Consumer Response to Online Visual Merchandising Cues: A Case Study of Forever

21

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Abstract

The purpose of this study is to explore the effect of online visual merchandising cues on consumers' approach and avoidance behavior and identify the relative importance of the various visual merchandising cues to consumers. The study took a case study approach and used Stimulus-Organism-Response framework. Definition of online visual merchandising cues and a comprehensive and systematic list of visual merchandising cues were given as the stimuli. Emotional variables: pleasure and arousal and cognitive variables: perceived ease of use and usefulness were acting as organism. Approach-avoidance is the only variable in response. Data was collected via an online questionnaire. A total of 127 eligible data from 165 responses were remained for data analysis. Multiple regression and Sobel test were used for hypotheses and mediation effect testing. Findings showed the importance of interactivity of product presentation and layout of website even with the presence of other online visual merchandising cues. The mediation effects are significant for pleasure on the link between interactivity of product presentation and approach-avoidance behavior and for perceived ease of use on the link between layout of the website and approach-avoidance behavior. The finding supported the adoption of ease of use and usefulness from Technology Acceptance Model into the S-O-R framework. It also gave implications for retailers of how to use interactivity of product presentation and layout of website to attract consumers.

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Chapter 1 Introduction

This thesis aims to explore online visual merchandising variables and how they affect consumers' behavior using the Stimulus-Organism-Response framework.

This chapter introduces the research topic and includes four sections: (1) background information on the current online retail industry in the United States; (2) the problem statement; (3) the research purpose; and (4) introduction of the case selected.

Chapter 2 presents a review of the literature, Chapter 3 presents the research methods, Chapter 4 presents the findings, and Chapter 5 discusses the research findings and potential implications.

Background: Online retailing

As online retailing become essential to our daily life, it is not only dynamic but also becoming more diverse (Williams, 2014). Coming along with the development of worldwide internet and technology, consumers widely and quickly accepted online retailing since it provided a great variety of products and stores and let them shop at any time and place, as long as they had a digital device and internet connection (Kalelkar, Kumbhare, Mehta, & Kar, 2014). According to Mintel (2013), online retailing's share of the total retailing market increased from 3.6% in 2008 to 5.2% in 2012 (Mintel, 2013). The total sales of US online retailing will reach $361.9 billion in 2016 according to eMarketer's prediction based on the sales and reports for major

online retailers (eMarketer, 2012). The consumer survey data from Mintel indicated that convenience is the no. 1 factor that attracts consumers to shop online. At the same time design of websites also has some effect on consumers' attitudes towards the online store (Gregg & Walczak, 2010). According to eMarketer (2012) online sales of apparel and accessories lead the growth of online retailing. The quick growth in apparel and accessories resulted from improvements in the product displays and policies of online stores (eMarketer, 2012).

Problem statement

This research was inspired by research on atmospherics and visual merchandising in both traditional and online retail environments. As shopping online is getting more common in our daily life and visual appeal on the screen is one of few ways to communicate information to consumers in online retailing, there is a need to discover which visual merchandising variables have significant effects on consumers' shopping behavior in online shopping environments. However, there is lack of research about online visual merchandising cues' relationship with consumer behavior in a systematic manner. Therefore, this study is designed to explore how visual merchandising cues affect consumers' approach and avoidance behavior.

Visual merchandising and atmospherics cues in brick-and-mortal retail environments were covered extensively in previous research. Research on atmospherics can be traced back to the 1970s. Kotler (1973) was the first author that used and defined the term "atmospherics" (Turley and Milliman's, 2000). The use of

the term "visual merchandising" appeared in research later in the 1990s, but the definition of it varied. Atmospherics research on traditional retail environments has had a longer history, a plethora of research has explored the effect of various atmospheric cues on consumer behavior and their importance to retail strategies. A comprehensive review of the past research has been conducted by Turley and Milliman (2000) on the effects of atmospherics on buyer behavior. Atmospheric variables have been systematically summarized into five major categories (external variables, general interior variables, layout and design variables, point-of-purchase and decoration variables and human variables) with 57 smaller components.

Online retailers have different challenges from traditional retailers. They can carry more assortments and have wider access to customers in different geographic areas, but in turn this means that consumers also have more choices and it is easier for them to switch from one website to another to find different merchandise that they want (Ha, Kwon, & Lennon, 2007). It is crucial then to attract consumers' attention and retain consumers.

Unlike traditional retail environments which can appeal to all five senses, visual communication through the screen is crucial for online retailers who have limited control of other senses (Eroglu, Machleit, & Davis, 2001). Although online atmospherics were studied in previous research, online visual merchandising and its effects on consumers hasn't been systematically tested, which leaves a gap that this research aims to fill in.

It is important to adopt a comprehensive framework of online visual

merchandising cues to explore their varied influences on consumer behavior. Ha et al. (2007) did a content analysis to explore the existing online visual merchandising strategies in online apparel websites and developed a systematic list of online visual merchandising cues. They investigated 50 US and 50 Korean websites and grouped visual merchandising items into three general factors, such as online path finding assistance, environment and manner of product presentation (Ha et al., 2007). They predicted that these three factors might have different influences depending on whether consumers are browsing or purchasing, but they did not conduct further research about online visual merchandising cues' effect on consumers' shopping behavior based on this content analysis. Instead, they used a completely different model of treating online visual merchandising cues as high and low task relevant cues to test their effect on pleasure and arousal in purchasing and browsing situations (Ha & Lennon, 2010). In the study, significant effects of low task relevant cues (information or graphs that not related to shopping goals) on pleasure and arousal were found in low situational involvement while high task relevant cues (texts and graphs that help consumers to make purchase decision) can affect pleasure and arousal only under high situational involvement (Ha & Lennon, 2010). In addition, Manganari, Siomkos, Rigopoulou, and Vrechopoulos (2009) provided a conceptual framework for studying the impact of online store atmosphere on consumer behavior based on the Virtual Component Presentation Framework (VCPF) proposed by Vrechopoulos, O'Keefe, Doukidis and Siomkos (2004). The conceptual framework was named Online Store Environment Framework (OSEF) which contained four main

components: Virtual layout and design, virtual atmospherics, virtual theatrics and virtual social presence (Manganari et al., 2009). However, none of that framework is applicable to this research. The online visual merchandising taxonomy from Ha et al.'s（2007）content analysis had too many specific terms for certain websites which lacks the power of generalization while the categories in the later research, high and low cues, were too general, limiting implications. Moreover, the atmospheric framework developed by Manganari et al. (2009) contained atmospheric variables that are not related to online visual merchandising. So a systematic understanding of online visual merchandising and an improved model of online visual merchandising cues are necessary to guide this study.

Research purpose

The purpose of this study is to explore the effect of online visual merchandising cues on consumers' approach and avoidance behavior and identify the relative importance of the various visual merchandising cues to consumers in order to provide guidance and insights for online visual merchandisers and researchers. There are two main research questions in this study:

(1) What is the predictive power of the various visual merchandising cues in an online shopping environment for consumers' approach and avoidance behavior?

(2) How does the Stimulus-Organism-Response framework explain the mediating effect of the emotional and cognitive factors between the visual cues and consumers' approach and avoidance behavior?

A case study: Forever 21

A case study was the best method for this study because according to Yin (2009), cases studies can be applied when: "(1) 'how' or 'why' questions are being posed, (2) the investigator has little control over events, and (3) the focus is on a contemporary phenomenon within a real-life context" (p.1). This study explores how online visual merchandising cues affect consumers' behavior which represents a contemporary real-life context. But most importantly, as the online visual merchandising design differs among online retailers, it is difficult for the researcher to exert experimental control in this empirical study. Thus, a case study of a popular online store was deemed appropriate for the purpose of this research.

There are two main reasons that Forever 21was selected in this study:

College students are an important market segment to target because they have greater internet access than other population segments and are eager to shop online (Seock & Bailey, 2008). Thus, fast fashion brands that targeted this young group loving trendy but inexpensive clothes are good candidates to be the case for this study. Of major fast fashion online retailers such as Gap, H&M, Uniqlo, Forever 21 and Zara, Forever 21 was selected as the best choice as its online visual merchandising is interactive and interactivity is one of the important online visual merchandising cues. Interactivity of a web site can increase the communication between consumer and the website; provide customized information; make image manipulation possible and

entertain customers (Fiore et al., 2005). Overby and Lee (2006) pointed out that interactivity is the one under researched concept that can be influential to online shopping behavior because it could help consumers to better access to the website and have higher control.

Forever 21 is considered as a fast fashion brand and a favorite of young consumers who have limited budgets for chic clothing (Comunale, 2008; Doeringer & Crean, 2006). Forever 21 not only has great success in its brick-and-mortar stores but also in its online store. Forever 21 was founded in 1984 in Los Angeles with the name Fashion 21 and it grew fast and eventually changed its name to Forever 21("history and heritage,"n.d.). Since 1989, Forever 21 became a specialty store in major mall locations nationwide ("history and heritage,"n.d.). Forever 21 now ranks as the 122nd largest private company in America and recently expanded its market in Asian countries such as Japan, China and India ("Forever 21,"n.d.). In addition, Forever 21 started its e-commerce site (see figure 1) in 2003 before its competitors Zara and H&M, which launched their American e-commerce sites in 2011 and 2013 ("history and heritage,"n.d.). The success of Forever 21's online store helped it to compete with strong competitor H&M in the US market (Hendriksz, 2013).
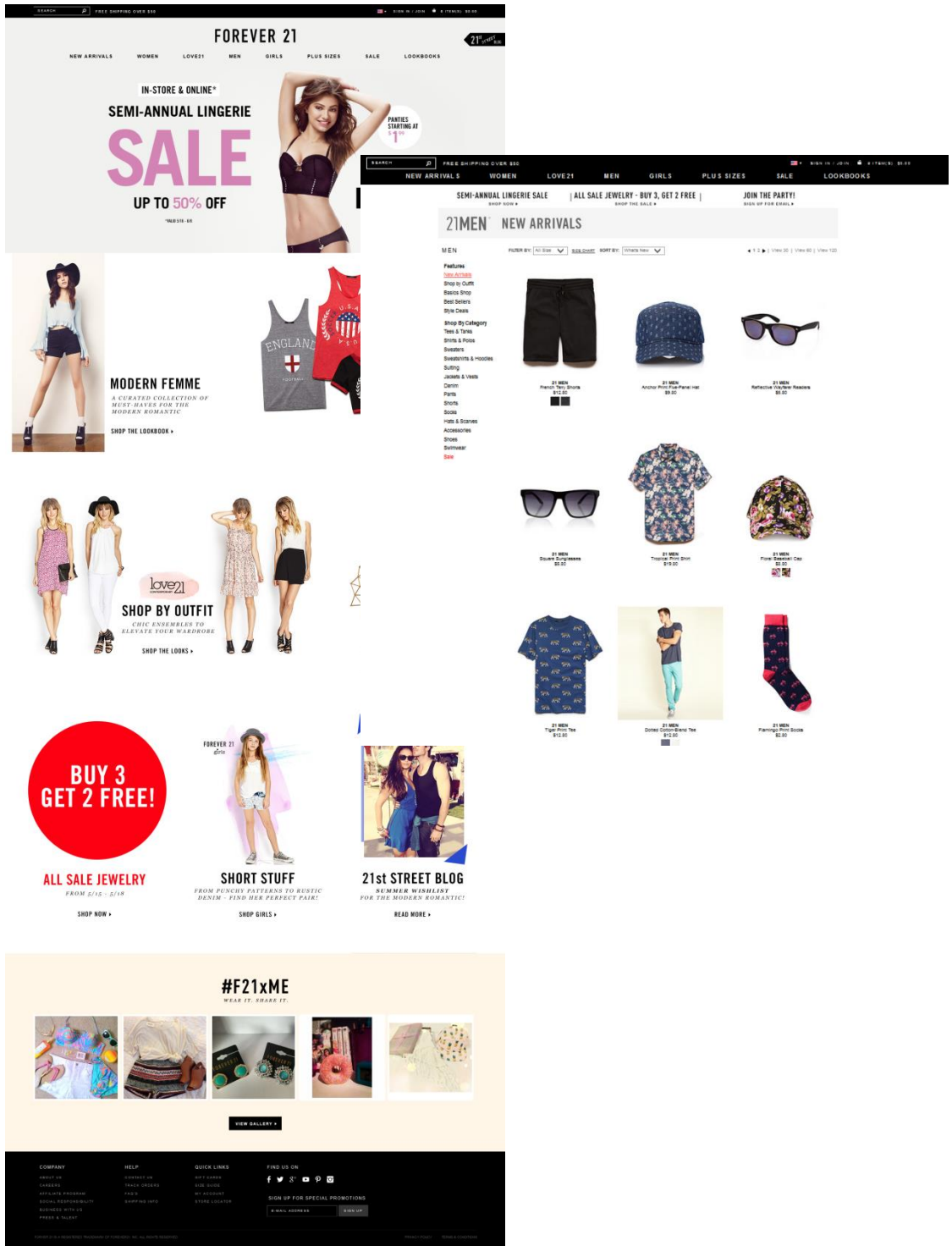
Figure 1. Screen shot of Forever 21 online store captured on May 18th

Chapter 2 Literature Review

This research aims to explore the relationship between online visual merchandising cues and consumers' emotional and cognitive factors and approach-avoidance behavior by applying the Stimulus-Organism-Response framework. A comprehensive list of online visual merchandising cues was identified from the literature. Relevant literature is reviewed below, along with the development of my hypotheses:

Brick-and-mortal Store Atmospherics

Kotler (1973) defined atmospherics as the design of store environment aiming to affect consumers' emotional responses and influence their purchasing behavior. Atmospherics was seen as an important marketing tool and attracted many researchers to study the impact of atmospheric cues on consumer behavior (Kotler,1973; Manganari, et al., 2011).

According to the review conducted by Turley and Milliman (2000) terms like environmental psychology, servicescapes and shelf space all have been used to explore atmospherics in brick-and-mortar stores. Berman and Evans (1989) divide atmospheric variables into four categories: the exterior, the interior, layout and design, and point-of-purchase and decoration variables. In the store exterior category, they included the storefront, entrances, display windows, physical characteristics of the building (e.g. height and size), surrounding area, and parking; the store interior includes flooring, colors, lighting, scents, sounds, fixtures, temperature, merchandise,

and cleanliness; layout and design variables control "the allocation of floor space";
point-of-purchase and decoration variables includes point-of-purchase displays, signs,
wall decorations, certifications, pictures and artwork, price and product displays, and
so forth (Berman and Evans, 1989; Turley and Milliman, 2000). Turley and Milliman
(2000) added one more category-- human variables related to other shoppers and retail
employees' influences. These atmospheric variables' effect on consumers' shopping
time, approach-avoidance and purchasing behavior were examined in the past studies
(Turley & Milliman, 2000). The findings of those studies indicated that retail
atmospherics such as color, music, lighting and retail salespeople can have a great
influence on consumers' purchasing and approach-avoidance behavior (Turley &
Milliman, 2000). Research also addressed store atmospheric cues' effect on
consumers' emotions and their perception of the store (Chebat & Michon, 2003;
Michon, Chebat, & Turley, 2005; Walsh, Shiu, Hassan, Michaelidou, & Beatty, 2011).
In retail malls, ambient odor could positively influence shoppers' perceptions and
affect when the human and spatial densities were appropriate (Michon, Chebat &
Turley, 2005). In addition, in-store music can increase store loyalty and this
relationship was mediated by pleasure and arousal (Walsh et al., 2011).

Brick-and-mortal Store Visual Merchandising

As an important component of store atmospherics, visual merchandising is a
visual communication tool of product and/or brand to deliver the appropriate message
and store image which will lead to a positive psychological or behavioral outcome for

consumers (Kerfoot, Davies, & Ward, 2003). In addition, McGoldrick (2002) described visual merchandising as "one of the visible elements of positioning strategy." Pegler (1992) defined visual merchandising as "product presentation that communicates product concepts with customers in order to optimize product sales and profits." Jung (2012) extended the definition of visual merchandising with details, he stated that visual merchandising includes "appearance, window, indoor decoration, shop layout, fixtures, lighting and so on of the shop and accommodates music and scent that appeal to customers' other organs."

There have been discussions of the dimensions and usage of visual merchandising in many previous studies, though some of them call it "physical surroundings" or "retail environment" instead of visual merchandising and display (Bitner, 1992; Davies & Ward, 2005; Grewal & Baker, 1994). Omar (1999) categorized visual merchandising together with point-of-sale display and architectural display in interior display. However, Mower, Kim and Childs (2012) showed that store exteriors, especially window displays giving customers the first impression of the store, could also be part of visual merchandising. Kerfoot et al. (2003) summarized key facets of visual merchandising from literature: layout, fixturing, merchandise, presentation techniques, color and packaging. In addition, they proposed visual merchandising as the visual aspects of the totality of merchandising within the store (Kerfoot et al. ,2003). Based on that, Davies and Ward (2005) selected general look, color of the merchandise, merchandise display/presentation, style of the fixtures, the materials

used in the fixtures and fittings and lighting as elements for their visual merchandising study.

There are also studies that only focus on one dimension's visual influence. Cant and Hefer (2013) showed the significant effect of color and stated that "a prominent visual stimulant and important aspect of visual merchandising displays was color, which creates visual attraction and stimulation." Fixtures can help to create various visual stimuli from color, contrast, height and depth (Shepard & Shepard, 2012). The different retail spaces or store layouts can change the shopping experience and purchase tendency (Soars, 2009).

In this study, visual merchandising cues were understood or defined as the visual stimuli that communicate product information and store image to consumers in the retail environment.

Online Visual Merchandising Cues

Over the last decade, studies of visual merchandising variables have not only applied to brick-and-mortal store but also online shopping environments. Unlike brick-and-motor stores which can appeal to all five senses with social and structural elements, online retailing relies almost entirely on visual appeal via the screen, which makes visual merchandising more important for online retailing (Eroglu, Machleit, & Davis, 2001b). Hence, this study focuses on the visual merchandising part in online retailing contexts. Based on the reviews of atmospherics and visual merchandising's definitions and dimensions in brick-and-mortar stores and the definition of visual

merchandising as visual stimulius that communicate product information and store image to consumers in the retail environment in this study, reviews and discussions of online visual merchandising cues are given below.

Although online stores do have some attributes which differ from those of physical stores, visual merchandising in-store and online has the same goal: to bring consumers into the store and have them make a purchase (Ha et al., 2007). With the same goal, there are many common parts about visual merchandising in online and brick-and-mortal store. Physical store layout (product departments and merchandise directories) corresponds to layout and categorization in an online store website (Ha et al., 2007). The window display, promotion display and signage in physical stores have the same function as merchandising promotion cues online. All the techniques of product presentation in an online store function as fixtures and mannequins, lights and product grouping methods in brick-and-moral stores. Background colors and images on stores' websites can create a store's image as the color themes and all the graphics do in physical stores. Eroglu et al. (2001) stated that atmospheric cues need to be systematically listed in online retail environment just as they were in traditional brick-and-mortar retail environment in past research. Later, several online atmospheric and visual merchandising models were proposed.

Mckinney (2004) proposed 36 atmospheric variables (e.g. ability to subscribe to email promotion/mailing list, access to partners, site map, information on return policy, size charts and so on) after or "in order to conduct" conducting a content analysis of existing online stores and then grouped them into categories based on

Turley and Milliman's category for physical stores: external and internal variables, layout and design, point-of-purchase, and customer services (Turley & Milliman, 2000).

Using new metrics such as micro-conversion rates, Lee et al. (2000) defined four categories of web merchandising analysis:

1. Product assortment: "whether the products in an online store appeal to the visitors;"

2. Merchandising cues: "different ways Web merchants present and/or group their products to motivate purchase in online stores;"

3. Shopping metaphors: "different ways that shoppers use to find products of interest;"

4. Design features: "media type, font of text, size, color, location"(p.127).

Manganari et al, (2011) introduced the Online Store Environment Framework (OSEF).They divided online store environment into four components:

1. Virtual layout and design: grid layout, free-form layout, racetrack layout;

2. Virtual atmospherics: background color, color scheme, percentage of white space, background music, fonts, scent appeal, touch appeal;

3. Virtual theatrics: animation techniques, images, vividness, interactivity.

4. Virtual social presence: web counter, comments from other visitors, crowding. (p.1141)

Ha et al. (2007) did content analysis on a large amount of apparel websites and proposed three categories for visual merchandise elements for apparel websites:

1. Online path finding assistance: sitemap, search engine, merchandise categorization;

2. Environment: atmospheric features, sale/promotion signage, color;

3. Manner of product presentation: types of product view, product view presentation methods, detailed views, swatch, color presentation, product display method, mix and match. (p.448)

In some papers, online atmospheric variables were grouped as high task-relevant cues and low-task relevant cues and mainly focused on verbal content (Eroglu et al., 2001b; Eroglu et al., 2003). High task relevant cues are those that can help consumers to make purchase decisions such as price or   pictures of merchandise, while low task relevant cues include information or graphs not related to shopping goals such as background and fonts (Eroglu et al., 2001b).

In addition there is much related research about specific online retail visual merchandising techniques or cues' effect on consumer behaviors. Eroglu and Machleit (1990) argued that an overload of retail density can negatively influence consumers' internal states and subsequent shopping behaviors and outcomes. Similar to product density in brick-and-mortar stores, Soiraya, Mingkhwan and Haruechaiyasak, (2008) found that online retailing websites with good image alignment and text density can have better performance. Kim et al.,(2012) investigated consumers' preference for models' faces. When the model was presented in a lifestyle setting, consumers may also envision themselves in the same environment (Jeong et al., 2009). As online product presentation techniques became

diverse, interactive presentation methods such as image enlargement, presentation of different views, picture switch were examined in various research (Fiore & Jin, 2003; J. Park, Lennon, & Stoel, 2005; Jeong et al., 2009; Yoo & Kim, 2012). Research in website design showed that online website layout, font type, word style and color background are all important to consumers' decision making process (Hill & Scharff, 1997; Mandel & Johnson, 1999; Wu & Yuan, 2003; Griffith, 2005; Yoo, 2010; Biers & Richards, 2011). Visible promotion messages in online stores were studied and found to be not only attractive to consumers, but also to increase their impulsive purchase behaviors (Lepkowska-White, 2004; E. J. Park, Kim, Funches, & Foxx, 2012).

Proposed online visual merchandising cues model

This study compared several proposed online atmospheric and visual merchandising models and reviewed related research. After a review of the literature this study defined visual merchandising cues as visual stimuli that communicate product information and store image to consumers in the online retail environment. Seven online visual merchandising cues were proposed as key facets in online retail stores with three big categories

(1) product presentation: ways to present products' information;

(2) website visual design: visual aspects of design of the website;

(3) web advertising: promotional text, graphics, and banner ads on the website.

(see figure 2):
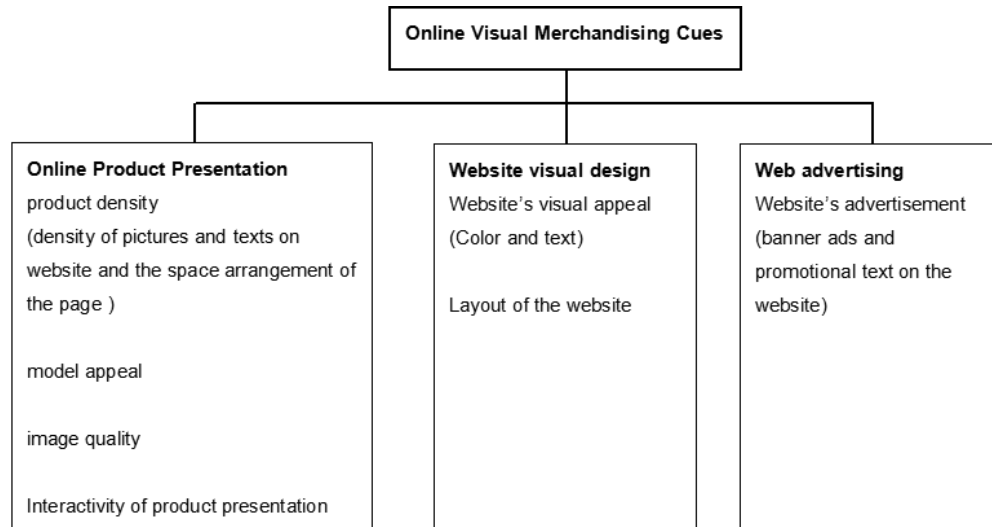
Figure 2. Online visual merchandising cues

Stimulus – Organism – Response framework

According to Jacoby (2002), the Stimulus-Organism-Response (S-O-R) model is the second generation of consumer behavior models which evolved from the simplistic Input-Output (I-O) model around the middle of the 1960s in social psychology. Compared to the I-O model, the S-O-R model emphasizes consumers' internal states more than either input or output factors (Jacoby, 2002). In 1974, Mehrabian and Russell proposed the S-O-R model as an approach to environmental psychology. Mehrabian and Russell (1974) considered the sensory variables and information rate in the environment as the stimulus. They stated that an individual's character will have an effect on the affective state, which then results in approach-avoidance response behavior (Mehrabian and Russell, 1974) (see figure 3).
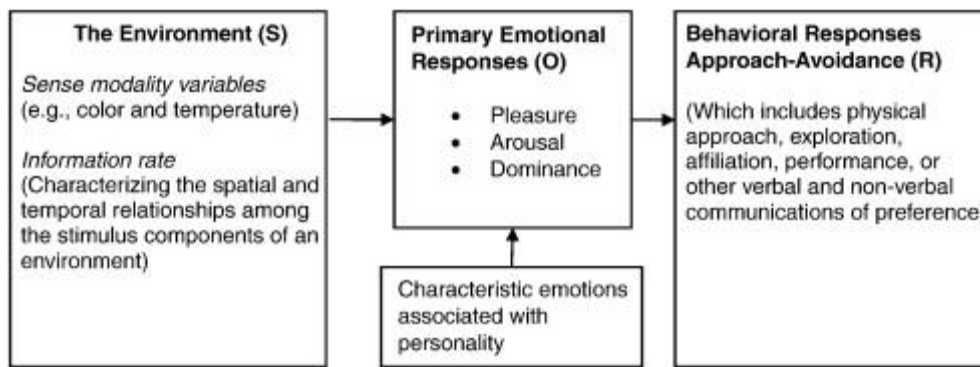
Figure 3. Stimulus-Organism-Response Model (Mehrabian & Russell, 1974, p.8)

Donovan and Rossiter (1982) adopted this framework for a retailing context. Since then the S-O-R model has been widely used to study the impact of store environments on consumer shopping behavior (Vieira, 2013). Recently, the S-O-R framework has also been applied to consumer online behavior research (Jeong, Fiore, Niehm, & Lorenz, 2009; Vieira, 2013).

Application of the Stimulus-Organism-Response framework to the current research

My research aims to explore visual merchandising cues and their effect on consumer behavior and thus adopted the Stimulus-Organism-Response framework which was popular widely used framework in studying consumer behavior in the retail environments. Online visual merchandising cues were chosen and organized based on a review of past studies as the stimuli which are also the independent variables. Both emotional and cognitive variables were included in the organism part. In the response part, the approach and avoidance behavior variable was used in this research. The review of the variables is given below.

Stimulus   Organism   Response

Independent variables	Mediating variables	Dependent variable
Online Product Presentation product density (density of pictures and texts on website and the space arrangement of the page) model appeal image quality Interactivity of product presentation **Website visual design** Website's visual appeal (Color and text) Layout of the website **Web advertising** Website's advertisement (banner ads and promotional text on the website)	**Emotion** 1.Pleasure 2.Arousal **Cognition** 1.ease of use 2.usefulness	Approach/avoidance

H1 H4 H5 H2 H3

Figure 4. Proposed conceptual model

Stimulus

Stimulus is defined as "an influence that arouses the individual" in the S-O-R

framework (Eroglu, Machleit, & Davis, 2001a). Donovan and Rossiter (1982) argued

that stimulus is any cue in the retail environment (i.e. color, music, lighting or signage)

that can evoke consumers' emotional response. In addition, novel and complex stimuli have a higher information load and lead to more emotional response from consumers than normal and simple stimuli (Mehrabian and Russell, 1974).

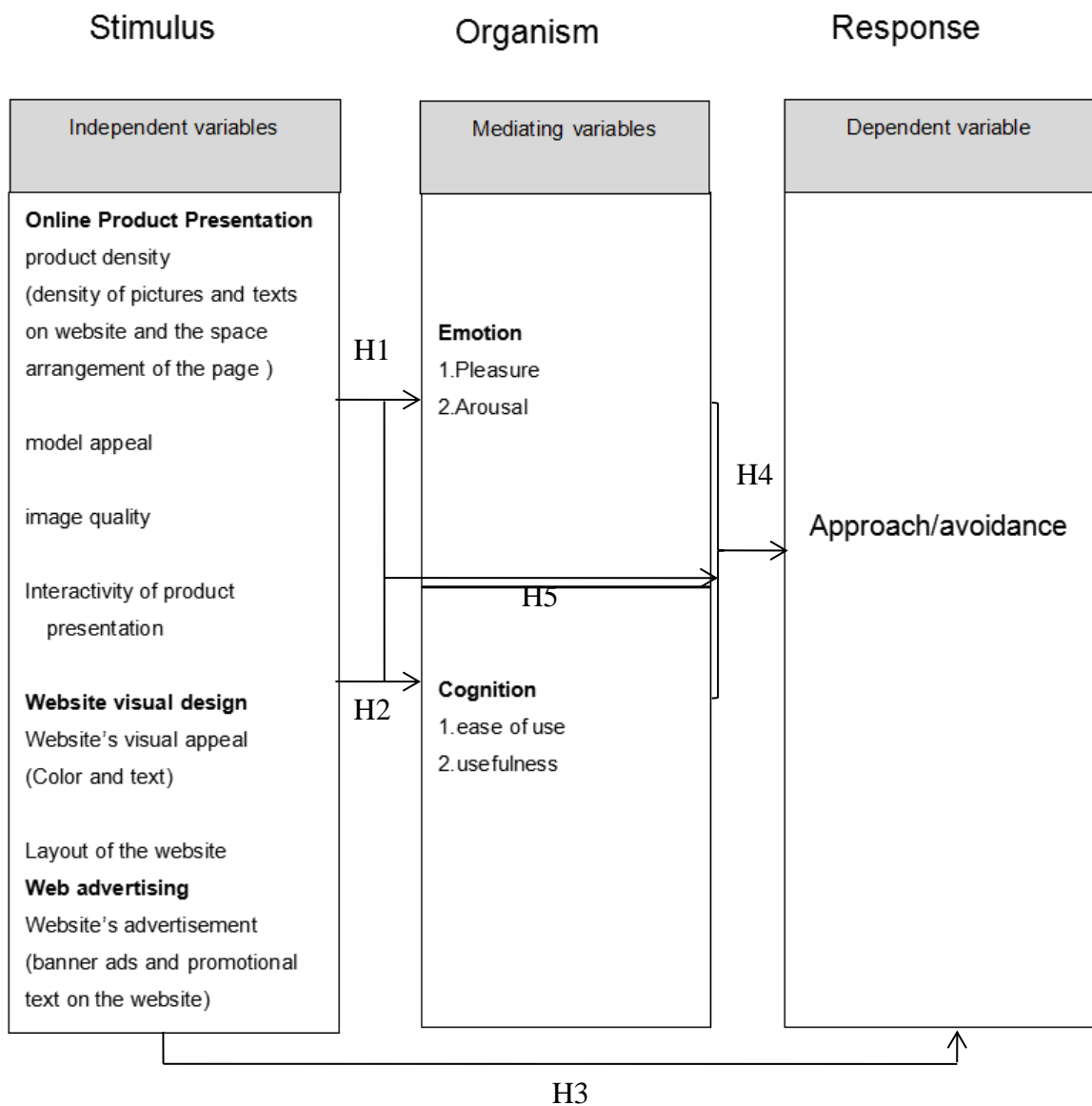In the contexts of online stores, Eroglu et al., (2001) define stimulus as "the sum total of all the cues that are visible and audible to online shopper." As stated in the introduction, this study only focuses on visual merchandising cues in online stores. The proposed online visual merchandising cues in the earlier session were applied in the S-O-R frame work as the stimulus part.

Organism

Organism is the second part of the S-O-R model. It consists of affective and cognitive intermediary states and mediates the relationship between the stimuli and responses in the S-O-R framework. At first researchers only focused on consumers' emotional reactions in the organism state. Later, a broader framework including both emotional and cognitive responses was advocated since there are reactions beyond emotional response (Sweeney & Wyber, 2002). Sherman, Mathur and Smith (1997) found that cognitive factors have large impacts on approach behavior like store selection and planned purchases, though the impact was not as great as emotional factors. Moreover, Eroglu et al. (2003) did an empirical test on their online atmospheric model in a designed fictitious online shopping website based on the S-O-R framework. Emotion and attitude were used in the study as the organism states and the result showed that atmospheric cues could affect consumers' approach and

avoidance behavior through both the affective and cognitive states (Eroglu et al., 2003). As a result, both emotional and cognitive variables were investigated in this study.

The emotional state. There were various dimensions in previous studies about consumer-based emotion, but the most commonly used ones were proposed by environmental psychologists – pleasure, arousal and dominance, which were known as the PAD dimensions of emotional reactions to environmental stimuli (Babin & Attaway, 2000; Mehrabian & Russell, 1974). Russell (1979) suggested that pleasure and arousal can cover all the appropriate emotional responses from consumers, so later on pleasure and arousal are most commonly used in atmospheric research instead of using all three dimensions. However, Eroglu et al., (2001) argued that dominance may be an interesting measurement for online shoppers in terms of a site's loading time or navigation design, they also recommended researchers use a more complex set of emotions instead of the simple PAD typology or to choose the important emotions from the entire set which could be related to various research topics (Eroglu et al., 2001).

Eroglu et al., (2001) argued the importance of dominance in online store functional design, but this research only focus on visual merchandising in online store, so pleasure and arousal were adopted as they are the most widely used dimensions to measure consumers' emotional state in visual merchandising. Pleasure means "the degree to which a person feels good, joyful, happy, or satisfied in a situation," whereas arousal measures "the degree to which a person feels stimulated, active, or

alert" (Menon & Kahn, 2002). According to findings from psychologists, pleasure can lead to more approach behavior and stimulation-seeking in the next task (Menon & Kahn, 2002). There are also interactive effects between pleasure and arousal. According to Mehrabian and Russell (1974), high arousal would result in approach behavior in a pleasant environment while it would also lead to avoidance behavior if the environment is unpleasant.

The cognitive state. Generally speaking, a cognitive state can be any internal mental stage from the acquisition, processing to the retention or retrieval of information (Eroglu et al., 2001). The purpose of cognitive processes is to help individuals achieve satisfaction or fulfill needs (Bayton, 1958). Studies about cognitive state can include all the mental phenomena (attitudes, beliefs, attention, comprehension, memory, judgment and thought) (Bayton, 1958; Eroglu et al., 2001). Eroglu et al., (2001) studied one of the cognitive state, consumers' attitudes towards online shopping processes in a goal-oriented shopping experience. Attitude test questions included whether consumers liked the process and their preference in online retailing (Eroglu et al., 2001). The results showed that online shoppers who have high involvement and atmospheric response formed negative attitudes if they got exposed to predominantly low task-relevant online cues and formed positive attitude if predominantly high task-relevant online cues were shown to them.

This research focused on two cognitive state: ease of use and usefulness. Perceived ease of use and usefulness were originally discussed in Fishbein & Azjen's (1975) Theory of Reasoned Action (TRA). Later on, they were adapted to the

technology acceptance model (TAM) which is one of the most widely used models in information systems research that tries to determine the main factors for new technology acceptance (Saadé & Bahli, 2005). Though past research have not tested ease of use and usefulness in the S-O-R framework, research showed certain online visual merchandising cues such as website visual appeal and layout of website affected consumers' perceived ease of use and usefulness, which could induce consumers' purchase behaviors (Hill & Scharff, 1997, Van der Heijden & Verhagen, 2004). And those findings essentially follow the S-O-R framework, which justified my adoption of the two variables ease of use and usefulness into the S-O-R framework in this study.

Perceived ease of use was described as "the degree to which a person believes that using a particular system is free of effort" and perceived usefulness was "the degree to which a person believes that using a particular system could enhance his or her job performance" (Saadé & Bahli, 2005). In an online shopping environment, ease of use and usefulness is related to the interaction with the online store while shopping (Childers, Carr, Peck, & Carson, 2002).

Response

Turley and Milliman's (2000) review about other studies addressed that past research explored not only many stimuli but also a wide variety of behavioral responses such as time spent in the store, total sales and impulsive buying behavior in retail environments. However, in general, it is all about positive response and negative

response. According to scientific psychology, approach behavior is "instigated or directed by a positive/desirable event or possibility," whereas avoidance behavior is "instigated or directed by a negative/ undesirable event or possibility" (Elliot & McGregor, 1999; Elliot & Thrash, 2002). In environmental psychology, approach behaviors are those positive responses to an environment while avoidance behaviors are shortening the time spent in the environment (Turley & Milliman, 2000). In general, approach and avoidance behavior can be one or any combinations of four behaviors. (Hoffman & Turley, 2002).They are:

1. The tendency to stay (approach) or leave (avoid);

2. The tendency to explore more and interact (approach) or ignore (avoid);

3. The tendency to communicate (approach) or stay alone (avoid);

4. The feel of contentment (approach) or frustration (avoid) (Hoffman & Turley, 2002).

Hence, approach-avoidance behavior is an effective way that can describe consumers' shopping behavior.

The influences of stimuli on organism and response

Literature have shown various relationship among visual merchandising cues, organism and response. Research conducted by Kim and Lennon (2008) found significant positive effect of visual presentation on consumers' affective and cognitive attitudes when they are purchasing apparel online. Ha and Lennon (2010) showed visual merchandising cues especially low task relevant cues can directly increase

consumers' approach behavior.

My review of online visual merchandising cues' relationship with organism and response is organized by the three categories of online visual merchandising cues as stimuli.

Product Presentation. Product presentation offers efficient ways to provide sensory or aesthetic information to help consumers make purchase decision (Jeong, Fiore, Niehm & Lorenz, 2009). Since consumers cannot touch and try on products when shopping online, product presentation can be a critical factor that affects consumer shopping outcomes (Kim, Kim, & Lennon, 2009). Efficient visual product presentation may evoke positive emotion and eventually increase positive shopping responses (Kim et al., 2009). In this research, product presentation includes product density, model appeal, image quality and interactivity of product presentation.

Product density in online retail environment is density of pictures and texts on website and the space arrangement of the page. In brick-and-mortar store environment, Eroglu and Machleit (1990) argued that an overload of retail density can negatively influence consumers' internal states and subsequent shopping behaviors and outcomes. Similar to product density in brick-and-mortar stores, online retailing websites with good image alignment and text density have better performance (Soiraya, Mingkhwan, & Haruechaiyasak, 2008).

Products presented by model cannot only help consumers to better see the product but also create a context for imagination. Studies showed consumers enjoyed apparel presented on models more than apparel presented flat and the model's face

also influences their affective states (J. Kim et al., 2009; Yoo & Kim, 2012). When the model was presented in a lifestyle setting, consumers may also envision themselves in the same environment (Jeong et al., 2009).

High image quality and interactivity of product presentation can help to give more details of products. A larger picture can draw more attention from consumers and create more imagination than a smaller picture (Percy & Rossiter, 1983; Song & Kim, 2012). At the same time a large picture and more images of different views of a product can increases mental intangibility (Song & Kim, 2012). Large sized images with movement can induce greater purchase intention through consumers and some image interactivity such as a mix and match function can increase consumers approach towards the online store (Fiore & Jin, 2003; J. Park, Lennon, & Stoel, 2005). Image enlargement and different views that provide more details of products can effectively provide aesthetic information to consumers and have positive influence in pleasure and arousal (Jeong et al., 2009). In addition, great online product coordination has a better chance to get positive consumer responses than uncoordinated product displays (Yoo & Kim, 2012).

Based on the reviewed extant literature about product presentation, the following hypotheses were made:

H1A: Product presentation (a) product density, (b) model appeal, (c) image quality and (d) interactivity of product presentation predict consumers' (i) pleasure and (ii) arousal.

H2A: Product presentation (a) product density, (b) model appeal, (c) image

quality and (d) interactivity of product presentation predict consumers' (i) perceived ease of use and (ii) usefulness.

H3A: Product presentation (a) product density, (b) model appeal, (c) image quality and (d) interactivity of product presentation predict consumers' approach-avoidance response.

Website Visual Design. Good website visual design should be based on appropriate web content: text, pictures, layout and color (Rosen & Purinton, 2004). Aesthetic forms of web design include "organized and systematic layout of items, legible font type and font size, and a clear text/background color combination" (Wang, Minor, & Wei, 2011). The website with higher visual aesthetics would be perceived as having more credibility and provide more satisfaction (Robins & Holmes, 2008; Wang et al., 2011). In this study, website's visual appeal and layout of the website are discussed in website visual design.

Early studies showed different font types, word styles, and color combinations would affect the readability of websites (Hill & Scharff, 1997). According to the study of Wu and Yuan (2003), the color and font of text will affect reading performance. The hue and design of website background can influence consumers' perception of the products' value when they make purchasing decisions (Mandel & Johnson, 1999). Consumers value products presented on a blue or purple background more highly than those displayed on other background colors (Biers & Richards, 2011). In addition, a concrete background will trigger higher mental imagery of products than a white background (Yoo, 2010).

A study about store layout indicated that a tree structured online store layout can stimulate higher levels of elaboration and get more positive response from consumers, because it's easy to use and goal oriented (Griffith, 2005). It shows the importance to design the website for consumers to access the information which could help their decision process (Griffith, 2005). In addition, website layouts perceived ease of use will affect consumers' pleasure and attitude which will influence their online response (Manganari, Siomkos, Rigopoulou, & Vrechopoulos, 2011).

Based on the review relating to website visual design, I hypothesized the following:

H1B: Website visual design (a) website's visual appeal and (b) layout of the website predict consumers' (i) pleasure and (ii) arousal.

H2B: Website visual design (a) website's visual appeal and (b) layout of the website predict consumers'(i) perceived ease of use and (ii)usefulness.

H3B: Website visual design (a) website's visual appeal and (b) layout of the website predict consumers' approach-avoidance response.

Web advertising. Website advertisement such as banner ads and texts that offer promotional messages (e.g. free shipping, discounts and coupons) can attract more consumers and enhance online retailers' competitiveness (Park & Lennon, 2009). A successful online retailer would not only have promotions emphasize the new and popular product but also sales information, because for consumers who are online bargain hunters the "visible selection, discounts, and special promotions (e.g., incentives and free gifts)" are very attractive (Lepkowska-White, 2004; Park, Kim,

Funches, & Foxx, 2012).

Positive affect from advertisement can encourage consumers to browse for more time and the inner states such as pleasure and arousal are related to impulse purchases (Gardner & Rook, 1988). Consumers are more likely to purchase products impulsively because of price or special promotions of the website while web browsing (Park et al., 2012). In addition, consumers would have more positive perceptions of product values with the price promotion advertisement while they do online apparel shopping (Park & Lennon, 2009).

Based on the review above, I hypothesized:

H1C: Website advertisement predict consumers' (i) pleasure and (ii) arousal.

H2C: Website advertisement predict consumers' (i) perceived ease of use and (ii) usefulness.

H3C: Website advertisement predict consumers' approach-avoidance response.

Mediation effect of organism between stimulus and response.

Past research concluded that consumers' approach or avoidance to the environment could be mediated by their emotional responses (Donovan & Rossiter, 1982; Holbrook & Gardner, 1993). Baker et al. (1992) showed the mediation effect of pleasure and arousal between store environment and consumers' willingness to purchase. Sherman et al.'s (1997) investigation of store's environment shows the visual aspects of store and social environment can have a positive impact on pleasure, which can encourage approach behaviors such as liking of the store and purchasing

more. In online retail environments, Ha and Lennon (2010) examined various online visual merchandising cues' impact on consumer pleasure and arousal under browsing or purchasing contexts. The results showed pleasure and arousal which are caused by visual cues were positively related to consumers' approach behavior and they mediated merchandising cues' effect on consumer response.

Research also showed cognitive state's mediation effect between environment and consumers' response (Sherman et al.'s,1997; Eroglu et al., 2003). In the Technology Acceptance Model (TAM), usefulness and ease of use can influence the acceptance and use of new technology (Childers et al., 2002). Research has shown the significant influence of perceived ease of use on people's intentions about visiting a website (Van der Heijden & Verhagen, 2004). According to Van der Heijden and Verhagen's (2004) research, ease of use had a significant effect on online store usefulness which makes a significant contribution to consumers' purchasing intention. Further, Gefen, Karahanna and Straub (2003) argued that ease of use and usefulness along with trust can explain a big portion of people's intended behavior in online shopping. Thus, I hypothesized:

H4: Consumers' emotional state (a) pleasure, (b) arousal and cognitive state (c) ease of use and (d) usefulness predict their approach-avoidance behavior.

H5: Consumers' emotional state (a) pleasure, (b) arousal and cognitive state (c) ease of use and (d) usefulness mediates the link between online visual merchandising cues and their approach-avoidance behavior.

Chapter 3: Methodology

This chapter presents my quantitative case study applying the S-O-R model. It includes the methods of questionnaire development, data collection and analysis.

Questionnaire Development

Two screening questions were asked to make sure that participants were over 18 and had online shopping experience. The online questionnaire contained several parts based on our research goal.

In the first part, some attitude and familiarity testing questions about Forever 21 were given. And then participants were asked to explore Forever 21's online store based on the instructions given to them before proceeding to the following questions. In the observation instructions, they were told to pay attention to the visual merchandising part of the online store (e.g. banner ads, messages, product pictures and so on) and they were encouraged to interact with the website as much as possible. In the second part, questions were about the relationships among the independent variables, mediating variables and dependent variables. Participants' emotional stages were tested first. After that, participants' opinions about online visual merchandising cues and their cognitive stage were asked. The final part of the questionnaire collected basic demographic questions such as age, income and participants' shopping behaviors both in daily life and during the observation.

Measurement Scale Development. The extant literature was reviewed for related scales in order to develop appropriate scales for this research. The first two parts of the questionnaire contained 7-Likert scale items adopted from past studies to measurement latent variables. They are slightly modified to fit the context of my research topic and revised based on suggestions from the pilot study.

Eroglu, Machleit and Davis's (2003) scale was employed to measure people's original attitude towards Forever 21. The scale has four items: favorable/unfavorable, like/dislike, negative/positive, and good/bad using a 7-point scale.

Independent variables and their measurement. Online visual merchandising cues were all measured using 7-point Likert scales (1= *strongly disagree*, 7=*strongly agree*). They were adopted or modified from single or multiple scales from the past research. The scales for interactivity and web advertising were adapted from Van and Verhagen's (2004) scales for measuring online store enjoyment and online store style as well as Wu, Lee, Fu and Wang's (2013) scales for measuring store atmosphere. Layout of the website was measured by the scales adapted from Koo and Ju's (2010) scales for menu design and Wu, Lee, Fu and Wang's (2013) scale for layout design. Koo and Ju's (2010) scales for website's graphics quality were adjusted to measure model appeal and product image quality. Website Visual Appeal and Merchandise density scales were adapted from Koo and Ju's (2010) scales for colors and Baker, Grewal and Parasuraman's (1994) scales for store design factor.

Table 1

Independent variables and measurement scales

Independent Variable	Scale	Survey Question
PD: product density		
(Koo & Ju, 2010; Baker, Grewal, & Parasuraman, 1994)	PD1	The product density is appropriate.
	PD2	The product density is visually appealing.
	PD3	The product density appeared organized.
MA: model appeal		
(Koo & Ju, 2010)	MA1	The models present the products appropriately.
	MA2	The models in the pictures are beautiful.
	MA3	The models of the website are visually comforting.
PI: product image quality		
(Koo & Ju, 2010)	PI1	The website looks nice because of the product image quality.
	PI2	The product image quality is good.
	PI3	The product image quality is visually comforting.
IPP: interactivity of product presentation		
(Van & Verhagen , 2004; Wu, Lee, Fu& Wang, 2013)	IPP1	Interactivity of product presentation is appropriate.
	IPP2	Interactivity of product presentation is lively.
	IPP3	Interactivity of product presentation is engaging.
	IPP4	Interactivity of product presentation is stimulating.
WVA: website's visual appeal		
(Koo & Ju, 2010; Baker, Grewal, & Parasuraman, 1994)	WVA1	The color theme and text of the website are visually appealing.
	WVA2	The color theme and text of the website are fashionable.
	WVA3	The color theme and text of the website are attractive.
LW: layout of the website		

(Koo & Ju, 2010; Wu, Lee, Fu& Wang, 2013)	LW1	The layout of the website is clean and neat.
	LW2	The layout of the website is organized.
	LW3	The layout of the website has good displays.
	LW4	The layout of the website is consistent with the overall style.
WA: website's advertisement		
(Van & Verhagen , 2004; Wu, Lee, Fu& Wang, 2013)	WA1	The banner ads and promotional text have clear messages.
	WA2	The banner ads and promotional text are knowledgeable.
	WA3	The banner ads and promotional text are engaging.

Mediating variables and their measurement. Donovan, Rossiter, Marcoolyn and

Nesdale's (1994) semantic differential items for measuring pleasure and arousal were

used to measure participants' emotional stages. Twelve items were asked in 7-point

scales. Six items measured pleasure: Unhappy-Happy, Annoyed-Pleased,

Dissatisfied-Satisfied, Melancholic-Contented, Despairing-Hopeful, Bored-Relaxed.

The other 6 items measured arousal: Sluggish-Frenzied, Dull-Jittery,

Unaroused-Aroused, Relaxed-Simulated, Calm-Excited, Sleepy-Wideawake.

Participants' cognitive stage was measured using Van and Verhagen's (2004) scale

measuring consumer's opinion of ease of use and usefulness of an online book store

in a 7-point scale.

Table 2

Mediating variables and measurement scales

Mediating Variable	Scale	Survey Question
P: pleasure		
(Donovan, Rossiter, Marcoolyn, & Nesdale, 1994)	P1	Unhappy-Happy
	P2	Annoyed-Pleased
	P3	Dissatisfied-Satisfied
	P4	Melancholic-Contented
	P5	Despairing-Hopeful
	P6	Bored-Relaxed
A:arousal		
(Donovan, Rossiter, Marcoolyn, & Nesdale, 1994)	A1	Sluggish-Frenzied
	A2	Dull-Jittery
	A3	Unaroused-Aroused
	A4	Relaxed-Simulated
	A5	Calm-Excited
	A6	Sleepy-Wideawake
USE: usefulness		
(Van & Verhagen , 2004)	USE1	Little information about the products- Much information about the prducts
	USE2	Uninteresting offers- Interesting offers
	USE3	Bad alignment with my interests- Good alignment with my interests
EOU: ease of use		
(Van & Verhagen , 2004)	EOU1	Hard to use- Easy to use

	EOU2	Bad representation of the products- Good presentation of products
	EOU3	Hard to navigate the site- Easy to navigate the site
	EOU4	Inflexible site – flexible site

Dependent variables and their measurement. Eroglu, Machleit and Davis's (2003) measurement scales for approach and avoidance behavior were used in the pilot study, but some wording was changed based on the comments from the pilot study to make the questions clearer.

Table 3

Dependent variables and measurement scales

Dependent Variable	Scale	Survey Question
AA: approach/ avoidance		
(Eroglu, Machleit, & Davis, 2003)	AA1	How much time would you like to spend with this website?
	AA2	Once at the site, how much did you enjoy exploring around?
	AA3	How much would you like to use this particular site while shopping?
	AA4	Once at the site, how much would you like to look around or explore the site?

Data collection

Before data collection, this study received approval from the University of Minnesota's Institutional Review Board. The consent form informed participants that their participation was voluntary and anonymous. Surveys were distributed fully

online via Qualtrics ™ online survey, so participants were required to have internet access to participate in the study. Sampling and data collection will be discussed separately for the pilot study and the main study.

Pilot Study. A pilot study was sent to 20 graduate students in the design, housing and apparel department and the mass communication department and 12 of them participated in the pilot study. These students were asked to take the survey and most importantly comment on questions. They were asked to make any suggestions or notes to the formatting or any problem with their understanding of the instructions and questions. 2 questions were revised for clarity.

Main study sample. The sample of the main study was drawn from college students. College students are ideal participants for this study because according to Mintel (2013), millennials tend to shop more frequently online than older age groups. A convenience sample of University of Minnesota students was obtained by email invitations. The email invitation contained the purpose statement of the study, participation notice, possible compensation and the link for taking survey.

Participants were recruited from 5 undergraduate level classes in the retail merchandising program. In 3 classes (RM 2215 introduction to retail merchandising, RM1201 Ethics- retail merchandising and RM4117 Retail Environments and Human Behavior), instructors approved sending surveys out and agreed to give extra credit to students if they participated in this study. In the two other undergraduate level classes (DES1101 Introduction to Design Thinking, RM3243 Visual merchandising), students could not get extra credit but they were added in a drawing to win $20 bookstore gift

cards. The survey was open from April 19th until May 8th. There were 165 surveys collected by the end of May 8th.

Data analysis

The 165 complete questionnaires were collected with the 25 incomplete ones. Incomplete questionnaires were those that had more than 6 unanswered questions (>10% of all questions). As there were students taking more than one of the five classes that I collected data from, 9 of them participated in the study twice and their duplicated responses were disregarded.

Thus, 131 responses were used for data analysis assumption check and 127 were remain for final analysis. SPSS version 21 was used for my primary analysis.

Multiple regression. Multiple regressions were conducted for the main data analysis. In addition, the Sobel test was used to test the mediation effect. Multiple regression analysis is widely applied to hypothesis testing in various research fields such as behavioral science, health sciences, education and business (Cohen & Aiken, 2013). As one of the goals of this research is to explore the relative importance of the identified visual merchandising cues to consumers' emotions, cognitions, and approach-avoidance behaviors, multiple regression is deemed appropriate in the exploration of the predicting power of the independent variables and testing the mediation effect of emotion and cognition.

Missing Value. Before the primary data analysis for independent, dependent and mediating variables, the hot deck imputation was applied to solve a couple of missing

values in the data. According to Andridge and Little (2010), hot deck imputation is "replacing missing values of one or more variables for a non-respondent (called the recipient) with observed values from a respondent (the donor) that is similar to the non-respondent with respect to characteristics observed by both cases (p. 40)." The hot deck imputation is one of the earliest methods of imputing missing data which is a common technique for dealing with item non-response (Howell, 2007; Andridge & Little, 2010). The hot deck imputation usually works well with a small amount of missing data (Hansen at al., 1953).

This study used sample surveys to explore the population quantities instead of focusing on single cases and the goal is to replace the missing values with possible values instead of having accurate prediction (Little & Rubin, 2002). The number of missing values in this study is less than 15 which is considerably small compared to the whole data set. Hence, hot deck imputation is an appropriate method for solving missing data in this study. Missing data were replaced by the mean of the same variable in 4 nearest cases in this research.

Reliability check. Reliability is important for interpreting test scores and effects (Henson, 2001). Internal consistency which assesses the homogeneity of a set of items is one of the basic methods for assessing the reliability of a measurement scale (Peter, 1979). Cronbach's coefficient alpha is the most popular measure for assessing the reliability of a multi-point items measurement scale and it is used in various areas such as psychology, sociology, counseling and marketing research (Peter, 1979; Cortina,1993). If Cronbach's alpha is large, then it means that a large portion of the

variance in the test can be explained by general and group factors instead of each item

(Cortina,1993).

<center>**Chapter 4: Results**</center>

This chapter presents the results of the study. Sample characteristics and general shopping behaviors are described. Five hypotheses were tested and results are discussed.

Description of the sample

Overall 127 responses were used in this study. However, students might chose "I prefer not to answer" for demographic questions, which made the total responses less than 127.

The majority (87.9%) of participants were female. All but one (99.2%) of participants were aged 18-28. Most (78.9%) of the respondents reported their annual income as less than $10,000, while there were 13.8% of the participants having annual income from $10,000 to $29,999 and 5.3% with annual incomes from $30,000 to $59,999, and 1.8% of participants with an annual income higher than $80,000. Ethnicity of participants was mainly Caucasian at 70.5% with Asian following it at 22.1%. Detailed characteristics of participants are presented in table 4 below.

Descriptive Data

Data about consumers' shopping behavior in their daily life and during the study was collected. The average amount of money participants spent buying clothes per month is $125.2 with minimum of $2 and maximum of $500. They purchased online quite often with the average frequency of 6.6 every 3 months. In terms of the online

retailer where they liked to shop, the result is surprising. Most participants (85.0%) chose the specialty online stores (e.g. Gap, H&M, Forever 21) followed with small boutique's online stores (44.9%). The big box online store (e.g. Target, Wal-Mart) and Department online stores (e.g. Macy's, JCPenny) only have 16.5% and 33.1% of participants respectively. It could result from the younger age group that we have for this study.

Specific questions about participants' attitude and familiarity with Forever 21's website and their shopping behaviors during their observation are also examined. Though only 8.7% of the participants reported that they never shopped in Forever 21's physical store before, 32.2% of them said that they never shopped in Forever 21's online store. This shows that Forever 21 still has great potential to attract more consumers to try their online channel. The average score for consumers to rate the familiarity of Forever 21 is 5.5 on a 7 point scale, which is little higher than their rating of the favorable (4.6) of Forever 21. It indicated that Forever 21 have a good brand familiarity, but the positive brand image is weaker than its awareness.

At the end of the survey, questions were asked about the number of pages that participants observed and also if they put any products into the shopping cart. Though there is no page number requirement for consumers to observe, 46.5% participants observed 3-4 pages and 39.4% of them put some products into their shopping cart.

Table 4

Sample Characteristics

Characteristic	Frequency	Percent
Gender	$n = 124$	
Female	109	87.9%
Male	15	12.1%
Age	$n = 126$	
18-28	125	99.2%
29-39	1	0.8%
Annual income	$n = 109$	
Less than $10,000	86	78.9%
$10,000-$29,999	15	13.8%
$30,000–$59,999	6	5.3%
$60,000–$79,999	0	0%
$80,000+	2	1.8%
Ethnicity	$n = 122$	
Asian	27	22.1%
Black/ African American	5	4.1%
Latino/Hispanic	4	3.3%
White/Caucasian	86	70.5%

Cronbach's alpha reliability

Usually Cronbach's alpha is considered as acceptable when it is larger than 0.70, (Cortina, 1993). In this study, there were 3-6 items in each variable and all Cronbach's alpha values were bigger than 0.79 which should be considered acceptable. Table 5 shows detailed reliability information for each variable.

Table 5

Reliability check

Variable	Number of items	Mean	SD	α
Product density (PD)	3	5.310	0.007	0.898
Model appeal (MA)	3	5.349	0.058	0.851
Product image quality (PI)	3	5.438	0.024	0.931
Interactivity of product presentation (IPP)	4	5.275	0.015	0.947
Website's visual appeal (WVA)	3	5.517	0.001	0.943
Layout of the website (LW)	4	5.515	0.004	0.921
Website's advertisement (WA)	3	5.186	0.026	0.861
Pleasure (P)	6	4.985	0.036	0.916
Arousal (A)	6	4.602	0.046	0.878
Usefulness (USE)	3	4.860	0.011	0.790
Ease of use (EOU)	4	5.532	0.048	0.880
Approach- avoidance (AA)	4	4.737	0.070	0.928

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

* Correlation is significant at the 0.05 level (2-tailed).

Test assumptions

Certain assumptions are made for the proper use of multiple regression. Violations of those assumptions would question the validity of the estimation of regression coefficients and the standard errors, which could raise concern of the conclusions made based on the test result about the relationship between variables (Cohen & Aiken, 2013). At the same time, violations of assumptions may provide clues to revise the model or find an alternative way to better analyze the data set (Cohen & Aiken, 2013). Basic graphics of original data were drawn to better explore the data and check the assumptions.

Explore linear relationship between Independent and dependent variables. Scatterplot graphs of each independent variable and dependent variable for hypothesis 3 were shown in figure 5. This scatterplot showed a moderate linear relationship between independent variables and dependent variables. Scatterplots of independent variables and dependent variables in hypothesis 1, 2 and 4 are also checked in the same way. The scatterplots all showed reasonable linear relationship among them.

Residual plot. Residual plot is the most important diagnostic plot to check residual constant variance (Faraway, 2002). The residual error plot shows how the residual errors are distributed for each possible predicted value of the dependent variable. Residual plots for all multiple regressions used for hypothesis testing were drawn and checked (see figure 6). In the residual plots, there is no curve, fanning shapes or unusual values and the residual error scattered relatively randomly. The plots indicated that there was no visual evidence against the assumption that the errors

have the same standard deviation and have mean 0. However, casewise diagnostics (standard deviation above or below the mean >3) showed 4 outliers (case 83, 93,100,121). The four cases were deleted before multiple regression was applied.

Assessing Normality. The normality of residuals can be assessed by a Q-Q plot (Faraway, 2002). The dots in the normal probability plots were all around the diagonal line (see figure 7). In the histogram of residuals, the residuals were not perfectly but roughly normal (see figure 8). Since the residual plots and histograms appear fairly normally distributed and only long-tailed distributions could cause a problem, it was not necessary to perform transformation (Faraway, 2002).

Random sample. The samples were randomly obtained via volunteer participation from undergraduate level classes.
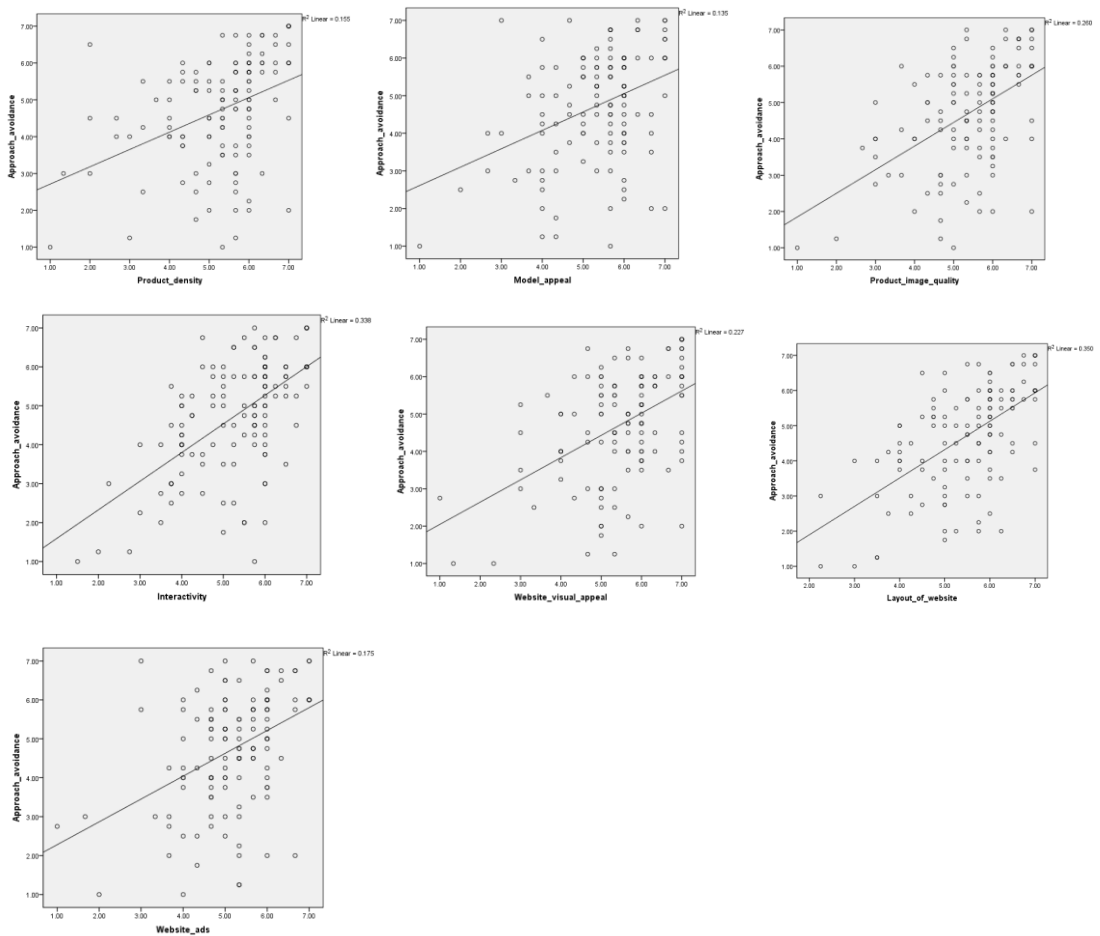
Figure 5. Linear relationship of Approach/ avoidance (AA) with Product density (PD), Model appeal (MA), Product image quality (PI), Interactivity of product presentation (IPP), Website's visual appeal (WVA), Layout of the website (LW) and Website's advertisement (WA).
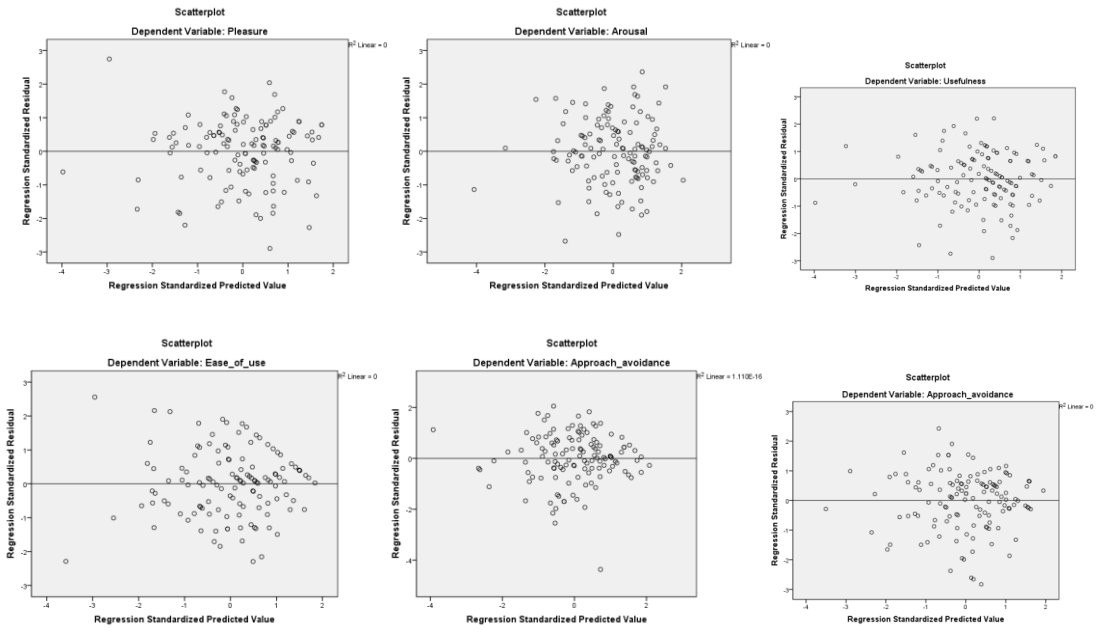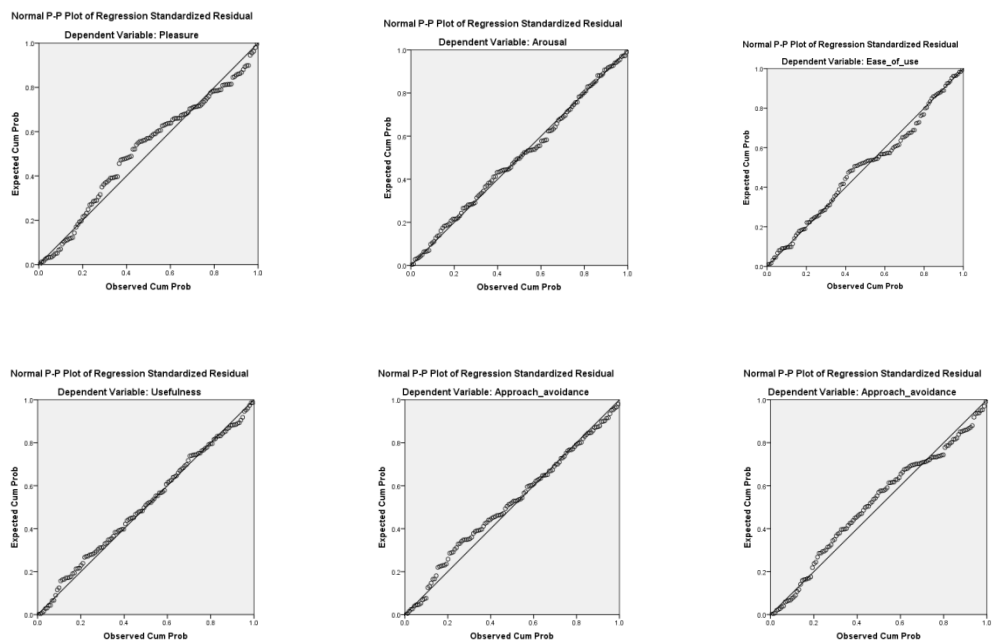
Figure 6. Residual plots
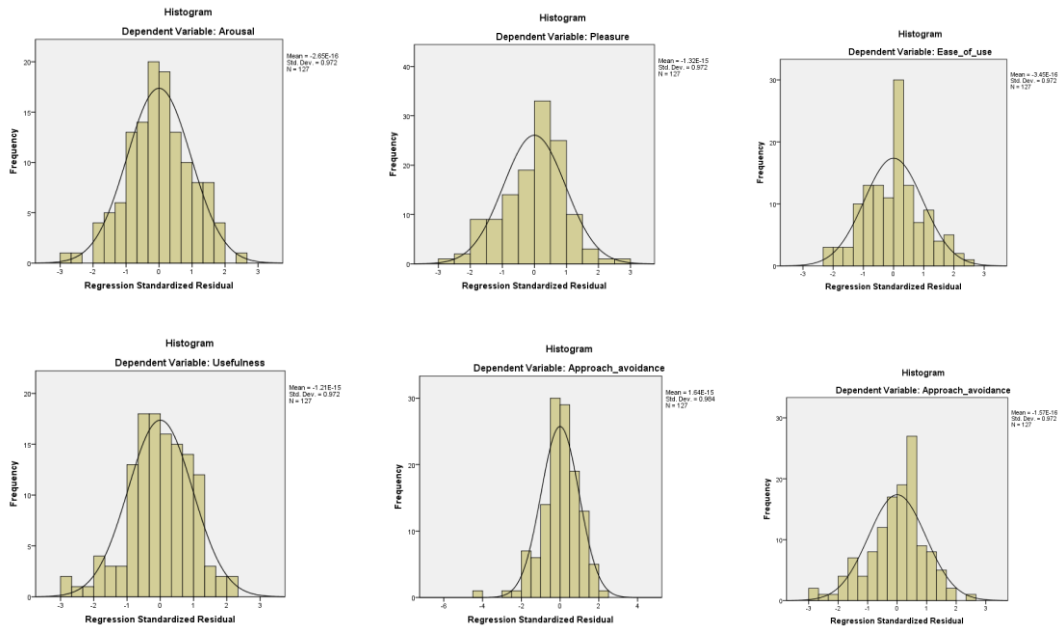

Figure 7. *Q-Q plots*

Figure 8. Histograms of residuals

Collinearity

Collinearity problem may lead to fail to find the significant factors and mislead the importance of predictors (Faraway, 2002). Correlation matrix of all explanatory variables was examined (see table 6). Simple correlation between explanatory variables that is larger than 0.8 would be considered as problematic (Farrar & Glauber, 1967). The highest correlation in the correlation matrix was 0.730 between product image quality and interactivity of product presentation, but it wasless than 0.80. So the correlations are not problematic from the correlation matrix.

There are two other collinearity statistics can help to assess whether colliearity problem exists. One is tolerance which indicating the percentage of variance in the predictor that cannot be accounted for by the other predictors and the other one is VIF

which means variance inflation factor and is the reciprocal of tolerance (Ho, 2006). It is suggested that high VIF values (larger than 10) indicate possible collinearity problem (Ho, 2006). VIF values obtained from all performed regression, the maximum VIF is 3.027 which is much less than alert value 10. The colliearity statistics indicated weak correlation between independent variables. In sum, there was no serious concern for collinearity.

Table 6

Correlations between independent variables

Variable	P	A	PD	MA	PI	IPP	WVA	LW	MA	USE	EOU
P	1										
A	.653**	1									
PD	.489**	.197*	1								
MA	.464**	.282**	.552**	1							
PI	.613**	.362**	.585**	.616**	1						
IPP	.624**	.441**	.533**	.622**	.730**	1					
WVA	.505**	.371**	.412**	.563**	.493**	.507**	1				
LW	.603**	.289**	.696**	.548**	.580**	.653**	.579**	1			
WA	.507**	.365**	.468**	.638**	.483**	.505**	.515**	.553**	1		
USE	.693**	.516**	.441**	.519**	.533**	.616**	.480**	.531**	.543**	1	
EOU	.625**	.297**	.582**	.455**	.562**	.581**	.459**	.725**	.401**	.610**	1

Note. ** Correlation is significant at the 0.01 level (2-tailed).   * Correlation is significant at the 0.05 level (2-tailed).

Analysis of Hypotheses

Multiple regression analysis was performed to test the hypotheses with 127 usable surveys after eliminating four outliers based on casewise diagnostics' suggestion from 131 samples. The result of each hypothesis analysis was presented below.

Hypothesis 1. Hypothesis 1 stated that seven visual merchandising cues (product density, Model appeal, Product image quality, Interactivity of product presentation, Website's visual appeal, Layout of the website and Website's advertisement) can predict both consumers' pleasure and arousal. Two multiple regressions were conducted to examine how online visual merchandising cues predict consumers' pleasure and arousal. Table 7 and 8 showed the test statistics from the regression which had pleasure and arousal as dependent variables respectively.

Both regressions are significant (F = 21.220, = 0.555, $p < 0.001$; F = 7.697, = 0.312, $p < 0.001$), but not all online visual merchandising cues had an influence on pleasure and arousal. Product image quality ($\beta = 0.226$, $p < 0.01$) and interactivity of product presentation ($\beta = 0.245$, $p < 0.05$) significantly predicted consumers' pleasure, while interactivity of product presentation ($\beta = 0.38$, p< 0.01), website's visual appeal ($\beta = 0.251$, $p < 0.05$) and website's advertisement ($\beta = 0.238$, $p < 0.05$) had significant influence on arousal.

Table 7

Online merchandising cues' effect on pleasure

	B	Std. Error	Beta	P-value
Product density	-0.01	0.084	-0.011	0.904
Model appeal	-0.104	0.094	-0.106	0.272
Product image quality	0.251	0.092	0.266	0.008**
Interactivity of product presentation	0.229	0.094	0.245	0.017*
Website's visual appeal	0.132	0.076	0.142	0.087
Layout of website	0.206	0.105	0.204	0.052
Website's advertisement	0.163	0.088	0.157	0.066

Note. ** p value is significant at the 0.01 level (2-tailed).

* p value is significant at the 0.05 level (2-tailed).

Table 8

Online merchandising cues' effect on arousal

	B	Std. Error	Beta	P-value
Product density	-0.157	0.092	-0.198	0.093
Model appeal	-0.143	0.104	-0.164	0.17
Product image quality	0.099	0.101	0.119	0.331
Interactivity of product presentation	0.314	0.104	0.38	0.003**
Website's visual appeal	0.206	0.084	0.251	0.016*
Layout of website	-0.057	0.115	-0.064	0.62
Website's advertisement	0.218	0.097	0.238	0.026*

Note. ** p value is significant at the 0.01 level (2-tailed).

* p value is significant at the 0.05 level (2-tailed).

Hypothesis 2. Hypothesis 2 proposed that the seven online visual merchandising

cues predict consumer's cognitive state: ease of use and usefulness.

Table 9

Online merchandising cues' effect on ease of use

	B	Std. Error	Beta	p-value
Product density	0.091	0.082	0.104	0.266
Model appeal	-0.023	0.091	-0.024	0.798
Product image quality	0.141	0.089	0.152	0.119
Interactivity of product presentation	0.094	0.092	0.102	0.307
Website's visual appeal	0.026	0.074	0.029	0.727
Layout of website	0.523	0.102	0.528	0.000**
Website's advertisement	-0.067	0.085	-0.065	0.436

Note. ** p value is significant at the 0.01 level (2-tailed).

     * p value is significant at the 0.05 level (2-tailed).

Table 10

Online merchandising cues' effect on usefulness

	B	Std. Error	Beta	p-value
Product density	-0.025	0.095	-0.027	0.793
Model appeal	0.019	0.107	0.019	0.857
Product image quality	0.076	0.105	0.077	0.469
Interactivity of product presentation	0.329	0.107	0.336	0.003**
Website's visual appeal	0.117	0.087	0.121	0.179
Layout of website	0.084	0.119	0.079	0.483
Website's advertisement	0.254	0.099	0.234	0.012*

Note. ** p value is significant at the 0.01 level (2-tailed).

     * p value is significant at the 0.05 level (2-tailed).

The multiple Regression (F= 22.053, = 0.565, $p < 0.001$) results showed that ease

of use was predicted only by layout of website ($\beta = 0.528$, $p < 0.001$) has a positive

effect on ease of use of the website (see table 9). The other multiple regression (F=

15.549, = 0.478, p <0.001) predicting usefulness showed the significant predicted effects from interactivity of product presentation (β = 0.336, p <0.01) and the website's advertisement (β = 0.234, p <0.05) but not from the other five variables: product density, model appeal, product image quality, website's visual appeal and layout of website (see table 10).

Table 11

Online merchandising cues' effect on approach- avoidance behavior

Independent variable	B	Std. Error	Beta	P-value
Product density	-0.072	0.122	-0.06	0.556
Model appeal	-0.231	0.137	-0.176	0.094
Product image quality	0.174	0.134	0.138	0.197
Interactivity of product presentation	0.364	0.137	0.292	0.009**
Website's visual appeal	0.18	0.111	0.146	0.107
Layout of website	0.469	0.152	0.349	0.003**
Website's advertisement	0.114	0.127	0.083	0.371

Note. ** p value is significant at the 0.01 level (2-tailed).

     * p value is significant at the 0.05 level (2-tailed).

Hypothesis 3. Hypothesis 3 proposed that the seven online visual merchandising cues predict consumers' approach and avoidance behaviors. Multiple regression (F= 15.134, = 0.471, p <0.001) showed that only two online merchandising cues are significant at the 0.01 p level for predicting approach-avoidance behavior: interactivity of product presentation (β = 0.292, p < 0.01) and layout of website (β = 0.349, p < 0.01) (see table 11).

Multiple regression was then performed with only 2 independent variables: interactivity of product and layout of website which showed the significance of predicting approach-avoidance behavior. Interactivity of product presentation and layout of website have beta value 0.34 and 0.39 respectively with both *p* value smaller than 0.01, which means they have similar power for predicting approach-avoidance behavior.

Hypothesis 4. Hypothesis 4 tested whether consumers' emotional state (pleasure and arousal) and cognitive state (ease of use and usefulness) influence their approach-avoidance behavior. This hypothesis was examined using one multiple regression (F= 65.658, = 0.683, p-value<0.001) testing the predicted effect of emotional and cognitive state on consumers' approach and avoidance behavior. The results showed strong significant positive effect of pleasure ($\beta = 0.481$, p<0.001) and ease of use ($\beta = 0.259$, p<0.001) on approach and avoidance behavior (see table 12).

Table 12

Emotional and cognitive state effect on approach and avoidance

	B	Std. Error	Beta	p-value
Pleasure	0.639	0.124	0.481	0.000**
Arousal	0.183	0.107	0.121	0.089
Usefulness	0.116	0.098	0.091	0.238
Ease of use	0.352	0.098	0.259	0.000**

Note. ** p value is significant at the 0.01 level (2-tailed).

     * p value is significant at the 0.05 level (2-tailed).

Hypothesis 5. Hypothesis 5 proposed a mediation effect of consumers' emotional

and cognitive state on the relationship between online visual merchandising cues and approach-avoidance behavior. There are three requirements in order to form a true mediation relationship: (1) Independent variable can significantly predict dependent variable; (2) independent variable is a significant predictor of the mediator; (3) mediator can significantly predict the dependent variable (Baron & Kenny, 1986). Based on the tests for hypothesis 1-4, there are only 2 sets of possible mediation effects: the mediation effects of pleasure on interactivity of product presentation and approach-avoidance behavior and the mediation effects of ease of use on layout of website and approach- avoidance behavior. The Sobel test, which is a method to test the significance of a mediation effect, was applied to these 2 sets (Sobel, 1982). The test need to be conducted with the same sufficiently large sample size, so bootstrapping was applied to draw 5000 sample indirect effects using the original sample data before the Sobel test.

Results of the Sobel test for 2 sets of mediation effects were shown in table 13 and 14. Results indicated that pleasure had a significant mediation effect on the link between interactivity of product presentation and approach-avoidance behavior (Z=6.8942, p-value<0.001). Ease of use also had significant mediation effect (z=4.5604, p-value<0.001) on the link between the layout of the website and approach-avoidance behavior. Both tests' bootstrapped 99% confidence intervals did not contain zero inside, which again confirmed the mediation effects (Preacher & Hayes, 2004).

Table 13

Sobel test result for pleasure mediation effect

Predict direction	Beta	Std. Error	t	p-value
IPP → AA	.7401	.0896	8.2610	.0000
IPP → P	.6095	.0636	9.5895	.0000
P → A	.9405	.0943	9.9728	.0000
Sobel's test score: 0.5732 (z=6.8942, p-value<0.001)				
bootstrapped 99% confidence intervals (0.3544, 0.8272)				

Note: Approach/ avoidance (AA), Interactivity of product presentation (IPP), Pleasure (P).

Table 14

Sobel test result for ease of use mediation effect

Predict direction	Beta	Std. Error	t	p-value
LW → AA	.8212	.0951	8.6379	.0000
LW → EOU	.7163	.0611	11.7231	.0000
EOU → AA	.6340	.1276	4.9683	.0000
Sobel's test score: 0.4542 (z=4.5604, p-value<0.001)				
bootstrapped 99% confidence intervals (0.2142, 0.7427)				

Note: Approach/ avoidance (AA), Layout of the website (LW), Ease of use (EOU).

Chapter 5 Discussion and Conclusion

This chapter discusses findings from last chapter to draw conclusions and suggests possible implications. Limitations and future study directions are also discussed.

Conclusions and implications

The purpose of this study was to explore online visual merchandising cues' effect on consumers' emotions, cognitions, and approach-avoidance behaviors.

This study identified online visual merchandising cues: visual stimuli that communicate product information and store image to consumers in the online retail environment. A comprehensive and systematic list of visual merchandising cues were summarized based on the literature. Seven online visual merchandising cues was identified in the list, including product density, model appeal, product image quality , interactivity of product presentation, website visual appeal, layout of the website, and website advertisement. These cues were further categorized into three general categories: product presentation, website visual design, and website advertising. The definition and list can provide future research a new way of approaching online visual merchandising problems.

This research hypothesized that the aforementioned seven online visual merchandising cues predict consumers' emotional state (pleasure and arousal) and cognitive state (perceived ease of use and usefulness). Hypotheses were partially

supported by the data. Results showed interactivity of product presentation had a significant positive effect on pleasure, arousal and perceived usefulness ($\beta = 0.245$, $p < 0.05$; $\beta = 0.38$, $p < 0.01$; $\beta = 0.336$, $p < 0.01$). In Jeong et al.'s (2009) study, they found that consumers' entertaining, escapist and esthetic experience from interactivity of product presentation affected pleasure and arousal, but they did not find significant effect from education experience on emotion. My findings showed that interactivity of product presentation also affected consumers' perceived usefulness, which could relate to the education experience that consumers had while they interacted with the website to learn more information about the products. The findings also showed that interactivity of product presentation always had a stronger effect compared to the other cues on pleasure, arousal and usefulness and the fact that it had significant effect on three of four organism states indicated the importance of interactivity to consumers' emotional and cognitive states among all seven visual cues. My results partially supported findings from past research that website's advertisement motivated consumers' impulsive behavior through arousal and pleasure (Gardner & Rook, 1988; Park et al., 2012). The results indicated that website's advertisement had a significant effect on arousal ($\beta = 0.238$, $p<0.05$) instead of pleasure and on perceived usefulness ($\beta = 0.234$, $p <0.05$). The advertisements in online stores are mostly about free shipping, promotion and new arriving products, which provide useful information and attract people's attention to certain products and discount. The pleasure of getting great saving or buying lovely products is hard to be detected in this study since participants were told to only browsing the store instead of actually purchasing

something. Further study could test if website's advertisement could have significant effect on pleasure while participants are having a purchasing goal. In addition, the findings showed that product image quality and website's visual appeal had no effect on consumers' cognitive state, even though past research found that product image quality and website's visual appeal can influence the cognitive state such as imagination and ease of read (Percy & Rossiter, 1983; Song & Kim, 2012; Wu and Yuan, 2003). Instead, the results showed that they influenced people's emotional state: product image quality influenced pleasure positively and website's visual appeal positively influenced arousal. It indicated that the cues related to aesthetic aspects of online store have more direct relationship to emotions. Interestingly, only layout of website ($\beta = 0.528$, $p < 0.001$) was significant in predicting consumers' perceived ease of use. And it is noticeable that it explained a relatively high portion of the variance of perceived ease of use with the R-squared value over 0.5, which revealed that layout of website is an important fact that influences consumers' evaluation to website's ease of use. Product density and model appeal were not significant for their effect on the emotional state or cognitive state with the present of other visual merchandising cues. One possible explanation for the insignificance result is that, the significant results of product density and model appeal were found through an experimental study which had control over other variables. Once other variables were involved in this empirical study, product density, model appeal and website's visual appeal were not as important as others.

This research also tested which visual merchandising cues in online shopping

environments predict consumers' approach and avoidance behavior. Only interactivity of product ($\beta = 0.342$, $p < 0.01$) and layout of website ($\beta = 0.390$, $p < 0.01$) were significant for predicting consumers' approach-avoidance behavior at the 0.01 level. Other online visual merchandising cues (product density, model appeal, product image quality, website's visual appeal and website's advertisement) were not significant. This result showed interactivity of product and layout of website are both more important than other online visual merchandising cues for consumers' approach behavior. Based on this result, online retailers might want to put more effort on the interactivity of product presentation and the layout of website to make consumers stay longer and browse more on the website. For example, this case study was of Forever 21's online store which contains many interactivity options such as mouse over, quick view, picture enlargement, model presentation of different views of product. However, there are still other interactivity features such as the mix and match feature which enables consumers to make style coordination with different products on the website and My Virtual Model feature which helps consumers to create a virtual model similar to themselves to better try on clothes (Fiore et al., 2005). A better interactivity strategy should not only provide more product information but also entertain consumers and give them the pleasure of controlling the website. Furthermore, the store layout design in many large online retailers is similar. However, the wide application of same type of layout design does not mean that it would be suitable to every online retailer. Online retailers could look into their target consumers' browse habit to determine the details of the layout design such as the number of categories,

filter design and switch between collections.

This research adopted usefulness and ease of use from the Technology Acceptance Model as cognitive state in the S-O-R model instead of only using emotional state in organism as did in many previous studies. The test results indicated that only pleasure ($\beta = 0.481$, $p < 0.001$) in the emotional state and ease of use ($\beta = 0.259$, $p < 0.001$) in the cognitive state had a strong effect on approach-avoidance behavior, which showed different results from the past research that arousal and usefulness also had significant effect on approach-avoidance behavior in online shopping (Ha and Lennon ,2010; Gefenel et al.,2003; Van der Heijden and Verhagen's, 2004). This might be because none of the past research put pleasure, arousal, ease of use and usefulness together as the organism state in the S-O-R framework. This research showed that self-assessed arousal and usefulness may not be as important as pleasure and ease of use in inducing consumers' approach behavior. When consumers feel pleasure and ease to use the website, the comfortable user interface would likely to make them browse longer and come back again. However, consumers' arousal and perceived usefulness maybe more important for them to make purchase decision. So future study could use consumers' purchase intention as the response variable in the S-O-R framework and test whether arousal and perceived usefulness can affect their purchase intention. In addition, the results of Sobel's test indicated that pleasure is a strong mediator between interactivity of product and approach-avoidance behavior and ease of use is a mediator between layout of website and approach-avoidance behavior. Fiore and Kim's study (2005) stated that both

pleasure and arousal mediated the effect between trying image interactivity and consumers' pleasure positive approach response. This research, however, showed only the mediation effect of pleasure, which consistent with Eroglu et al.'s research (2003) that pleasure had a stronger mediation effect then arousal on the relationship of online atmospherics and approach responses toward the site. Meanwhile, these mediation effects extended past research. In the Technology Acceptance Model, perceived ease of use and usefulness are mediators between external variables (i.e. individual system experience, age and education) and usage (i.e. usage volume and frequency) (Burton-Jones & Hubona, 2006). Instead of this mediation effect, this study showed ease of use could have another mediation effect for layout of website and approach-avoidance behavior and proved that the merge of usefulness and ease of use from the Technology Acceptance Model into the S-O-R model is meaningful and worth to explore. Moreover, the mediation effect emphasized that the key point of improving interactivity of product presentation is pleasure. Pleasure from the interactivity of product presentation could be improved on pure aesthetic part of the interactivity design (i.e. picture changing when consumers move the mouse is beautiful) and fun of playing with the interact functions. The mediation effect also emphasized that the direction of designing better website layout is pursuing ease of use. There are lots of store layout types discussed in the literature such as free-from and grid layout (Manganari et al., 2011). However, no matter which type of layout is applied, it should always have clear and precise navigation and category information to make it easier to use. Focus groups can also be conducted by online retailers with

their target consumers to better understand which kind of website layout would be considered as easier to use.

Limitation and future research

In this study, the researcher took a case study approach. Though researchers argued that a case study has the chance to reveal important information about a broader class, the ability to generalizing this study is still limited (Flyvbjerg, 2006).The results could be influenced by the good quality of Forever 21's online store's interactivity and visual design. Websites in different retail fields, such as grocery retailers, department stores, and specialty stores should be explored separately in order to see if the list of visual merchandising cues would actually change with different retail types and if the conceptual model is suitable to other types of online stores.

Another limitation is the sample group in this study. Since this study used a convenient sample of college students, it had a high concentration in white females with lower incomes but good education in the age group 18-28. Though this age group is the primary group for online shopping, the sample lacks diversity in many other aspects which are not reflected in the real world. If companies want to better understand how online visual merchandising cues affect their customers, more comprehensive marketing research based on this research's model should be conducted with a wider range of demographic areas.

Only interactivity of product and layout of website among seven online visual

merchandising cues were found to have significant effects on approach-avoidance behavior in this research. It would be meaningful for future research to test the same framework in a different context with different samples to confirm this result. Or another study with the same independent variables with different response variables could be conducted to see whether the other five online visual merchandising cues can affect other types of consumer behaviors.

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Appendix

Questionnaire

UNIVERSITY OF MINNESOTA
Driven to Discover℠

Default Question Block

Thank you for participating in this research!
Consent Form:
Consumer's Shopping Behavior and Online Visual Merchandising.
You are invited to participate in a pilot study of a research which is about online visual
merchandising cues and their effects on consumer's shopping behavior. We are seeking your input
to better understand consumer's online shopping behavior.
Background Information:
The purpose of this study is to explore online merchandising cues and how they related to consumer
shopping behavior.
Procedures:
If you agree to be in this study, we would ask you to follow the instruction to observe one online store.
Then you will need to answer the questions in the online survey based on your observation.
You will be asked questions regarding your observation of the online store, your shopping behavior, and
your demographics. Completion of the survey should take 10-15 minutes.
Please leave any comments or suggestions that you have in the end of the survey or type them
in the file as comments.
Risks and Benefits of Being in the Study:
The study poses minimal risks. Questions will ask for your opinion and shopping behavior. You may
refuse to answer any question that may make you uncomfortable.
Compensation:
Extra credit may be awarded for certain undergraduate courses, see your instructor for information.
Confidentiality:
The records of this study will be kept private and no identification information about you will be shared
by the researcher. In any sort of report we might publish, we will not include any information that will
make it possible to identify any subjects. In all cases, research records will be stored securely and only
the researchers will have access to the records.
Voluntary Nature of the Study:
All participation in this study is voluntary. The decision of whether or not to participate in the study will
not affect your relationship with your home facility (including staff and administration) or the University
of Minnesota. If you decide to participate in the study, you are welcome to refuse any answer or
withdraw your participation at any time without affecting the aforementioned relationships.
Contacts and Questions:
The researcher conducting this study is graduate student Jiajing Wu. If you have questions or comments
regarding this research, you are encouraged to contact by emailing Jiajing Wu at wuxx0713@umn.edu.
You may also contact her faculty advisor Dr. Wu Juanjuan by emailing wujj@umn.edu.
If you have any questions or concerns of the study that you would like to discuss with someone other
than the researcher, you are encouraged to contact the Research Subjects' Advocate Line, D528 Mayo,
*420 Delaware Street SE, Minneapolis, MN 55455, or (612) 625-1650.Please print a copy of this
information to keep for your records.*

**I have read the above information. If I have asked questions, I have received answers.
I consent to participate in the study.**

○ I agree

○ I disagree (ends survey)

I am 18 years of age or older.

○ Yes

○ No (ends survey)

Have you ever shopped online before?

○ Yes

○ No (ends survey)

If you can get extra credits from one of your classes, please make sure to fill in the information below. Otherwise please leave these 2 questions blank.

Please indicate which class you want to use the extra credits (e.g. RM2215)

[   ]

Please type your X500 below to get your extra credits (e.g. wuxx0713)

[   ]

This survey explores online visual merchandising variables and how they affect consumer behavior. You will be asked to observe an online store (3-6 minutes) as if you were shopping online. Then you will fill out a survey that asks your opinions about online visual merchandising. The survey also includes general shopping behavior questions (how often you shop online) and basic demographic questions, such as age, gender, income, and ethnicity. Finish the survey will take about 10-15 minutes.

Please answer the questions below and follow the instructions in the next page to observe an online store; this will take about 3-6 minutes.

How often do you shopp in Forever 21 **physical stores**?

○ Never

○ Rarely

○ Sometimes

○ Often

○ All of the Time

How many times have you shopped in Forever 21 **online store** before?

○ Never

○ 1-3

○ 4-10

○ >10

Please select a number on a scale from 1 to 7 below that best represents your attitude towards Forever 21(both online and brick and mortar stores) .

(For example: in the first line, if you felt the most unfavorable, choose number "1" that is the closest to closest to the word "ununfavorable". As the extent that you felt favorable increases, the number you choose should also increase. If you felt the most favorable, choose number "7" that is the closest to the word "favorable". If you felt unfavorable and favorable to the same extent, choose number "4".

	1 2 3 4 5 6 7	
unfavorable	○ ○ ○ ○ ○ ○ ○	favorable
dislike	○ ○ ○ ○ ○ ○ ○	like
negative	○ ○ ○ ○ ○ ○ ○	positive
bad	○ ○ ○ ○ ○ ○ ○	good
unfamiliar	○ ○ ○ ○ ○ ○ ○	familiar

Please continue to the next page for the observation instruction.

Instruction to browse the store
1.   Please click the link below to take you to the site:
http://www.forever21.com/Product/Main.aspx?br=f21

2.
For females: Please browse the banner ads(a picture with advertisement slogan on it) and messages in this page a little bit and then select the category of clothing under women.

For males: Please click the category of men and browse banner ads(a picture with advertisement slogan on it) and messages in this page.

3. Please go to the category list on the left and then choose one of the categories (such as tops, shirts) to continue your observation.

4. Please browse through a few pages in that category and place the mouse on the images of products that seem attractive to you.

5. Please interact with the website during your browsing as much as possible: you can use the quick views or put the product into shopping car.

After you finish observing, please continue to the next page to answer the questions.

Pleasure and Arousal
Please select a number on a scale from 1 to 7 below that best represents your feeling while exploring <u>visual merchandising</u> of Forever 21's online store.

(For example: in the first line, if you felt the most unhappy, choose number "1" that is the closest to the word "unhappy". As the extent that you felt happy increases, the number you choose should also increase. If you felt the most happy, choose number "7" that is the closest to the word "happy". If you felt unhappy and happy to the same extent, choose number "4".).

	1 2 3 4 5 6 7	
Unhappy	○ ○ ○ ○ ○ ○ ○	Happy
Annoyed	○ ○ ○ ○ ○ ○ ○	Pleased
Dissatisfied	○ ○ ○ ○ ○ ○ ○	Satisfied
Melancholic	○ ○ ○ ○ ○ ○ ○	Contented
Despairing	○ ○ ○ ○ ○ ○ ○	Hopeful
Bored	○ ○ ○ ○ ○ ○ ○	Relaxed
Sluggish	○ ○ ○ ○ ○ ○ ○	Frenzied
Dull	○ ○ ○ ○ ○ ○ ○	Jittery
Unaroused	○ ○ ○ ○ ○ ○ ○	Aroused
Relaxed	○ ○ ○ ○ ○ ○ ○	Simulated
Calm	○ ○ ○ ○ ○ ○ ○	Excited
Sleepy	○ ○ ○ ○ ○ ○ ○	Wideawake

Online visual merchandising cues
Please indicate how much you agree or disagree with the following statements on a scale from 1 (strongly disagree) to 7 (strongly agree) after you finish browsing the online store of Forever 21:

A.   Online Product Presentation

Please answer the following questions based on your evaluation of **product density** *(the number of pictures and space arrangement of the page)*

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
The product density is appropriate.	○	○	○	○	○	○	○
The product density is visually appealing.	○	○	○	○	○	○	○
The product density appeared organized.	○	○	○	○	○	○	○

Please answer the following questions based on your evaluation of **model appeal** *(the attractiveness of the model used to showcase the products).*

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
The models present the products appropriately.	○	○	○	○	○	○	○
The models in the pictures are beautiful.	○	○	○	○	○	○	○
The models of the website are visually comforting.	○	○	○	○	○	○	○

Please answer the following questions based on your evaluation of **product image quality**

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
The website looks nice because of the product image quality.	○	○	○	○	○	○	○
The product image quality is good.	○	○	○	○	○	○	○
The product image quality is visually comforting.	○	○	○	○	○	○	○

Please answer the following questions based on your evaluation of the **interactivity of product presentation** *(when you play your mouse over the picture and the interactivity of changing pictures)*

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Interactivity of product presentation is appropriate.	○	○	○	○	○	○	○
Interactivity of product presentation is lively.	○	○	○	○	○	○	○
Interactivity of product presentation is engaging.	○	○	○	○	○	○	○
Interactivity of product presentation is stimulating	○	○	○	○	○	○	○

B. Website Visual Appeal

Please answer the following questions based on your evaluation of the **website's visual appeal** *(the color and text of the website)*

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
The color theme and text of the website are visually appealing.	○	○	○	○	○	○	○
The color theme and text of the website are fashionable.	○	○	○	○	○	○	○
The color theme and text of the website are attractive.	○	○	○	○	○	○	○

Please answer the following questions based on your evaluation of **layout of the website**

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
The layout of the website is clean and neat.	○	○	○	○	○	○	○
The layout of the website is organized.	○	○	○	○	○	○	○
The layout of the website has good displays.	○	○	○	○	○	○	○
The layout of the website is consistent with the overall style.	○	○	○	○	○	○	○

C. Website advertising

Please answer the following questions based on your evaluation of the **website's advertisements** *(banner ads(a picture with advertisement slogan on it) and promotional text on the website)*

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
The banner ads and promotional text have clear messages.	○	○	○	○	○	○	○
The banner ads and promotional text are knowledgeable.	○	○	○	○	○	○	○
The banner ads and promotional text are engaging.	○	○	○	○	○	○	○

Online store usefulness

Please select a number on a scale from 1 to 7 below that best represents your perception of usefulness of the visual merchandising aspects of the online store of Forever 21.

	1 2 3 4 5 6 7	
Little information about the products	○ ○ ○ ○ ○ ○ ○	much information about the products
Uninteresting offers	○ ○ ○ ○ ○ ○ ○	interesting offers.
Bad alignment with my interests	○ ○ ○ ○ ○ ○ ○	good alignment with my interests

Online store ease of use

Please select a number on a scale from 1 to 7 below that best represents your perception of ease of use of the visual merchandising aspects of the online store of Forever 21.

	1 2 3 4 5 6 7	
Hard to use	○ ○ ○ ○ ○ ○ ○	Easy to use
Bad representation of the products	○ ○ ○ ○ ○ ○ ○	Good representation of the products
Hard to navigate the site	○ ○ ○ ○ ○ ○ ○	Easy to navigate the site.
Inflexible site	○ ○ ○ ○ ○ ○ ○	Flexible site

Approach/ avoidance

Please mark the one circle (out of 7) for each question below based on your observation of the visual merchandising aspects of the online store of Forever 21.

How much time would you like to spend with this Website?

	1 2 3 4 5 6 7	
Very little time	○ ○ ○ ○ ○ ○ ○	Lots of time

Once at the site, how much did you enjoy exploring around?

	1 2 3 4 5 6 7	
Did not enjoy exploring	○ ○ ○ ○ ○ ○ ○	Enjoyed exploring

How much would you like to use this particular site while shopping?

	1 2 3 4 5 6 7	
Not at all	○ ○ ○ ○ ○ ○ ○	Very much

Once at the site, how much would you like to look around or explore the site?

	1 2 3 4 5 6 7	
Not at all	○ ○ ○ ○ ○ ○ ○	Very much

Demographics

If you prefer not to answer any questions, please check the box that states: "I prefer not to answer"

Gender

- ○ Male
- ○ Female
- ○ I prefer not to answer

Age

- ○ 18-28
- ○ 29-39
- ○ 40-50
- ○ 51-60
- ○ I prefer not to answer

Personal annual income

- ○ Less than 10,000
- ○ 10,000-29,999
- ○ 30,000-59,999
- ○ 60,000-79,999
- ○ 80,000+
- ○ Prefer not to answer

## Ethnicity, please check all that apply

- ○ American Indian/Alaskan
- ○ Asian
- ○ Black /African American/ African
- ○ Latino/Hispanic
- ○ Native American/Hawaiian/other Pacific Islander
- ○ White/ Caucasian
- ○ Other
  [   ]
- ○ Prefer not to answer

Shopping Behavior

On average, the amount of money you spend on clothing **per month** is

Dollars

| | 0 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |

average amount of money

On average, how many times do you shop for clothing every 3 months online?

| | 0 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 |

frequency
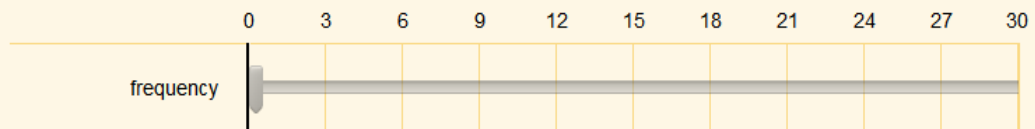
Where do you typically shop for clothes online? Check all that apply

☐ Big box online stores (such as: Target, Wal-Mart)

☐ Department online stores (such as: Macy's, JCPenny)

☐ Specialty online stores (such as: Gap, H&M, Forever 21)

☐ Small boutique online stores

☐ Other

How many pages did you browse when you observed the store?

○ 0-3

○ 4-6

○ 7-9

○ >9

Did you put any products into shopping cart when you observed the store?

○ Yes

○ No