth part included five questions related to media use. A series of four questions asked the respondents how often they read fashion magazines or newspaper articles related to fashion, and contained one open-ended question asking them to provide the top three most frequency visited fashion-related websites.

The fifth part was adapted from Lee and Johnson’s (2002) scale of perceived attributes (Rogers, 1995) about Internet shopping. There were three attributes tested with this
scale—relative advantage, which has nine questions, and two of these questions can be categorized into the compatibility; ease (complexity), which has three questions, and observability, which has two questions. The average of coefficient $\alpha$ is over 0.75 obtained by Lee et al.’s (2002) study. The scale was expanded to include the attributes for triability. The questions were designed by this researcher. Respondents’ perceptions about online fashion items shopping were measured with a total of 17 questions. Responses to these questions were recorded on a five-point Likert-type scale, ranging from “strongly disagree” (1) to “strongly agree” (5).

The sixth part of questionnaire contained a Buying Impulsiveness Scale (Rook et al., 1991), a nine-item scale to let respondents self-report their buying styles. Questions were responded on a five-point Likert-type scale, ranging from “strongly disagree” (1) to “strongly agree” (5). The possible range of the sum score of this scale was 5-45. For reliability, Cronbach’s $\alpha$ was 0.88 in Rook and Fisher’s (1995) study, and 0.91 in Phau and Lo’s (2004) study, indicating good internal consistency for this scale. The main purpose of this scale was to provide another psychographic characteristic for fashion innovator and non-innovators.

The last part of the questionnaire asks for gender, age, major, and year in school. These assist this researcher to understand the demographic differences between fashion innovators and non-fashion innovators.
Chapter 4. Results

The volunteer sample of students was obtained from three different universities’ undergraduate classes. A total of 318 useable questionnaires were returned. The purpose of the study was to determine the differences between fashion innovators and non-innovators’ demographic characteristics, psychographic characteristics, online purchase behaviors, and five perceived attributes of shopping fashion items online.

Demographic characteristics

Of the 318 respondents, 244 (76.7%) were female, 69 (21.7%) were male, with 5 (1.6%) unreported. The subjects’ ages ranged from 18 to 33 years old ($m = 20.65$, $sd = 2.02$). One-hundred eight-six subjects (58.5%) were from the Advertising department, 74 (23.3%) were from the Human Development department, 23 (7.2%) were from the Tourism department, and 35 (11%) subjects were from Music, English, Art, Engineering and Business departments (See table3).

To describe fashion innovators and non-fashion innovators, the Domain Specific Innovativeness Scale (DSI) was applied. The summed score on the DSI scale ranged from 7 to 28 ($m = 17.8$, $sd = 3.7$). The population was normally distributed. Cronbach’s alpha was 0.7, indicating a good reliability for the six-item scale. For this study, 21 was chosen as the cut-off point for identification of innovators, similar to Goldsmith and Flynn’s (1992) study. In this study, the cut-off point consisting of 72 (23%) respondents who were determined as fashion innovators. This was split between 75% female and 23% male. In terms of gender between fashion innovators and non-innovators, the Chi-Square test indicated no significant difference between these two groups ($\chi^2 = 0.11$, $d.f. = 2$, n.s.).
The fashion innovators were mostly from the Advertising department (47%) and the Human Development department (19%). Based on the Chi-Squared test, no significant difference was found between innovators and non-fashion innovators ($\chi^2 = 12.14$, d. f. =20, n. s.).

In terms of income, 46% of the fashion innovators’ incomes were under 500 USD per month, 35% of them had incomes ranging from 500 to 900 USD, and 19% of them had incomes more than 901 USD per month. An independent-samples $t$ test compared the mean scores of the income level of fashion innovators to the mean score of income level of non-innovators ($t(308) = 1.89$, $p < .05$). The mean of the fashion innovators was significantly higher ($m = 1.76$, $sd = 0.10$) than the mean of non-innovators ($m = 1.58$, $sd = 0.04$). The bivariate correlation yielded similar results, with a statistically significant positive relationship between fashion innovativeness and income level ($r = 0.244$, $p = 0.01$).

The composition of fashion innovators was 26% freshman, 25% sophomore, 11% junior, and 38% senior or older (See table3). The Chi-Squared test indicated no significant differences between fashion innovators and non-innovators in terms of years in school ($\chi^2 = 2.63$, d. f. = 4, n. s.).
Table 3. Demographics of fashion innovators and non-innovators

<table>
<thead>
<tr>
<th></th>
<th>Innovators</th>
<th></th>
<th>Non-innovators</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>17</td>
<td>23.61</td>
<td>52</td>
<td>21.14</td>
</tr>
<tr>
<td>Female</td>
<td>54</td>
<td>75.00</td>
<td>190</td>
<td>77.24</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>1.38</td>
<td>4</td>
<td>1.63</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>100.00</td>
<td>246</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Major</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advertising</td>
<td>47</td>
<td>65.27</td>
<td>139</td>
<td>56.97</td>
</tr>
<tr>
<td>Human Development</td>
<td>19</td>
<td>26.39</td>
<td>55</td>
<td>22.54</td>
</tr>
<tr>
<td>Tourism</td>
<td>2</td>
<td>2.78</td>
<td>21</td>
<td>8.61</td>
</tr>
<tr>
<td>Music, Art, Engineering English, Business</td>
<td>4</td>
<td>5.56</td>
<td>25</td>
<td>10.25</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0.00</td>
<td>4</td>
<td>1.64</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>100.00</td>
<td>244</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>below 500</td>
<td>33</td>
<td>45.83</td>
<td>125</td>
<td>50.81</td>
</tr>
<tr>
<td>500-900</td>
<td>25</td>
<td>34.72</td>
<td>89</td>
<td>36.18</td>
</tr>
<tr>
<td>901-1300</td>
<td>13</td>
<td>18.06</td>
<td>23</td>
<td>9.35</td>
</tr>
<tr>
<td>1301-1700</td>
<td>0</td>
<td>0.00</td>
<td>1</td>
<td>0.40</td>
</tr>
<tr>
<td>1701-2100</td>
<td>1</td>
<td>1.39</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0.00</td>
<td>8</td>
<td>3.25</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>100.00</td>
<td>246</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Year in School</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshman</td>
<td>19</td>
<td>26.39</td>
<td>76</td>
<td>30.89</td>
</tr>
<tr>
<td>Sophomore</td>
<td>18</td>
<td>25.00</td>
<td>55</td>
<td>22.36</td>
</tr>
<tr>
<td>Junior</td>
<td>8</td>
<td>11.11</td>
<td>38</td>
<td>15.45</td>
</tr>
<tr>
<td>Senior</td>
<td>25</td>
<td>34.72</td>
<td>65</td>
<td>26.42</td>
</tr>
<tr>
<td>Graduate student</td>
<td>2</td>
<td>2.78</td>
<td>8</td>
<td>3.25</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0.00</td>
<td>4</td>
<td>1.63</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>100.00</td>
<td>246</td>
<td>100.00</td>
</tr>
</tbody>
</table>
Psychographic characteristics

Self-concept

Two statistical methods were employed to identify the differences between fashion innovators and non-innovators' unique self-image. They were independent-samples $t$ test and bivariate correlation.

Based on the independent-samples $t$ test, there were 9 out of 15 characteristics that innovators see themselves differently than non-innovators. They were more delicate, dominating, indulgent, contemporary, youthful, liberal, complex, colorful, and vain. Four of these characteristics were consistent with Phau et al.'s (2004) results (contemporary, liberal, indulgent, colorful), who also found that innovators were more excitable.

A bivariate correlation was used to examine the association between fashion innovativeness measured by the DSI scale (Goldsmith et al., 1992) and each of the 15 adjective-pairs for self concepts (Malhotra, 1981). The results showed that 9 out of 15 pairs characteristics were directly related with fashion innovativeness, which matched the independent-samples $t$ test’s analysis. There were five characteristics with significant relationships with innovativeness—indulgent, dominating, contemporary, colorful, and vain; four of these characteristics (indulgent, contemporary, colorful, vain) were identical with Goldsmith et al.’s (1996) study of college students. Moreover, compared with Goldsmith et al.’s (1999) study in the general public, the innovators both describe themselves as more contemporary, colorful, and vain.
Table 4. Means of unique-self image of fashion innovators and non-innovators

<table>
<thead>
<tr>
<th>Variable</th>
<th>Innovators</th>
<th>Non-Innovators</th>
<th>t</th>
<th>p-value (2-tailed)</th>
<th>r²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rugged</td>
<td>Delicate</td>
<td>4.89</td>
<td>4.59</td>
<td>2.02</td>
<td>0.04</td>
</tr>
<tr>
<td>Excitable</td>
<td>Calm</td>
<td>4.24</td>
<td>4.37</td>
<td>-0.77</td>
<td>0.44</td>
</tr>
<tr>
<td>Uncomfortable</td>
<td>Comfortable</td>
<td>5.18</td>
<td>5.17</td>
<td>0.05</td>
<td>0.96</td>
</tr>
<tr>
<td>Dominating</td>
<td>Submissive</td>
<td>3.70</td>
<td>4.12</td>
<td>-2.42</td>
<td>0.02</td>
</tr>
<tr>
<td>Thrifty</td>
<td>Indulgent</td>
<td>4.24</td>
<td>3.89</td>
<td>2.08</td>
<td>0.04</td>
</tr>
<tr>
<td>Pleasant</td>
<td>Unpleasant</td>
<td>3.11</td>
<td>3.26</td>
<td>-1.09</td>
<td>0.27</td>
</tr>
<tr>
<td>Contemporary</td>
<td>Noncontemporary</td>
<td>2.63</td>
<td>3.46</td>
<td>-2.41</td>
<td>0.02</td>
</tr>
<tr>
<td>Organized</td>
<td>Unorganized</td>
<td>3.79</td>
<td>3.71</td>
<td>0.44</td>
<td>0.66</td>
</tr>
<tr>
<td>Rational</td>
<td>Irrational</td>
<td>3.32</td>
<td>3.37</td>
<td>-0.30</td>
<td>0.76</td>
</tr>
<tr>
<td>Youthful</td>
<td>Mature</td>
<td>3.49</td>
<td>3.86</td>
<td>-2.24</td>
<td>0.03</td>
</tr>
<tr>
<td>Formal</td>
<td>Informal</td>
<td>4.01</td>
<td>4.03</td>
<td>-0.09</td>
<td>0.92</td>
</tr>
<tr>
<td>Orthodox</td>
<td>Liberal</td>
<td>4.99</td>
<td>4.45</td>
<td>2.94</td>
<td>0.00</td>
</tr>
<tr>
<td>Complex</td>
<td>Simple</td>
<td>4.40</td>
<td>4.81</td>
<td>-2.41</td>
<td>0.02</td>
</tr>
<tr>
<td>Colorful</td>
<td>Colorless</td>
<td>3.54</td>
<td>4.57</td>
<td>-6.36</td>
<td>0.00</td>
</tr>
<tr>
<td>Modest</td>
<td>Vain</td>
<td>4.32</td>
<td>3.77</td>
<td>3.47</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Notes: Each adjective pair was scaled from 1 (extreme left adjective) to 7 (extremely right adjective)
*Bivariate correlation between fashion innovativeness and self-concept variables
**Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed).

Buying impulsiveness

The summed score for impulsive purchase behavior in this study ranged from 11 to 45, \((m = 26.43, sd = 6.11)\), and the results were normally distributed. Cronbach’s \(\alpha\) for this nine-item scale was 0.87, indicating sufficient reliability. According to the independent-samples \(t\) test comparing buying impulsiveness’ mean scores of fashion innovators and non-innovators, a significant difference was found \((t(308) = 3.02, p < .05)\): the mean of the innovators’ buying impulsiveness was significantly higher \((m = 28.38, sd = 7.21)\) than non-innovators \((m = 25.88, sd = 5.68)\).

Based on the frequency distribution, the innovators were more likely to agree with statements 6 and 7. About 63\% (62.5\%) of the innovators agreed and 20.8\% of innovators
strongly agreed with statement 6, “Sometimes I feel like buying.” About 54% (54.2%) of the innovators agreed and 18% strongly agreed with statement 7, “I buy things according to how I feel at the moment.”

Bivariate correlation was used to examine the relationship between fashion innovativeness as measured by the DSI scale (Goldsmith et al., 1992) and buying impulsiveness as measured by buying impulsiveness scale (Rook et al., 1995). There was a significant correlation ($r = 0.30, p = 0.00$), indicating that impulsiveness was positively related to fashion innovativeness, and the result was similar to previous research (Phau et al., 2004).

Table 5. Compare means of buying impulsiveness

<table>
<thead>
<tr>
<th>Buying impulsiveness scale</th>
<th>Group means</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Innovators</td>
<td>Non-Innovators</td>
</tr>
<tr>
<td>1. I often buy things spontaneously</td>
<td>3.31</td>
<td>2.98</td>
</tr>
<tr>
<td>2. “Just do it” describes the way I buy things</td>
<td>3.14</td>
<td>2.74</td>
</tr>
<tr>
<td>3. I often buy things without thinking</td>
<td>2.89</td>
<td>2.59</td>
</tr>
<tr>
<td>4. “I see it, I buy it” describes me.</td>
<td>2.64</td>
<td>2.21</td>
</tr>
<tr>
<td>5. “Buy now, think about it later” describes me.</td>
<td>2.63</td>
<td>2.25</td>
</tr>
<tr>
<td>6. Sometimes I feel like buying</td>
<td>3.99</td>
<td>3.78</td>
</tr>
<tr>
<td>7. I buy things according to how I feel at the moment</td>
<td>3.79</td>
<td>3.59</td>
</tr>
<tr>
<td>8. I carefully plan most of my purchase. b</td>
<td>3.35</td>
<td>3.45</td>
</tr>
<tr>
<td>9. Sometimes I am a bit reckless about what I buy.</td>
<td>3.21</td>
<td>3.18</td>
</tr>
</tbody>
</table>

Note: Response format: 1 =Strongly disagree to 5 =Strongly agree  

b Reverse coded item

Media Use

The results from an independent-samples $t$ test showed that fashion innovators had significantly different media usage behavior compared to non-innovators. Fashion innovators ($m = 2.88, sd = 0.87$) read more fashion magazines ($t(314) = 5.62, p < .005$) than non-innovators ($m = 2.31, sd = 0.71$); innovators ($m = 3.25, sd = 0.99$) watch more
fashion-related television programs ($t(314) = 5.89, p < .005$) than non-innovators ($m = 2.88, sd = 0.87$); innovators ($m=3.10, sd =1.06$) read more fashion-related articles in newspapers ($t(314) = 2.96, p < .005$) than non-innovators ($m = 2.72, sd = 0.92$); innovators ($m = 3.86, sd = 0.91$) checked fashion information online ($t(314) = 7.19, p < .005$) more often than non-innovators ($m = 2.90, sd = 1.02$); innovators ($m = 3.42, sd = 0.96$) discuss fashion information with their family and friends ($t(314) = 5.04, p < .005$) more often than non-innovators ($m = 2.77, sd = 0.96$).

Based on the frequency distribution (See Table 6), compared to non-innovators, innovators were more likely to obtain fashion information from online news, blogs, or BBS, as well as by personal communications. The bivariate correlation indicated positive relationships between fashion innovativeness and all kinds of media usage frequency. The results were consistent with independent-samples $t$ test analysis.

**Table 6. Fashion innovators and non-innovators media use**

<table>
<thead>
<tr>
<th></th>
<th>Innovators</th>
<th>Non-Innovators</th>
<th>$t$</th>
<th>$p$-value</th>
<th>$r^a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do you read fashion magazines?</td>
<td>2.88</td>
<td>2.31</td>
<td>5.64</td>
<td>0.00</td>
<td>0.46**</td>
</tr>
<tr>
<td>How often do you watch television programs relating to fashion information</td>
<td>3.25</td>
<td>2.55</td>
<td>5.87</td>
<td>0.00</td>
<td>0.44**</td>
</tr>
<tr>
<td>How often do you read fashion information articles in the newspaper</td>
<td>3.10</td>
<td>2.71</td>
<td>3.00</td>
<td>0.00</td>
<td>0.25**</td>
</tr>
<tr>
<td>How often do you check fashion information online? (e.g. online news, blogs, Bulletin Board System)</td>
<td>3.86</td>
<td>2.90</td>
<td>7.24</td>
<td>0.00</td>
<td>0.49**</td>
</tr>
<tr>
<td>How often do you discuss fashion information with your friends or family?</td>
<td>3.42</td>
<td>2.77</td>
<td>5.03</td>
<td>0.00</td>
<td>0.44**</td>
</tr>
</tbody>
</table>

Note: Questions were responded as: (1) never (less than one time in the past 3 months). (2) Rarely (1-2 times per month). (3) Sometimes (3-5 times per month) (4) Frequently (6-10 times per month) (5) Very frequently (more than 10 times per month).

*Bivariate correlation between fashion innovativeness and media use variables

**Correlation is significant at the 0.01 level (2-tailed)
The survey contained an open-ended question regarding their most frequently visited fashion-related websites. There were 413 websites listed by all respondents. Yahoo (14%) and Yahoo auction (12.8%) were the top two websites that all respondents visited for fashion information. If Yahoo fashion (2.7%) and Yahoo auction (12.8%) were all combined under Yahoo, this would make 29.5% for the fashion-related websites that respondents’ most frequently visit. The third most popular website was Fashion Guide (10.4%). It is a fashion-specific website for people in Taiwan, which has online communities, fashion news, fashion information, and online newspapers. For fashion innovators, Fashion Guide is the top website they visited for fashion information, followed by Yahoo (14%) and Yahoo auction (14%). The fourth most popular website innovators visited most frequently was PTT, which is a BBS (Bulletin Board System) site for college students; it has several subcategories, and the topics include fashion trends, cosmetics, and apparel mix and match.

### Table 7. Top 10 fashion-related websites

<table>
<thead>
<tr>
<th>Websites and URLs</th>
<th>General (n= 413)</th>
<th>%</th>
<th>Innovators (n= 114)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. YAHOO (<a href="http://www.yahoo.com.tw">www.yahoo.com.tw</a>)</td>
<td>58</td>
<td>14.0</td>
<td>16</td>
<td>14.0</td>
</tr>
<tr>
<td>2. Yahoo Auction (tw.bid.yahoo.com)</td>
<td>53</td>
<td>12.8</td>
<td>16</td>
<td>14.0</td>
</tr>
<tr>
<td>3. Yahoo Fashion (tw.fashion.yahoo.com)</td>
<td>11</td>
<td>2.7</td>
<td>4</td>
<td>3.5</td>
</tr>
<tr>
<td>5. PTT (<a href="http://www.ptt.cc">www.ptt.cc</a>)</td>
<td>29</td>
<td>7.0</td>
<td>11</td>
<td>9.6</td>
</tr>
<tr>
<td>6. PayEasy (<a href="http://www.payeasy.com.tw">www.payeasy.com.tw</a>)</td>
<td>23</td>
<td>5.6</td>
<td>5</td>
<td>4.4</td>
</tr>
<tr>
<td>7. Other people’s blogs</td>
<td>18</td>
<td>4.4</td>
<td>5</td>
<td>4.4</td>
</tr>
<tr>
<td>8. Vogue.com (<a href="http://www.vogue.com.tw/">www.vogue.com.tw/</a>)</td>
<td>16</td>
<td>3.9</td>
<td>4</td>
<td>3.5</td>
</tr>
<tr>
<td>9. TVBS_Women (<a href="http://www.tvbs.com.tw/project/tvbs_g/program/woman0504/default.html">www.tvbs.com.tw/project/tvbs_g/program/woman0504/default.html</a>)</td>
<td>9</td>
<td>2.2</td>
<td>3</td>
<td>2.6</td>
</tr>
<tr>
<td>10. MSN (tw.msn.com)</td>
<td>8</td>
<td>1.9</td>
<td>3</td>
<td>2.6</td>
</tr>
<tr>
<td>Others</td>
<td>145</td>
<td>34.8</td>
<td>30</td>
<td>26.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>413</strong></td>
<td><strong>100.0</strong></td>
<td><strong>114</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Note: The websites’ frequency in general less than 8 were categorized under “other.”
**Online purchase behavior**

First, we examined general Internet use. Based on the survey’s results, 316 (99.4%) of the respondents had Internet access at home and only 2 (0.6%) of respondents did not. The time they spent on the Internet per week ranged from 1-100 hours ($m = 22.67$, $sd = 15.56$). The independent-samples $t$ test indicated that innovators and non-innovators had no significant difference on the time they spent on the Internet ($t(313) = 0.70$, n. s.). The bivariate correlation examined the relationship between fashion innovativeness and hours spent online, and also showed no significant relationships between these two variables.

**Table 8. Comparison of Internet use between fashion innovators and non-innovators**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Innovators (n=72)</th>
<th>Non-Innovators (n= 243-246)</th>
<th>t</th>
<th>p-value</th>
<th>r$^a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hours spend on the Internet per week</td>
<td>23.40 hrs/week</td>
<td>21.94 hrs/week (n=243)</td>
<td>0.78</td>
<td>0.48</td>
<td>0.04</td>
</tr>
<tr>
<td>2. How often do you use Internet?</td>
<td>4.71</td>
<td>4.64 (n=246)</td>
<td>3.59</td>
<td>0.44</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Note: Questions 2 was responded as: (1) never (2) very few times (3) sometimes (4) often (5) very often.

$^a$ Bivariate correlation between fashion innovativeness and Internet usage variables

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

An independent-samples $t$ test was used to detect whether there was any significant difference in online purchase behavior between innovators and non-innovators. Bivariate correlation was used to examine the correlation between the whole distribution of the total DSI score and online purchase frequency as well as fashion item online purchase frequency.

The $t$-test’s results showed that fashion innovators shop online ($t(318) = 3.81$, $p < .00$) more frequently, and purchase fashion items ($t(316) = .70$, $p < .00$) more frequently as well. In addition, innovators showed stronger interests in purchasing fashion items ($t(318) = 4.18$, $p < .00$) in the future. Bivariate correlation test results indicated positive relationships between fashion innovativeness and online purchases, online fashion item
purchase, and buying fashion items online in the future. The results were consistent with the independent-samples $t$ test results. With higher fashion innovativeness, respondents were more likely to purchase general items ($r = 0.256, p = 0.00$) and fashion items ($r = 0.303, \ p = 0.00$) online, and they were more interested in buying fashion items in the future ($r = 0.291, \ p = 0.00$).

Table 9. Means for online purchase behavior

<table>
<thead>
<tr>
<th>Variables</th>
<th>Innovators (n=72)</th>
<th>Non-Innovators (n= 243-246)</th>
<th>t</th>
<th>p-value</th>
<th>$r^*$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you ever made a purchase online?</td>
<td>2.82</td>
<td>2.39 (n=246)</td>
<td>3.81</td>
<td>.000</td>
<td>0.26**</td>
</tr>
<tr>
<td>2. Have you ever purchased a fashion item online?</td>
<td>2.43</td>
<td>1.98 (n=244)</td>
<td>3.84</td>
<td>.000</td>
<td>0.30**</td>
</tr>
<tr>
<td>3. Are you likely to purchase fashion items online in the future?</td>
<td>3.92</td>
<td>3.44(n=246)</td>
<td>4.18</td>
<td>.000</td>
<td>0.29**</td>
</tr>
</tbody>
</table>

Note: Questions 1-2 were responded as: (1).never (2) very few times (3) sometimes (4) often (5) very often. Question 3 was responded as: (1)Not interested at all(2)Slightly interested (3)Neutral (4)Interested (5)Highly interested.

*Bivariate correlation between fashion innovativeness and online purchase variables

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

Based on the frequency distribution, 47.2% of fashion innovators purchase online sometimes (3 to 5 times per month), 9.7% of them reported as often (6-10 times per month), and 6.9% of them reported as very often (more than 10 times per month); for the non-fashion innovators (n = 244), 34.6% of them purchase online sometimes (3 to 5 times per month), 8.5% of them purchase online often (6-10 times per month), and 0.8% of them purchase online very often (more than 10 times per month). As for purchasing specifically fashion items online, 31.9% of fashion innovators reported as sometimes (3 to 5 times per month), 9.7% of them reported as often (6-10 times per month), and 1.4% of them reported as very often (more than 10 times per month). For the non-fashion innovators (n = 244),
21.5% of them reported as sometimes (3 to 5 times per month), 3.7% of them reported as often (6-10 times per month), and 0.8% of them reported as very often (more than 10 times per month)

**Table 10. Frequency of purchase online**

<table>
<thead>
<tr>
<th></th>
<th>Innovators</th>
<th>Non-Innovators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Have you ever made a purchase online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>4</td>
<td>5.55</td>
</tr>
<tr>
<td>Very few times</td>
<td>22</td>
<td>30.55</td>
</tr>
<tr>
<td>Sometime</td>
<td>34</td>
<td>47.22</td>
</tr>
<tr>
<td>Often</td>
<td>7</td>
<td>9.72</td>
</tr>
<tr>
<td>Very often</td>
<td>5</td>
<td>6.94</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>100</td>
</tr>
<tr>
<td>Have you ever purchased a fashion item online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>9</td>
<td>12.50</td>
</tr>
<tr>
<td>Very few times</td>
<td>32</td>
<td>44.44</td>
</tr>
<tr>
<td>Sometime</td>
<td>23</td>
<td>31.94</td>
</tr>
<tr>
<td>Often</td>
<td>7</td>
<td>9.72</td>
</tr>
<tr>
<td>Very often</td>
<td>1</td>
<td>1.39</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>100</td>
</tr>
</tbody>
</table>

Note: Questions were responded as: (1).never (2) very few times (less than one time in the past 3 months) (3) sometimes (2-3 times in 3 months) (4) often (4-8 times in 3 months) (5) very often (more than 9 times in 3 months)

Regarding the item that fashion innovators and non-innovators purchase online, 63.88% of fashion innovators and 43.89% of non-innovators reported they purchased general items online sometimes to very often. Compared to buying particular fashion items online, 43.05% of fashion innovators and 26.22% of non-innovators have purchased fashion items online sometimes to very often. These results indicated that both fashion innovators and non-innovators purchase general items online more than fashion items online.

However, innovators and non-innovators have slightly different online purchasing behaviors when it comes to fashion items. The Chi-Squared test indicated they purchased...
online differently only in one out of four different fashion items (clothes, accessories, fashion magazines or books, and cosmetics). There were 73.6% of fashion innovators who have purchased clothing online compared with 52.8% of non-innovators, and there is a significant difference between their purchasing online \( (\chi^2 = 9.83, \text{ d. f.} = 1, p < .005) \).

Only 23.6% of the innovators and 24.8% of the non-innovators have purchased accessories online. For the fashion magazine, 33.3% of fashion innovators and 28.9% of the non-innovators have purchased online. As for cosmetics, 34.7% of fashion innovators and 30.6% of the non-innovators have purchased such items online. There were no significant differences between these two groups for these three fashion-related items.

**Table 11. Frequency of fashion items purchase online**

<table>
<thead>
<tr>
<th>Item</th>
<th>Innovators (n=72)</th>
<th>Non-Innovators (n=246)</th>
<th>Total (n=318)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Clothing</td>
<td>53 73.61</td>
<td>130 52.85</td>
<td>183 57.55</td>
</tr>
<tr>
<td>Accessories</td>
<td>17 23.61</td>
<td>61 24.79</td>
<td>78 24.53</td>
</tr>
<tr>
<td>Magazines</td>
<td>24 33.33</td>
<td>71 28.86</td>
<td>95 29.87</td>
</tr>
<tr>
<td>Cosmetics</td>
<td>25 34.72</td>
<td>75 30.49</td>
<td>100 31.45</td>
</tr>
</tbody>
</table>

**Perceived attributes of online shopping**

There were 17 survey questions regarding perceived attributes toward shopping for fashion items online. The first attribute “relative advantage” contained 7 questions \( (\alpha = 0.78) \), second attribute “compatibility” contained 2 questions \( (\alpha = 0.85) \), the third attribute “ease” had 3 questions \( (\alpha = 0.74) \), fourth attribute “observability” contained 2 questions \( (\alpha = 0.32) \), and last attribute “triability” contained 3 questions \( (\alpha = 0.58) \). Three out five attributes’ scales had good reliability.

An independent-samples \( t \) test and bivariate correlation were employed in comparing
innovators and non-innovators’ differences in five perceived attributes. Based on the \( t \) test results, innovators perceived purchasing fashion items online as having more relative advantage (\( t(309) = 2.01, p < .05 \)), easier (\( t(309) = 1.93, p < .05 \)), observable (\( t(314) = 2.47, p < .05 \)), and triable (\( t(314) = 2.05, p < .05 \)). Bivariate correlations also show significant relationships between fashion innovativeness with ease (\( r = 0.142, p = 0.013 \)) and observability (\( r = 0.204, p = 0.000 \)). With higher fashion innovativeness, respondents tended to perceive buying fashion items online as easier and more observable.

Table 12. Perceived attributes toward shopping fashion item online

<table>
<thead>
<tr>
<th>Perceived attributes</th>
<th>Innovators (n=72)</th>
<th>Non-Innovators (n=239-244)</th>
<th>( t )</th>
<th>( p )-value</th>
<th>( r^a )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative advantage</td>
<td>25.18 (n=239)</td>
<td>24.0 (n=239)</td>
<td>2.01</td>
<td>0.04</td>
<td>0.10</td>
</tr>
<tr>
<td>Compatibility</td>
<td>6.20 (n=242)</td>
<td>6.07 (n=242)</td>
<td>0.60</td>
<td>0.55</td>
<td>0.06</td>
</tr>
<tr>
<td>Ease</td>
<td>11.14 (n=240)</td>
<td>10.55 (n=240)</td>
<td>1.93</td>
<td>0.05</td>
<td>0.14*</td>
</tr>
<tr>
<td>Observability</td>
<td>7.30 (n=244)</td>
<td>6.77 (n=244)</td>
<td>2.47</td>
<td>0.01</td>
<td>0.20**</td>
</tr>
<tr>
<td>Triability</td>
<td>8.25 (n=244)</td>
<td>7.72 (n=244)</td>
<td>2.06</td>
<td>0.04</td>
<td>0.09</td>
</tr>
</tbody>
</table>

Note: Response format: 1 =Strongly disagree to 5 =Strongly agree

* bivariate correlation between fashion innovativeness and perceived attributes
** correlation is significant at the 0.01 level (2-tailed); * correlation is significant at the 0.05 level (2-tailed)
Chapter 5. Discussion and Conclusions

According to Rogers’ (1995) diffusion of innovations theory and consumer research in fashion (Sproles, 1985; Phau et al., 2004; Park et al., 2005), the concept of “fashion innovator” was used in this study to differentiate a vital consumer group in the fashion market. Moreover, the study identified not only their demographic characteristics, but also their psychographic characteristics, online purchase behavior and perception toward buying fashion items online (Goldsmith et al., 1992; Goldsmith et al., 1996; Goldsmith et al., 1999; Phau et al., 2004; Park et al., 2007). Their characteristics were compared with those of non-fashion innovators.

For online apparel retailers, identifying their major customers’ demographics, psychographic characteristics, and their perceptions toward purchasing online is an essential task. Besides websites features improvement, creating effective marketing strategies which fit customers’ habits and values would be vital to differentiate their brand image in a highly competitive market.

Demographic Characteristics

Previous research on fashion innovators indicated that although demographic characteristics have been extensively used by marketers to identify fashion innovators, these characteristics were relatively weak as predictors (Goldsmith et al., 1996; Goldsmith et al., 1999; Phau et al., 2004). Gender, for example, has been reported as an indicator, with more females who fall in this unique consumer group (Goldsmith et al., 1992).

In this research, there was only one demographic characteristic significantly different between fashion innovators and non-innovators—income level. The results showed that fashion innovators had higher income levels compared to the non-innovators. This result
was consistent with Goldsmith et al. (1992) and Martinez et al.’s (1998) studies. Both studies stated that early adopters usually have higher income levels. Indicating that with a higher income, there will be less financial pressure from trying a new product. Thus, the willingness to adopt an innovation will more likely happen.

Gender, age, and majors were all insignificant as indicators for identifying fashion innovators. This was probably due to the lack of randomness of this convenience sample.

**Media Use**

According to previous research, fashion innovators had unique media usage compared to non-innovators. They read more fashion magazines, watch more fashion-related TV programs, and have more fashion-related discussions with others (Goldsmith et al., 1991; Workman et al., 2005). The results in this study indicated that fashion innovators in Taiwan have the same media usage tendency as well.

Sproles (1985) stressed that fashion innovators usually played important roles in the new style diffusion process, because of “displaying the new styles and verbally influencing friends’ choices” (p. 58). Moreover, he stressed that people usually adopt new fashion based on communication, especially in the personal interaction, and both visual and verbal communications were keys for the new style diffusion (Sproles, 1985).

Chen (2005) stated that there were eight kinds of lifestyles of online users in Taiwan, including a group called “Fashion Extroverts.” This was similar group to the fashion innovators identified in this study. Chen’s fashion extroverts are fashionable, fashion eager and love stylish items; moreover, and they like to chat online all the time. The correlation results showing that personal communication and fashion innovativeness were positively related and the correlation was higher than other communication channels: magazines, TV
programs, and newspaper. This indicated that personal communications was a key channel for gathering and distributing fashion-related information, and was consistent with past studies.

Compared to television, newspaper, magazines, and personal communications, the Internet was the resource that fashion innovators gathered fashion information most frequently. Probably, it was because most of the respondents were college students, so the Internet is the media they use most frequently. They checked fashion news, fashion-related websites, and blogs significantly higher than non-innovators. There was a positive relationship between fashion innovativeness and the frequency of checking fashion-related information online.

The findings show that the top fashion-related website that respondents most frequently visit is Yahoo and Yahoo Bid. This indicates that an integrated website including a portal site, selling channel and individual auction sites, is very powerful in the Taiwanese online market. Yahoo in Taiwan used to be a portal website provided search engine, online news, and forum. The bidding function for B2C and C2C transactions was added at 2001. With the advantages from being a leading local portal site for more than 10 years, Yahoo’s bidding site is always the leading auction site in Taiwan. Auction advertisement is typically placed in the center of the front page, and one of the respondent even said “I visited auction sites especially when they had commercials on the front page.” Women’s apparel and accessories were the top two products selling on Yahoo bids, and usually the sellers provided detailed information such as product information, how to mix and match, and even fashion news. In Taiwan, 70% of the Internet users had used online auction (InsightXplorer, 2007). It is understandable that Yahoo bid is the number one fashion-related website for online users.
gaining fashion information, even though it is not specifically fashion oriented.

The number two website in general and top website for fashion innovators was Fashion Guide, a fashion specific portal site providing forums, online news, shopping, and blogs. They have the largest beauty/fashion discussion board in Taiwan, the feedback and experience from the members shows their high credibility. It generates more than 100,000 visitors and 10,000 discussions per day (Lou, 2007). Fashion innovators like to visit this fashion-oriented site not only because of the abundant information, but also because of its interactive nature.

“PTT” was ranked as the top third site. It is a very popular BBS (Bulletin Board System) in Taiwan, probably because most of the respondents are college students. PTT was first developed for college students, and now the main users are still college students or younger generations. Although this is a different system compare to the World Wide Web which has images or sounds effects, the text-only interface has advantages such as convenience, lower system requirements, and higher speed to exchange information. The PTT beauty and fashion discussion boards provide the latest trend information and discussions.

Besides online forums, blogs were very popular as well. The bloggers shared fashion related information, personal experiences, and product reviews with their viewers. Some times they even provided free consultants for their viewers. More than this, these fashion gurus usually provided other fashion opinion leaders’ links in their blogs, providing viewers with timely and rich information.

Respondents stated that fashion magazine websites were the main sources for gathering information as well; websites such as Vogue.com, ELLE.com or MarieClaires.com were popular resources for fashion information, which indicated that the authoritative fashion
magazines are highly influential even in the online world.

Interestingly, some fashion innovators stated they liked to visit U.S. online apparel retailers websites even though the products are not sold in Taiwan, such as Jcrew.com and American Eagle. Well-designed apparel retailers websites, which conveyed unique brand images, may influence consumers internationally, and bring potential profits.

**Psychographic Characteristics**

**Self-Concept**

Many researches indicated that psychographic characteristics are important indicators of recognizing fashion innovators (Goldsmith et al., 1996; Goldsmith et al., 1999; Phau et al., 2004). Goldsmith, Flynn, and Moore (1996) stated that fashion leaders have a unique self-concept (Malhotra, 1981) compared to the non-innovators. By understanding fashion innovators’ unique self-concept, the online retailers can design their products or marketing strategies to target this important consumer group more precisely.

Goldsmith, Flynn, and Moore’s (1996) study of college students indicated that fashion innovators considered themselves as more excitable, indulgent, contemporary, colorful, formal, and vain. A replicated study of the general public by Goldsmith, Moore, and Beaudoin (1999) indicated that fashion innovators expressed themselves as more comfortable, pleasant, contemporary, formal, colorful, and vain. Phau and Lo (2004) found that fashion innovators were more contemporary, liberal, indulgent, colorful, and excitable.

The findings of this study were consistent with prior research and indicated that fashion innovators in Taiwan portray themselves uniquely as more delicate, dominating, indulgent, contemporary, youthful, liberal, complex, colorful, and vain. The characteristic “colorful” was identical with all previous studies. “Indulgent” was parallel with Goldsmith et al. (1996)
and Phau et al.’s (2004) studies; “contemporary” and “vain” were found in Goldsmith et al. (1996) and Goldsmith’s (1999) studies.

**Buying Impulsiveness**

Buying impulsiveness could be a good psychographic indicator for identifying fashion innovators, especially in research interested in their online shopping behaviors (Rook et al., 1995; Phau et al., 2004). Phau et al. (2004) found a positive but weak relationship between fashion innovativeness and buying impulsiveness. This study had similar results, indicating that with higher fashion innovativeness, buying impulsiveness would be higher. Based on the independent-samples $t$-test, the buying impulsiveness of fashion innovators was significantly higher than that for non-innovators.

Moreover, respondents showed stronger agreement with questions “Sometimes I feel like buying” and “I buy things according to how I feel at the moment,” indicating they were highly motivated by their feelings at the moment they were making a purchase.

**Online Purchase Behavior**

In terms of Internet usage, there was no significant difference between fashion innovators and non-innovators. However, the results showed significant differences in online purchase behaviors between these two groups.

In this research, fashion innovativeness was not only related to the frequency of purchasing general items online, but also purchasing fashion items online. This contradicted Goldsmith et al.’s (2004) study, which indicated that purchasing fashion items online was motivated by Internet innovativeness more than fashion innovativeness. It was also contradicted Phau et al.’s (2004) study; their results showed fashion innovators were less likely to purchase fashion items online compared to non-innovators. Several studies
indicated that higher fashion innovativeness lead to higher frequency of online apparel purchasing, and this was consistent with our findings (Goldsmith & Flynn, 2005; Park, Burn, & Rabolt, 2007).

Apparel was the item that fashion innovators purchased significantly more often than non-innovators. Indicating that apparel was a main product that fashion innovators purchased online, this was quite encouraging for online apparel retailers to target this vital consumer group.

Future intentions of purchasing fashion items online was significantly different between fashion innovators and non-innovators as well. Fashion innovators showed higher interest in buying fashion items online in the future. This result showed that using online channels to attract this important consumer group could be effective and profitable in the future.

**Perceived Attributes**

There were several studies of consumers’ perceptions or adoption of e-commerce and online services based on Rogers’ (1995) diffusion of innovations theory. Consumers experience five stages when deciding to accept or decline an innovation—knowledge, persuasion, decision, implementation, and confirmation. The second stage “persuasion” has been extensively studied, since it is a key stage right before making an accept or reject decision (Johnson et al., 2003). Five perceived attributes were discussed in the second stage—relative advantage, compatibility, complexity, trialability, and observability (Rogers, 1995, p. 208). Innovation attributes have been used in several studies to compare the perception of online purchasers and non-purchasers (Lee et al., 2002; Johnson et al., 2003; Eastin, 2002).

Johnson et al. (2003) stated that small community consumers who purchase apparel
online perceived Internet shopping as being “relatively advantageous, more compatible with their values, beliefs, needs, and past experiences; less complex; more trialable; and more observable” (p. 185). Eastin (2002) pointed out that the adoption of online shopping is best predicted by consumers’ perception of complexity, relative advantage, and compatibility. Lee et al. (2002) also found that compared to the Internet apparel non-purchasers and browsers, the Internet apparel purchasers perceived buying apparel online as more advantageous, safer, and easier.

The findings of this study indicated that fashion innovators perceived buying fashion items online as more advantageous, easier, observable, and triable. Moreover, with higher levels of fashion innovativeness, respondents perceived buying fashion items online as easier and more observable. Higher knowledge and confidence for fashion could be the main reasons that fashion innovators perceived buying fashion items over the Internet as being more positive than non-innovators.

**Academic Implications**

Overall, our findings supported the usefulness of diffusion theory and innovation attributes for understanding adoptive behavior. Diffusion of innovation theory (Rogers, 1995) was applicable in the fashion field. Moreover, the concept of five perceived attributes (Rogers, 1995) could be applied to online shopping in fashion as well. The five perceived attributes scale was first tested between fashion innovators and non-innovators, and the results showed that it was applicable in the fashion market and also in a non-Western cultural context.

This study tested established scales such as Domain Specific Innovativeness Scale (DSI) (Goldsmith et al., 1991), the Self-Concept Scale (Malhotra, 1981), and the Buying
Impulsiveness Scale (Rook et al., 1995) in a non-Western cultural context. Most of the scales were tested as reliable and valid. By investigating the relationships between fashion innovativeness and psychographic characteristics, the results provided a better understanding of the profile of fashion innovators, as well as the applicability of these scales in other countries. The results also supported the notion that psychographic characteristics would be better indicators for identifying fashion innovators; it would be a beneficial guideline for future research, to expand the psychographic scales for better predictions.

**Managerial Implications**

For the online apparel retailers in Taiwan, the results showed the online channel as an effective channel not only to communicate with fashion innovators but also for online purchases. Apparel was the item that fashion innovators purchased frequently online; moreover, fashion innovators tend to have higher buying impulsiveness. Apparel retailers, who want to target younger and more fashionable consumers, should consider using the Internet as a channel for attracting this important consumer group and triggering their impulsive purchases. Additionally, interpersonal communication emerged as an important channel to reach fashion innovators.

Fashion innovators’ unique self-concept characteristics should be used to improve online apparel retailers marketing strategies and the messages conveyed on their sites. By understanding their self-concept characteristics, such as youthful, liberal, delicate, colorful, complex, and vain, the marketers can consider if the verbal and visual messages they express reflect these values.

In terms of fashion-related information, fashion innovators relied on the Internet and
personal communications more than magazines, TV programs, and newspapers, which mean they prefer a more interactive way of gathering fashion information. Online retailers should consider using more interactive marketing tools to stimulate their interactions, such as product feedback, discussion boards, or even a gallery for consumers to post their pictures of wearing the outfit. Threadless.com is a successful example that encourages users to send their designs, voting for designs, and posting their pictures. The contribution and interaction with the website would not only increasing consumers’ loyalty, but also the intention of introducing products to their friends.

Using Hofstede’s (1983) dimensions of culture could be one approach to identify the countries which share similar cultural values with Taiwan, such as Hong Kong and Singapore. This could be beneficial for online retailers in those countries who want to improve their marketing strategies.

**Limitations and Future Research**

This study was restricted by the nature of the sample, measurement, and time of study. First, convenience sample limits generalizability of the findings to a larger population. The profile of fashion innovators was limited to student groups and specifically to universities in the northern part of Taiwan. However, since one of the main purposes was to test theoretical scales’ validity, the sample selection should represent only a minor limitation (Goldsmith et al., 1996; Park et al., 2007).

Second, the results were based on respondents’ self reports and most of them provided quantitative data. Using interviews or observations to gather qualitative data could enhance the understanding of their psychographic and behavioral characteristics in the future.

Third, e-commerce and online consumer behaviors are constantly and quickly changing
(Goldsmith et al., 2002). The results from this study represent a temporary phenomena, but not a longitudinal view. The differences of online buying perception and behavior between fashion innovators and non-innovators might change in different time frames; a longitudinal study could provide a better understanding for this diffusion process.

Finally, the results indicated fashion innovators purchase more non-fashion items compared to fashion items. Future research could delve into the reasons that impede their fashion items online purchase, as well as the reasons that motivate their online purchase.
Appendix A. Consent form

INFORMED CONSENT DOCUMENT
Title of Study: The impact of imagery processing on advertising evaluation
Investigators: Yi-Tung Lo, MFCS.
This is a research for Yi-Tung Lo’s master thesis at Journalism and Mass Communication department at Iowa State University. Please take your time in deciding if you would like to participate. Feel free to ask questions at any time.

INTRODUCTION
The purpose of this study is to investigate students’ attitudes toward online shopping behavior for fashion. You are being invited to participate in this study because you are a student at the (1) Department of Human Development and Family Study at National Taiwan Normal University. (2) Department of Advertising at Fu-Jen Catholic University.

DESCRIPTION OF PROCEDURES
If you agree to participate in this study, your participation will last for 10-15 minutes. During the survey you may expect the following study procedures: You will be asked to fill out a questionnaire, then the researcher or instructor will collect it back.

RISKS
There is no predictable risk for participating in this study.

BENEFITS
There is no direct benefit to you if you decide to take this study.

COSTS AND COMPENSATION
You will not have any costs from participating in this study. You may receive candy for participating in the study. If you choose not to participate in this study, there will be no punishment for not taking this study.

PARTICIPANT RIGHTS
Your participation in this study is completely voluntary and you may reject to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty or loss of benefits.

CONFIDENTIALITY
You can skip questions that you do not want to answer. There is no identifying ID for the questionnaire. Only the researcher Yi-Tung Lo and her major professor Daniela Dimitrova have access for the result. If the results were published, your identity will remain confidential.
**QUESTIONS OR PROBLEMS**
You are welcome to ask questions at any time during this study.

For further information regarding to study result, contact Yi-Tung Lo, at 917-816-3862 or yitunglo@iastate.edu.

If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office of Research Assurances, Iowa State University, Ames, Iowa 50011.

******************************************************************

**PARTICIPANT SIGNATURE**
Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document and that your questions have been satisfactorily answered.

Participant’s Name (printed) ____________________________

(Participant’s Signature) ____________________________ (Date)

**INVESTIGATOR STATEMENT**
I certify that the participant has been given adequate time to read and learn about the study and all of their questions have been answered. It is my opinion that the participant understands the purpose, risks, benefits and the procedures that will be followed in this study and has voluntarily agreed to participate.

(Signature of Person Obtaining Informed Consent) ____________________________ (Date)
Appendix B. Questionnaires Instruction

Dear students:

Thank you for participating in this research about online shopping and fashion items. Fashion items include clothing, cosmetics, and accessories. This survey is voluntary and anonymous, there will be no penalty or benefit lost if you decide not to participate in the study or leave the study early.

There are seven parts of questionnaire, and most questions are single-answer questions, except Part III where question number 6 can be multiple-choice. Please circle the answer most applicable to you.

If you have any questions or concerns, please raise your hand at anytime during the survey, and I will be more than willing to answer your question.

Thank you.
**Appendix C. Questionnaires**

**Part I: Domain Specific Innovativeness Scale (DSI) for Fashion**

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In general, I am among the last in my circle of friends to buy a new fashion item when it appears.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. If I hear that a new fashion available, I will be interested in buying it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Compared to my friends, I own few new fashion items.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. I will buy a new fashion item even if I have not heard of it before.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. In general, I am the last in my circle of friends to know the latest fashion and styles</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. I know the names of new fashion designers before other people do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
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</table>

**Part II: Self-Image Scale**

How would you rate yourself by the following characteristics?

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<thead>
<tr>
<th></th>
<th>1</th>
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<td></td>
<td></td>
<td>Vain</td>
</tr>
</tbody>
</table>
Part III. Internet exposure and consumption patterns

1. Do you have Internet access at home? Yes___ No____

2. How often do you use Internet?
   1. Never
   2. Very few times (less than one time per week)
   3. Sometime (2-3 days per week)
   4. Often (4-6 days per week)
   5. Very often (use Internet almost everyday)

3. How many hours do you approximately spend online per week? ____hours

4. Have you ever made a purchase online?
   1. Never
   2. Very few times (less than one time in the past 3 months)
   3. Sometime (2-3 times in 3 months)
   4. Often (4-8 times in 3 months)
   5. Very often (more than 9 times in 3 months)

5. Have you ever purchased a fashion item online?
   1. Never
   2. Very few times (less than one time in 3 months)
   3. Sometime (2-3 times in 3 months)
   4. Often (4-8 times in 3 months)
   5. Very often (more than 9 times in 3 months)

6. What kind of fashion items have you bought online?
   1. clothes
   2. accessories
   3. fashion magazines or books
   4. cosmetics
   5. other________ (Please specify)

7. Are you likely to purchase fashion items online in the future?
   1. Not interested at all
   2. Slightly interested
   3. Neutral
   4. Interested
   5. Highly interested
Part IV. Media Use

1. How often do you read fashion magazines?
   1. Never (Less than one time in the past 3 month)
   2. Rarely (1-2 times per month)
   3. Sometimes (3-5 times per month)
   4. Frequently (6-10 times per month)
   5. Very frequently (more than 10 times per month)

2. How often do you watch television programs relating to fashion information?
   1. Never (Less than one time in the past 3 month)
   2. Rarely (1-2 times per month)
   3. Sometimes (3-5 times per month)
   4. Frequently (6-10 times per month)
   5. Very frequently (more than 10 times per month)

3. How often do you read fashion information articles in the newspaper?
   1. Never (Less than one time in the past 3 month)
   2. Rarely (1-2 times per month)
   3. Sometimes (3-5 times per month)
   4. Frequently (6-10 times per month)
   5. Very frequently (more than 10 times per month)

4. How often do you check fashion information online? (e.g. online news, blogs, Bulletin Board System)
   1. Never (Less than one time in the past 3 month)
   2. Rarely (1-2 times per month)
   3. Sometimes (3-5 times per month)
   4. Frequently (6-10 times per month)
   5. Very frequently (more than 10 times per month)

5. Please list Top3 fashion-related websites you most frequently visit.
   (1)__________________
   (2)__________________
   (3)__________________

6. How often do you discuss fashion information with your friends or family?
   1. Never (Less than one time in the past 3 month)
   2. Rarely (1-2 times per month)
   3. Sometimes (3-5 times per month)
   4. Frequently (6-10 times per month)
   5. Very frequently (more than 10 times per month)
### Part V. Customers Perceived Attributes Toward Fashion Item Shopping Online

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shopping for fashion items online would increase my shopping for fashion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Shopping for fashion items online would enhance my effectiveness at shopping for fashion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Shopping for fashion items online would give me greater control over my shopping for fashion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Shopping for fashion items online would improve my shopping abilities for fashion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Shopping for fashion items online would allow me to do my shopping more quickly for fashion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Shopping for fashion items online would allow me to have better item selection</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Shopping for fashion items online would allow me to get better prices for fashion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Shopping for fashion items online fits into my shopping style</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Shopping for fashion items online would be compatible with all aspects of the way I shop</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Overall, I believe that shopping for fashion items online would be easy to do</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Learning to shop for fashion items online would be easy for me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I have had plenty of opportunity to see others shopping fashion items for online</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>It is easy for me to find customer feedback of shopping for fashion online</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I can inspect the quality before I shop for fashion items online</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I can try to shop fashion items online without risk</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Shop fashion items online would allow me to try and find out the ideal items</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
## Part VI. Buying impulsiveness scale

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I often buy things spontaneously</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. “Just do it” describes the way I buy things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. I often buy things without thinking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. “I see it, I buy it” describes me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. “Buy now, think about it later” describes me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Sometimes I feel like buying</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. I buy things according to how I feel at the moment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. I carefully plan most of my purchase. (Reverse-coded)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. Sometimes I am a bit reckless about what I buy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

## Part VII. Demographics

1. What is your gender? Male_____ Female_____
2. What is your age? ____
3. What is your major? _______
4. Are you a  
   a. Freshman  
   b. Sophomore  
   c. Third-year student  
   d. Forth-year student  
   e. Graduate student  
5. What is your personal income per month (USD)?  
   a. below 500  
   b. 500-900  
   c. 901-1300  
   d. 1301-1700  
   e. 1701-2100  
   f. above 2100

Thank you for your participation.
Appendix D. Questionnaires in Chinese

I: 時尚指數

<table>
<thead>
<tr>
<th>項目</th>
<th>描述</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>一般來說,在我的朋友裡我是最晚買新上市的時尚相關產品的.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>如果我聽說了有新流行的時尚產品上市了,我會有興趣購買它.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>跟朋友比起來,我擁有的時尚相關產品算是很少的.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>我會購買沒有聽說過的時尚產品</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>一般來說,在我的朋友裡我是最晚知道最新流行以及流行造型的.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>我比別人早知道新出道的流行設計師的名字.</td>
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II. 自我形象評量

你會如何以下列特質評估你自己呢?

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<tr>
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<th>特質</th>
<th>細緻</th>
<th>冷靜</th>
<th>舒適</th>
<th>服從</th>
<th>縱容</th>
<th>討人厭</th>
<th>非現代的</th>
<th>簡單</th>
<th>自由主義</th>
<th>虛榮</th>
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<td>不舒適</td>
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<td>支配</td>
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<td>簡單</td>
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<td>14</td>
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</tbody>
</table>
III. 上網行為以及網路購物

1. 你家中有上網配備嗎？有___ 無___
2. 使用網路的頻率為?
   6. 從不
   7. 很少 (一週使用不到一天)
   8. 偶爾 (一週使用 2-3 天)
   9. 常常 (一週使用 4-6 天)
   10. 非常頻繁 (每天使用)
   11. 我無時不刻都掛在網上
3. 一星期大約花幾個小時在上網呢？_________小時
4. 你曾經在網路上購買過嗎？
   12. 從來沒有
   13. 很少 (過去三個月只有買過不到一次)
   14. 偶爾 (過去三個月內有 2-3 次)
   15. 時常 (過去三個月內有 4-8 次)
   16. 非常頻繁 (過去三個月內有 9 次或 9 次以上)
5. 你曾經在網路上購買時尚流行產品嗎？
   17. 從來沒有
   18. 很少 (過去三個月只有買過不到一次)
   19. 偶爾 (過去三個月內有 2-3 次)
   20. 時常 (過去三個月內有 4-8 次)
   21. 非常頻繁 (過去三個月內有 9 次)
6. 你買過哪一種時尚流行產品呢？
   22. 衣服
   23. 首飾
   24. 流行雜誌或書籍
   25. 化妝品
   26. 其它______ (請註明)
7. 以後有可能會在網路上購買時尚流行產品嗎？
   1. 完全不感興趣
   2. 沒什麼興趣
   3. 沒意見
   4. 有興趣
   5. 非常有興趣
IV. 媒體使用

1. 你閱讀時尚雜誌的頻率為何?
   1. 從不
   2. 很少 (一個月 1-2 次)
   3. 偶爾 (一個星期 1 次)
   4. 時常 (一個星期 2-3 次)
   5. 非常頻繁 (一個星期 3 次 以上)

2. 你收看跟流行時尚相關的電視節目的頻率為何?
   1. 從不
   2. 很少 (一個月 1-2 次)
   3. 偶爾 (一個星期 1 次)
   4. 時常 (一個星期 2-3 次)
   5. 非常頻繁 (一個星期 3 次 以上)

3. 你閱讀時尚流行相關的報紙專欄頻率為何?
   1. 從不
   2. 很少 (一個月 1-2 次)
   3. 偶爾 (一個星期 1 次)
   4. 時常 (一個星期 2-3 次)
   5. 非常頻繁 (一個星期 3 次 以上)

4. 你查閱網路上時尚流行相關的資訊的頻率為何? (例如：網路新聞,部落格, BBS)
   1. 從不
   2. 很少 (一個月 1-2 次)
   3. 偶爾 (一個星期 1 次)
   4. 時常 (一個星期 2-3 次)
   5. 非常頻繁 (一個星期 3 次 以上)

5. 請列出你最常瀏覽的三個關於流行時尚的網站。
   (1)__________________
   (2)__________________
   (3)__________________

6. 你跟家人或朋友交換流行資訊的頻率為何?
   1. 從不
   2. 很少 (一個月 1-2 次)
   3. 偶爾 (一個星期 1 次)
   4. 時常 (一個星期 2-3 次)
   5. 非常頻繁 (一個星期 3 次 以上)
<table>
<thead>
<tr>
<th>主题</th>
<th>非常同意</th>
<th>同意</th>
<th>沒意見</th>
<th>不同意</th>
<th>非常不同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>在網上購買流行時尚商品會增加我對此類商品的採購</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>在網上購買流行時尚商品會增加我對此類商品的採購的效率</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>在網上購買流行時尚商品會讓我更能掌握對此類商品的採購</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>在網上購買流行時尚商品可以讓我更快購買到此類商品</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>在網上購買流行時尚商品讓我在買此類商品時有更好的商品選擇</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>在網上購買流行時尚商品讓我在買此類商品時有更好的價格</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>在網上購買流行時尚商品跟我的購買型態很相符</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>在網上購買流行時尚商品跟我購買的行爲各方面都很相符</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>在網上購買流行時尚商品是清楚易懂的</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>學習在網上購買流行時尚商品對我來說會是容易的</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>我有的很多的機會可以觀察別人在網上購買流行時尚商品</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>在網路上觀察別人對於在網上購買流行時尚商品的評價對我來說是很容易的</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>我可以無風險的嘗試在網上購買流行時尚商品</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>在網上購買流行時尚商品讓我可以嘗試並尋找合適的此類商品</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
VI. 消費行為指數

<table>
<thead>
<tr>
<th>話題</th>
<th>非常同意</th>
<th>同意</th>
<th>沒意見</th>
<th>不同意</th>
<th>非常不同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 通常我買東西都是想買就買了</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. “Just do it”符合我買東西的風格</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. 通常我買東西不會想太多</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. “看到就買”很能代表我</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. “現在先買,以後再煩惱”可以代表我</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. 有時候我就是很想買東西</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. 我買東西是憑著那時候的感覺</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. 大部份的購買我都是經過深思熟慮的</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. 我買東西有時候是有點魯莽的</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

VII. 基本資料

1. 你的性別是？男____ 女____
2. 你的年齡？____
3. 你的科系是？____
4. 你是
   1. 大學一年級生
   2. 大學二年級生
   3. 大學三年級生
   4. 大學四年級生
   5. 研究生
5. 一個月收入有多少呢？
   1. 5000 元以下
   2. 5000-10000 元
   3. 10001-25000 元
   4. 25001-30000 元
   5. 30001-35000 元
   6. 35000 元以上

謝謝你的配合！
Appendix E. IRB Forms

The Institutional Review Board (IRB) Chair has reviewed this project and has declared the study exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b). The IRB determination of exemption means that:

- You do not need to submit an application for annual continuing review.

- You must carry out the research as proposed in the IRB application, including obtaining and documenting (signed) informed consent if you have stated in your application that you will do so or if required by the IRB.

- Any modification of this research should be submitted to the IRB on a Continuing Review and/or Modification form, prior to making any changes, to determine if the project still meets the Federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB proposal will need to be submitted and approved before proceeding with data collection.

Please be sure to use the documents with the IRB approval stamp in your research.

Please note that you must submit all research involving human participants for review by the IRB. Only the IRB may make the determination of exemption, even if you conduct a study in the future that is exactly like this study.
ISU NEW HUMAN SUBJECTS REVIEW FORM

SECTION I: GENERAL INFORMATION

Principal Investigator (PI): Yi-Tung Lo
Degrees: M.S.
Department: Journalism
Center/Institute: College: Liberal Art and Science
PI Level: Faculty
Alternate Contact Person: Daniela Dimitrova
Correspondence Address: Phone: 9178163862
Correspondence Address: 3021 Regency Court #87, Ames, IA 50010
Email Address: yitutnglo@iastate.edu
Email Address: danielad@iastate.edu

Length of Approval:
FULL Committee Review: No
Minimal Risk: Yes
More than Minimal Risk: No
Project Closed Date:

EXEMPT per 45 CFR 46.101(b) EXPEDITED per 45 CFR 46.110(b)

PROJECT PERIOD (Include Start and End Date):

FOR STUDENT PROJECTS

Name of Major Professor/Supervising Faculty: [Redacted]
Phone: 515-294-4435
Department: Journalism and Communication
Email Address: danielad@iastate.edu

Signature of Major Professor/Supervising Faculty:

Type of Project: (check all that apply)
- Research
- Thesis
- Independent Study (490, 590, Honors project)
- Dissertation
- Other. Please specify:

KEY PERSONNEL

List all members and relevant experience of the project personnel. This information is intended to inform the committee of the training and background related to the specific procedures that the each person will perform on the project.

<table>
<thead>
<tr>
<th>NAME &amp; DEGREE(S)</th>
<th>SPECIFIC DUTIES ON PROJECT</th>
<th>TRAINING &amp; EXPERIENCE RELATED TO PROCEDURES PERFORMED, DATE OF TRAINING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yi-Tung Lo, MFCS</td>
<td>Developing research</td>
<td>11/10/2005 completed the web-based training</td>
</tr>
<tr>
<td>Daniela Dimitrova</td>
<td>Supervising faculty</td>
<td>5/07/04</td>
</tr>
</tbody>
</table>

To list additional personnel please attach separate sheet.

Research Assurances 11/08/07
FUNDING INFORMATION

| Internally funded, please provide account number: |
| Externally funded, please provide funding source and account number: |
| Funding is pending please provide OSPA Record ID on GoldSheet: |
| Title on GoldSheet if Different Than Above: |
| Other: e.g., funding will be applied for later: |

SCIENTIFIC REVIEW

Although the assurance committees are not intended to conduct peer review of research proposals, the federal regulations include language such as “consistent with sound research design,” “rationale for involving animals or humans” and “scientifically valuable research,” which requires that the committees consider in their review the general scientific relevance of a research study. Proposals that do not meet these basic tests are not justifiable and cannot be approved. If an assurance review committee(s) has concerns about the scientific merit of a project and the project was not competitively funded by peer review or was funded by corporate sponsors, the project may be referred to a scientific review committee. The scientific review committee will be ad hoc and will consist of your ISU peers and outside experts as needed. If this situation arises, the PI will be contacted and given the option of agreeing that a consultant may be contacted or withdrawing the proposal from consideration.

☐ Yes  ☒ No  Has or will this project receive peer review?

If the answer is “yes,” please indicate who did or will conduct the review:

If a review was conducted, please indicate the outcome of the review:

NOTE: RESPONSE CELLS WILL EXPAND AS YOU TYPE AND PROVIDE SUFFICIENT SPACE FOR YOUR RESPONSE.

COLLECTION OR RECEIPT OF SAMPLES

Will you be: (Please check all that apply.)

☐ Yes  ☒ No  Receiving samples from outside of ISU? See examples below.
☐ Yes  ☒ No  Sending samples outside of ISU? See examples below.

Examples include: genetically modified organisms, body fluids, tissue samples, blood samples, pathogens.

If you will be receiving samples from or sending samples outside of ISU, please identify the name of the outside organization(s) and the identity of the samples you will be sending or receiving outside of ISU:

Please note that some samples may require a USDA Animal Plant Health Inspection Service (APHIS) permit, a USPHS Centers for Disease Control and Prevention (CDC) Import Permit for Etiologic Agents, a Registration for Select Agents, High Consequence Livestock Pathogens and Toxins or Listed Plant Pathogens, or a Material Transfer Agreement (MTA) (http://www.ehs.iastate.edu/bs/shipping.htm ).

SECTION II: APPLICATION FOR INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL

☐ Yes  ☒ No  Does this project involve human research participants?

Research Assurances 11/08/07
SECTION III: ENVIRONMENTAL HEALTH AND SAFETY INFORMATION (EH&S)

☐ Yes ☒ No  Does this project involve laboratory chemicals, human cell lines or tissue culture (primary OR immortalized), or human blood components, body fluid or tissues?

ASSURANCE

- I certify that the information provided in this application is complete and accurate and consistent with any proposal(s) submitted to external funding agencies.
- I agree to provide proper surveillance of this project to ensure that the rights and welfare of the human subject or welfare of animal subjects are protected. I will report any problems to the appropriate assurance review committee(s).
- I agree that I will not begin this project until receipt of official approval from all appropriate committee(s).
- I agree that modifications to the originally approved project will not take place without prior review and approval by the appropriate committee(s), and that all activities will be performed in accordance with all applicable federal, state, local and Iowa State University policies.

CONFLICT OF INTEREST

A conflict of interest can be defined as a set of conditions in which an investigator’s or key personnel’s judgment regarding a project (including human or animal subject welfare, integrity of the research) may be influenced by a secondary interest (e.g., the proposed project and/or a relationship with the sponsor). ISU’s Conflict of Interest Policy requires that investigators and key personnel disclose any significant financial interests or relationships that may present an actual or potential conflict of interest. By signing this form below, you are certifying that all members of the research team, including yourself, have read and understand ISU’s Conflict of Interest policy as addressed by the ISU Faculty Handbook (http://www.provost.iastate.edu/faculty) and have made all required disclosures.

☐ Yes ☐ No  Do you or any member of your research team have an actual or potential conflict of interest?
☐ Yes ☐ No  If yes, have the appropriate disclosure form(s) been completed?

SIGNATURES

[Signature]
Signature of Principal Investigator

Date 01/24/2008

Signature of Department Chair

Date 1/24/08

Major Professor/Supervising Faculty: Please sign cover page.

PLEASE NOTE: Any changes to an approved protocol must be submitted to the appropriate committee(s) before the changes may be implemented.

Please proceed to SECTION II.
SECTION II: IRB SECTION - STUDY SPECIFIC INFORMATION

STUDY OBJECTIVES

Briefly explain in language understandable to a layperson the specific aim(s) of the study.

The focus of the study is to investigate students’ attitudes toward online shopping for fashion in Taiwan.

BENEFITS TO SOCIETY AND PARTICIPANTS

Explain in language understandable to a layperson how the information gained in this study will advance knowledge, and/or serve the good of society. Please also describe the direct benefits to research participants; if there are no direct benefits to participants, indicate that. Note: monetary compensation cannot be considered a benefit to participants.

Results are valuable to other Asian countries online retailers which share similar cultural values and geographical characteristics.

For academics, theoretical scales for fashion innovativeness and online perceived attributes will be tested in Taiwan, and provide better understanding of frequency and product types of online fashion buying. For Industry, helping marketers’ understanding of the distribution and characteristics of fashion innovators, moreover, providing guidelines for improving marketing and communication strategies.

PART A: PROJECT INVOLVEMENT

1) ☐ Yes ☒ No Is this project part of a Training, Center, Program Project Grant?
   Director Name: ___________________________ Overall IRB ID:

2) ☒ Yes ☐ No Is the purpose of this project to develop survey instruments?

3) ☐ Yes ☒ No Does this project involve an investigational new drug (IND)? Number:

4) ☐ Yes ☒ No Does this project involve an investigational device exemption (IDE)? Number:

5) ☐ Yes ☒ No Does this project involve existing data or records?

6) ☐ Yes ☒ No Does this project involve secondary analysis?

7) ☐ Yes ☒ No Does this project involve pathology or diagnostic specimens?

8) ☐ Yes ☒ No Does this project require approval from another institution? Please attach letters of approval.

9) ☐ Yes ☒ No Does this project involve DEXA/CT scans or X-rays?

PART B: MEDICAL HEALTH INFORMATION OR RECORDS

1) ☐ Yes ☒ No Does your project require the use of a health care provider’s records concerning past, present, or future physical, dental, or mental health information about a subject? The Health Insurance Portability and Accountability Act established the conditions under which protected health information may be used or disclosed for research purposes. If your project will involve the use of any past or present clinical information about someone, or if you will add clinical information to someone’s treatment record (electronic or paper) during the study you must complete and submit the Application for Use of Protected Health Information.

PART C: ANTICIPATED ENROLLMENT
PART D: PARTICIPANT SELECTION

Please use additional space as necessary to adequately answer each question.

11. Explain the procedures for selecting participants including any inclusion/exclusion criteria (i.e., Where will the names come from? Will a sample be purchased, will ads, flyers, word of mouth, email list, etc. be used?).

Based on the personal contact with the instructor and alumni relationship with the department. The data for this study will come from two convenience samples of undergraduate students at: (1) Department of Human Development and Family Study at National Taiwan Normal University. (2) Department of Advertising at Fu-Jen Catholic University. Students in several courses will be asked to complete questionnaire voluntarily at the end of class time.

12. Attach a copy of any recruitment telephone scripts or materials such as ad, fliers, e-mail messages, etc. Recruitment material must include a statement of the voluntary and confidential nature of the research. Do not include the amount of compensation, (e.g., compensation available).

Note: Please answer each question. If the question does not pertain to this study, please type not applicable (N/A).

PART E: RESEARCH PLAN

Include sufficient detail for IRB review of this project independent of the grant, protocol, or other documents.

13. The information needed here is similar to that in the “methods” or “procedures” sections of a research proposal—it should describe the flow of events that will occur during your interactions with subjects. Please describe in detail your plans for collecting data from participants, including all procedures, tasks, or interventions participants will be asked to complete during the research (e.g., random assignment, any conditions or treatment groups into which participants will be divided, mail survey or interview procedures, sensors to be worn, amount of blood drawn, etc.). This information is intended to inform the committee of the procedures used in the study and their potential risk. Please do not respond with “see attached” or “not applicable.”

At the end of class, the researcher herself will come into the classroom. The instructor will inform the students to take the survey voluntarily, they can refuse to take the survey at any time and leave without penalty. After the announcement, the questionnaire will be distributed. It will take 10-15 minutes to complete the survey, completed survey will be collected by the researcher or instructor.

Research Assurances 11/08/07
whether specimens are linked at any time by code number to the participant’s identity. If this question is not applicable, please type N/A in the response cell.

| N/A |

15. For studies involving deception, please justify the deception and indicate the debriefing procedure, including the timing and information to be presented to participants. If this question is not applicable, please type N/A in the response cell.

| N/A |

16. Describe the consent process for adult participants (those who are age 18 and older). *If the consent process does not include documented consent, a waiver of documentation of consent must be requested.*

The announcement will stress the students' right to decide to take the survey or not. And there will be consent form attach with each questionnaire provide the participant with detail information.

| N/A |

17. If your study involves minors, please explain how parental consent will be obtained prior to enrollment of the minor(s).

| N/A |

18. Please explain how assent will be obtained from minors (younger than 18 years of age), prior to their enrollment. Also, please explain if the assent process will be documented (e.g., a simplified version of the consent form, combined with the parental informed consent document). According to the federal regulations assent "...means a child's affirmative agreement to participate in research. Mere failure to object should not, absent affirmative agreement, be construed as assent."

| N/A |

19. Describe how the data will be analyzed (e.g. statistical methodology, statistical evaluation, statistical measures used to evaluate results)

The data will be analyzed by the program SPSS. The frequency test, T-test comparision, and correlation test will be used.

20. If applicable, please indicate the anticipated date that identifiers will be removed from completed survey instruments and/or audio or visual tapes will be erased:

12/31/2008 Month/Day/Year

**PART H: RISKS**

The concept of risk goes beyond physical risk and includes risks to participants' dignity and self-respect as well as psychological, emotional, legal, social or financial risk.

Research Assurances 11/08/07
21. ☒ Yes  ☒ No  Is the probability of the harm or discomfort anticipated in the proposed research greater than that encountered ordinarily in daily life or during the performance of routine physical or psychological examinations or tests?

22. ☒ Yes  ☒ No  Is the magnitude of the harm or discomfort greater than that encountered ordinarily in daily life, or during the performance of routine physical or psychological examinations or tests?

23. Describe any risks or discomforts to the participants and how they will be minimized and precautions taken. Do not respond with N/A. If you believe that there will not be risk or discomfort to participants you must explain why.

There is no forseen risk associated with this study

24. If this study involves vulnerable populations, including minors, pregnant women, prisoners, the cognitively impaired, or those educationally or economically disadvantaged, what additional protections will be provided to minimize risks?

N/A

PART I: COMPENSATION

25. ☒ Yes  ☒ No  Will participants receive compensation for their participation? If yes, please explain.

Do not make the payment an inducement, only a compensation for expenses and inconvenience. If a person is to receive money or another token of appreciation for their participation, explain when it will be given and any conditions of full or partial payment. (E.g., volunteers will receive $5.00 for each of the five visits in the study or a total of $25.00 if he/she completes the study. If a participant withdraws from participation, they will receive $5.00 for each of the visits completed.) It is considered undue influence to make completion of the study the basis for compensation.

Students will receive candy as reward after they complete the survey.

PART J: CONFIDENTIALITY

26. Describe below the methods that will be used to ensure the confidentiality of data obtained. For example, who has access to the data, where the data will be stored, security measures for web-based surveys and computer storage, how long data or specimens will be retained, etc.

The people who can access data will be limited to the researcher and her committee members. The data will be saved in student's personal computer, which no one else can access.

PART K: REGISTRY PROJECTS

To be considered a registry: (1) the individuals must have a common condition or demonstrate common responses to questions; (2) the individuals in the registry might be contacted in the future; and (3) the names/data of the individuals in the registry might be used by investigators other than the one maintaining the registry.

☒ Yes  ☒ No  Does this project establish a registry?

If “yes,” please provide the registry name below.
CHECKLIST FOR ATTACHMENTS

Listed below are the types of documents that should be submitted for IRB review. Please check and attach the documents that are applicable for your study:

☐ A copy of the informed consent document OR ☐ Letter of introduction containing the elements of consent
☐ A copy of the assent form if minors will be enrolled
☐ Letter of approval from cooperating organizations or institutions allowing you to conduct research at their facility
☐ Data-gathering instruments (including surveys) - translated version included
☐ Recruitment fliers, phone scripts, or any other documents or materials participants will see or hear

The original signed copy of the application form and one set of accompanying materials should be submitted for review. Federal regulations require that one copy of the grant application or proposal be submitted for comparison with the application for approval.

FOR IRB USE ONLY:

Initial action by the Institutional Review Board (IRB):

☐ Project approved. Date: 11/19
☐ Pending further review. Date: 
☐ Project not approved. Date: 

Follow-up action by the IRB:

IRB Approval Signature: 

Date: 

SECTION III: ENVIRONMENTAL HEALTH AND SAFETY INFORMATION

☐ Yes ☐ No Does this project involve human cell or tissue cultures (primary OR immortalized), or human blood components, body fluids or tissues?

PART A: HUMAN CELL LINES

☐ Yes ☐ No Does this project involve human cell or tissue cultures (primary OR immortalized cell lines/strains) that have been documented to be free of bloodborne pathogens? If the answer is "yes," please answer question 1 below and attach copies of the documentation.

1) Please list the specific cell lines/strains to be used, their source and description of use.

<table>
<thead>
<tr>
<th>CELL LINE</th>
<th>SOURCE</th>
<th>DESCRIPTION OF USE</th>
</tr>
</thead>
</table>

Add New Row

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2) Please refer to the ISU “Bloodborne Pathogens Manual,” which contains the requirements of the OSHA Bloodborne Pathogens Standard. Please list the specific precautions to be followed for this project below (e.g., retractable needles used for blood draws):

Anyone working with human cell lines/strains that have not been documented to be free of bloodborne pathogens is required to have Bloodborne Pathogen Training annually. Current Bloodborne Pathogen Training dates must be listed in Section I for all Key Personnel. Please contact Environmental Health and Safety (294-5359) if you need to sign up for training and/or to get a copy of the Bloodborne Pathogens Manual (http://www.ehs.iastate.edu/bs/bbp.htm).

PART B: HUMAN BLOOD COMPONENTS, BODY FLUIDS OR TISSUES

☐ Yes ☒ No Does this project involve human blood components, body fluids or tissues? If “yes”, please answer all of the questions in the “Human Blood Components, Body Fluids or Tissues” section.

1) Please list the specific human substances used, their source, amount and description of use.

<table>
<thead>
<tr>
<th>SUBSTANCE</th>
<th>SOURCE</th>
<th>AMOUNT</th>
<th>DESCRIPTION OF USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.g., Blood</td>
<td>Normal healthy volunteers</td>
<td>2 ml</td>
<td>Approximate quantity, assays to be done.</td>
</tr>
</tbody>
</table>

Add New Row

2) Please refer to the ISU “Bloodborne Pathogens Manual,” which contains the requirements of the OSHA Bloodborne Pathogens Standard. Specific sections to be followed for this project are:

FOR ENVIRONMENTAL HEALTH AND SAFETY USE ONLY

Signature of Biological Safety Officer __________________________ Date __________________________

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References


Phau, I., & Poon, S. M. (2000). Factors influencing the types of products and services purchased over the Internet. Internet Research, 10(2), 102-113.


Workman, J. E. & Studak, C. M. (2005). Relationships among fashion consumer groups,
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