I. Introduction

All pedestrians who walk by a store are potential customers. A common interest of retailers is determining how to induce these pedestrians to enter the store. To this end, the exterior of a store is used by retailers to deliver complex information about the store and its products in an intuitive and implicit way. By visualizing images and concepts, retailers attempt to create curiosity among potential customers and grasp their attention, thus inviting them into stores (Ahn et al., 2003; Ko et al., 2012; Swanson & Everett, 2015). Store windows play a critical role as a communication medium by providing spaces to display products by using various design elements and artistic expression methods. In addition, they facilitate sensuous and tactile interaction between the consumer and the product, thereby contributing to create a visually appealing shopping environment (Donnellan, 1996; Kent, 2007). Store windows provide the first impression of a store (Turley & Milliman, 2000), attract attention (Edwards & Shackley, 1992), and affect willingness to enter the store (Lange et al., 2016; Oh & Petrie, 2012). As online and mo-
bile shopping have rapidly increased, retailers now struggle to creatively design aesthetic store windows.

Creativity and innovativeness have always been the core sources of competitiveness in the fashion industry (Davey et al., 2009). According to Kent (2007), store design plays the role of expressing creativity in retail environments, and store windows in particular provide opportunities to express creativity. Many studies are related to store environment or atmospherics and recognize its notable impact on consumer responses (Donovan & Rossiter, 1982; Spence et al., 2014; Turley & Milliman, 2000). However, most of them focus on the effect of the interior design rather than the exterior (Oh & Petrie, 2012; Turley & Milliman, 2000). A fashion store window is a crucial element of store design because it attracts consumers into the store. Creative store design is important, given that fashion consumers seek multisensory stimulation (Blázquez, 2014) and pleasurable experiences (Fiore et al., 2005; Song et al., 2007) from shopping environments. Lange et al. (2016) stated that store window creativity can lead to positive marketing outcomes because creative advertising attracts consumer attention.

However, despite the importance of creativity in the fashion field, little empirical research has been conducted on creativity in environmental design of fashion store. This lack of research on creativity in fashion-store visual merchandising is partly due to ambiguity in the definition of creativity and the difficulty of empirically examining consumer responses. Creativity can be defined in various ways, on the basis of the field of study (Song & Park, 2014), but creativity is generally defined as the ability to create something new and amazing (Guilford, 1956), activities of various scope that are new and valuable or original and useful (Kent, 2007), and products with originality and practicality (Finke, 1990). In marketing, many studies on the effects of creative advertisements exist. A store window is similar to an advertisement as both are effective marketing communication tools emphasizing creative expression. Creative advertising increases not only consumer arousal and pleasure (Poels & Dewitte, 2008) but also advertising effectiveness (Bu, 1997; Hong, 2003; Lehner et al., 2014; Sasser & Koslow, 2008; Smith et al., 2007). Such an advertising also positively affects consumers' attitudes toward advertisements (Ang et al., 2007; Ang & Low, 2000; Kim, 2014; Stone et al., 2000). Store window creativity likely leads to positive consumer behavior from retailers' perspective.

This study aims to clarify the multi-dimensional structure of fashion store window creativity and to investigate its impact on consumers' emotions, attitudes, and entering intentions. To explain the effect of store window creativity on consumer behavior, we adopt a stimulus-organism-response (S-O-R) model that explains human responses to environmental stimuli through emotional states by using self-report methods and psychophysiological measures. Many previous findings on creativity in marketing are reviewed and analyzed to propose hypotheses. The Preliminary Study section describes the procedures and results of a fashion expert survey to verify the evaluation criteria of fashion store window creativity. Next, Study 1 is conducted to examine the effect of creativity on fashion consumers' emotions by using psychophysiological measures. Furthermore, Study 2 is conducted to investigate the effect of creativity and its dimensions on fashion consumers' attitudes and entering intentions through emotional responses using self-report methods. The last section of this paper summarizes and discusses the implications for further research and practitioners' works.

This study provides theoretical implications in confirming that the effects of fashion store window creativity on consumer emotional responses and behavioral intentions through psychophysiological analysis and self-report questionnaire. A previous study has investigated the effects of store window creativity on consumer responses (Lange et al., 2016), but a certain limitation exists, that is, the effect of store window stimuli can be explained by the difference of visual complexity. To verify the effect of fashion store window creativity, this study creates stimuli by manipulating the difference of creativity level using the multi-dimensional concept of creativity. Most creativity studies focus on originality, this study identifies the sub-dimensions of show window creativity and the effect of each sub-di-
mension of fashion store window creativity on the emotions, attitudes, and behavioral intentions of consumers. The findings also contribute to provide useful insights for retailers on the basis of the understanding of the predicting factors that should be considered for producing creative display windows in the fashion industry and their impact on consumers.

II. Theoretical Framework

1. Role of Store Window

Window dressing refers to curating a store window with the most interesting combination of products offered in the store and presenting it to consumers who pass by the store (Ahn et al., 2003). Store windows are one of the important elements of stores' exterior (Mower et al., 2012). According to Berman and Evans (1998), a store's exterior consists of entrances, storefront, display windows (i.e., store windows), building's physical characteristics, and surrounding facilities, such as a parking lot. Store exteriors, including store windows, enable consumers to form quick impressions about a store to determine whether to enter it or not (Oh & Petrie, 2012). Given the high visibility and controllability of store windows, they provide an important opportunity for retailers to build positive first impressions (Mower et al., 2012), store/brand image perception, and store entry decisions (Edwards & Shackley, 1992; Lange et al., 2016; Oh & Petrie, 2012; Sen et al., 2002). Mower et al. (2012) confirmed that the presence of window display positively influences respondents' liking of store exteriors and patronage intentions, especially in small retailers.

Store windows also play the role of advertisements in that they creatively present a selection of products sold inside (Kent, 2007) to provide information about stores and to evoke consumers' interests (Lange et al., 2016). Store windows serve as a source of information related to shopping and functions to create and maintain the store's image to the consumers as a communication medium (Lange et al., 2016; Sen et al., 2002). Previous research has stated that the key roles of store windows are to create aesthetic impressions of the store by communicating store or product information to consumers (Oh & Petrie, 2012; Sen et al., 2002; Turley & Milliman, 2000) and to attract consumers' attention through its creative design (Lange et al., 2016). Lange et al. (2016) argued that these functions of store windows are similar to the role of advertising. Thus, the current study focuses on store window creativity and investigates its effects on consumer responses in the context of store environment design.

2. Store Window Creativity

Fashion is essentially a product of creativity (Le Pechoux et al., 2007), and the fashion industry is considered one of the creative industries in which novelty is the main value (Aage & Belussi, 2008). Fashion marketers must communicate the creativity of a brand and product to consumers through marketing activities. Various studies on creativity have been conducted in the marketing field. Specifically, the creativity of advertisements has been the core interest. Store windows are important marketing communication channels, through which fashion marketers visually express images and messages related to their brands or products. Therefore, a discussion on the effects of creativity on advertising can be useful in explaining the effects of store windows.

Lehnert et al. (2014) suggested that creativity can be perceived from two perspectives: one is divergence through novel, original, differential, or imaginative communication, and the other is meaningfulness to consumers (i.e., appropriateness or connectedness). In advertising studies, creativity usually consists of originality and relevance. Originality generally refers to something that is different from what consumers expect. It is interchangeably used with the terms novelty, newness, and flexibility. On the basis of these previous studies, we consider originality as new, original, and different store window display. Meanwhile, relevance refers to the extent to which something is meaningful to consumers (consumer relevance). When relevance with brands is critical, it can be assessed by the extent to which a creative object is related to the brand (brand relevance) (Smith et al., 2007). Relevance is sometimes replaced...
by the terms “appropriateness,” “usefulness,” and “meaningfulness.” Given that store windows contain information and images about stores, including their products, we consider relevance as the extent to which a store window provides information related to the store and its products. In addition to originality and relevance, certain studies have suggested other variables, such as artistry (Koslow et al., 2003), humor (Stuhlfaut & Yoo, 2013), and connectedness (Ang et al., 2007) as dimensions of creativity.

In fashion stores, artistry, originality, and relevance can be the sub-dimensions of creativity. Runco and Charles (1993) provided a framework composed of originality and appropriateness, confirming that the perception of creativity varies from person to person. In addition, they suggested that appropriateness can be perceived as strategic or artistic attributes depending on the person. Through qualitative research on experts in the advertising field, Koslow et al. (2003) showed that creativity dimensions are composed of originality, strategy, and artistry. Strategy refers to the extent to which an advertisement is built on good strategy (i.e., appropriateness), and artistry refers to the extent to which an advertisement appears artistic. Their results indicate that artistry plays the role of creativity when originality is lacking. That is, if originality is low, then the more artistic an advertisement is, the more it is perceived as creative. However, if originality is high, artistry does not have a significant effect on creativity perception.

The attractive design of store environments has a positive effect on consumer responses, including their approach behavior (Baker et al., 1992; Vieira, 2010), which is especially true for fashion stores that have aesthetic visual design as a core value. Therefore, artistry can play an important role in the evaluation of fashion store window creativity. Following Koslow et al. (2003), we consider artistry as an artistically sophisticated show window.

However, studies on the effects of store window creativity are limited. Lange et al. (2016) verified that creativity is composed of originality and relevance and defined store window creativity as a window that shows a store's products through original and relevant ways. Moreover, they suggested that store window creativity can be controlled using “structured variation” of displays, such as form, object, and arrangement, as used in advertisement research (Lange et al., 2016; Pieters et al., 2010). “Structured variations” imply that creative designs are not necessarily complex in their visual setup but rather in the originality placed into presenting the items on display in a relevant manner (Lange et al., 2016). For instance, Lange et al. (2016) manipulated creativity by removing unique designs around the product while controlling the displayed products and layout. Rosengren et al. (2013) manipulated creativity by removing creative templates from advertisement messages.

Lange et al. (2016) confirmed that store window creativity increases store entry in a field study, for which three more-creative and three less-creative windows in operation were selected. Their observation results showed that consumers who noticed the more creative windows were more likely to visit the stores compared with those who saw the less creative ones. However, claiming that the stimuli used in their empirical study measured the inherent effects of creativity is difficult. To convert more-creative store windows into less-creative ones, Lange et al. (2016) controlled relevance (i.e., same products, same retailers) and modified stimuli with only originality (i.e., background images, display methods).

Although the perception of creativity according to the stimuli is confirmed to be successfully manipulated, the difference in consumer responses to the conditions can be explained by the difference in visual complexity through the addition of background images and the placement of complex objects. Therefore, the current research attempts to measure the impact of store window creativity on consumers through stimuli that can be explained by differences in creativity, not in the visual complexity of store windows.

Overall, creativity positively affects consumer responses toward stimuli in the advertising literature (Ang et al., 2007; Ang & Low, 2000; Kim, 2014; Stone et al., 2000). Moreover, Lange et al. (2016) confirmed that, depending on the level of store window creativity, significant differences are observed in consumer attitudes.
toward store windows and their entering intentions. Thus, we expect that store window creativity can positively affect fashion consumers' attitudes toward window display and their entering intentions.

3. Consumer Responses to Store Window Creativity: S-O-R Model

Given that store windows are an element of stores' exterior environment, this study investigates the effect of fashion store window creativity on consumer responses in terms of retail environment design. Environmental psychologists have explained the effects of the environment using the S-O-R paradigm (Donovan & Rossiter, 1982; Mehrabian, 1980; Mehrabian & Russell, 1974; Russell & Pratt, 1980). The S-O-R model explains human approach or avoidance responses to environmental stimuli through emotional states of arousal and pleasure.

Arousal is an emotional response from a sleepy, boring, or calm state to a stimulating, exciting, or wide-awake state (Mehrabian & Russell, 1974). Pleasure reflects the degree of positive emotions, such as happiness and satisfaction, that an individual feels about the environment. In the context of store environment, Donovan and Rossiter (1982) confirmed that the store ambience formed by various variables of the store environment causes these two major emotional reactions, arousal and pleasure, in consumers. Since then, in offline and online contexts, the impact on consumers' positive emotions resulting from the store design has been supported by empirical studies (Loureiro & Roschk, 2014; Quartier et al., 2014; Walsh et al., 2011).

Various cues (e.g., layout, music) or characteristics (e.g., aesthetic) of store environments can generate consumers' arousal and pleasure (Baker et al., 1992; Foxall & Greenley, 1999; Richardson et al., 1996). In addition, creativity can affect consumers' emotional responses. Poels and Dewitte (2008) observed the effects of creative advertisement on consumers' arousal and pleasure, presenting that the more creative the advertisement, the greater the consumer arousal and pleasure. The authors also observed a linear relationship between arousal and pleasure and creativity level. Therefore, fashion store window creativity can also have a positive effect on consumers' arousal and pleasure. As previously mentioned, store window creativity has a multi-dimensional structure. Thus, each sub-dimension can affect consumers' emotional responses differently. However, the individual roles of the sub-dimensions of store window creativity have not been identified in previous studies. To explore the effect of store window creativity in depth, this study examines whether the sub-dimensions of the store window creativity of fashion stores consist of originality, relevance, and artistry. The research also verifies their individual effects on consumers' arousal and pleasure. Thus, the following hypothesis is proposed.

H1-1: Fashion store window creativity (a. originality, b. relevance, c. artistry) has a positive effect on consumers' arousal response.

H1-2: Fashion store window creativity (a. originality, b. relevance, c. artistry) has a positive effect on consumers' pleasure response.

Emotions play an important role in consumer behavior. Fashion products are inherently symbolic, experiential, and hedonic (Crowley et al., 1992). Specifically for hedonic products, perceiving hedonic values through sensory, emotional, and aesthetic pleasure experiences has a very important effect on consumer responses (Babin et al., 1994; Chitturi et al., 2008). Consumers who seek hedonic values likely evaluate shopping experiences by using subjective emotions and feelings as information (Kwortnik Jr. & Ross Jr., 2007; Pham, 1998); thus, consumers' emotional states based on fashion store environments can play a key role in their positive responses.

Numerous studies based on the S-O-R model have confirmed the mediating effects of arousal and pleasure on the effects of store environment on consumer responses (Baker et al., 1992; Foxall & Greenley, 1999; Sherman et al., 1997; Vieira, 2013). The arousal response caused by novel and complex environmental stimuli encourages consumers to engage in the shopping situation, makes them feel friendly to a store, stay long in
the store, and positively influences their purchase intention (Donovan & Rossiter, 1982; Groeppel-Klein & Baum, 2001). The pleasure experienced by consumers in shopping situations positively affects their behaviors (Babin et al., 1994; Bloch et al., 1986; Hirschman & Holbrook, 1982). The pleasure response induces approach behaviors, such as time spent in the store, social interactions within the store, and intention to revisit (Baker et al., 1992; Bitner, 1992; Donovan & Rossiter, 1982). In the context of store window display, Mower et al. (2012) showed that the degree of attractiveness of store windows increases potential consumers' interest and liking of a store's appearance, and that the relationship between liking and entering intentions is mediated by arousal and pleasure. However, only few studies have examined the effects of store windows, even though it is an important factor of stores' exterior design.

In addition, attitude is an important determinant of behavior (Ajzen & Fishbein, 2005; Kraus, 1995). According to the theories of reasoned action and planned behavior by Ajzen and Fishbein (2005), attitude toward the behavior is one of the antecedents of intention, and actual behavior is determined by intention. Kraus (1995) conducted a meta-analysis of the relationship between attitudes and behaviors, and the results indicated that the role of attitudes on the prediction of future behavior is statistically significant. Therefore, this study proposes the following hypotheses to confirm the influence of window creativity on consumer responses and the mediating effects of emotional states by using the traditional S-O-R framework (Fig. 1):

H2: The effect of fashion store window creativity on attitudes toward the window display is mediated by (a) arousal and (b) pleasure responses.

H3: The effect of fashion store window creativity on store entering intentions is mediated by (a) arousal and (b) pleasure responses.

H4: Consumers' attitudes toward window displays have a positive effect on store entering intentions.

III. Preliminary Study: Evaluation Criteria of Fashion Store Window Creativity

Prior to the main study, we conducted a preliminary research aiming to verify the concept of fashion store window creativity and its dimensions. At this stage, we collected creative store window images in real world. These images were used to define fashion store window creativity and as stimuli for our experiments.

1. Creative Store Window Image Collection

Images of actual fashion store windows were collected via Google online image search by simultaneously using three keywords: “creative,” “store window,” and “window display.” We only collected images that satisfied the three criteria below. We initially collected 667 images of creative store windows, which were reduced to 64 by repetitively examining the quality of the images on the basis of the same three criteria.
(1) All parts of the store window are presented.
(2) The photo is taken from the front.
(3) Brands of products are unidentifiable: exclude images with brand names, logos, brand patterns, and any other brand-connected design factors.

2. Expert Survey

Twenty participants with more than five years of experience in fashion academia or the industry were recruited as experts. Their average age was 33.9 years, comprising two males and 18 females. Moreover, 35% of participants had work experience in fashion design, 20% were doctoral students, and 20% had work experience in merchandising, 10% in planning, 10% in sales, and 5% in other areas.

Participants received an online survey link via text message and were asked to evaluate the creativity of the selected 64 images on a seven-point scale (1 = very uncreative, 7 = very creative) (Rosengren et al., 2013). Subsequently, they were asked to provide on a blank space the conceptual definitions and factors of creativity that they used as standards to evaluate fashion store window creativity.

3. Creativity Evaluation Criteria

The creativity evaluation criteria provided by the experts were analyzed and classified on the basis of the definitions, dimensions, and scales of creativity established by previous studies (Altsech, 1996; Koslow et al., 2003; Sheinin et al., 2011; Smith et al., 2007). The expressions and adjectives that the experts used to define and evaluate the creativity of a fashion store window were coded on the basis of the dimensions that appeared in previous studies. The creativity dimensions referenced are reported in Table 1.

The results confirmed that originality, relevance, and artistry were considered the main creativity factors. By classifying the 33 collected statements about the creativity evaluation criteria, we found 19 statements related to originality, eight related to relevance, and six related to artistry. Originality was expressed as “whether the display method is new,” “whether methods that are difficult to see easily were used,” “is it recognized by individuals as new with more than simple modifications,” “were the colors and designs not used much previously,” “ideas do not currently exist,” “seeing for the first time,” and so on. If something new and different was experienced, then the image was evaluated as a creative fashion store window display.

Relevance was expressed as “whether it expresses the brand image well,” “whether it displays the product effectively,” “whether it shows the product concept well,” “whether it shows the fashion brand's image concept in a focused and appropriate manner,” and so on. This result confirmed that whether the store window effectively reflects and communicates the value of the product or brand, that is, its relevance, affects the evaluation of fashion store window creativity.

Artistry was expressed as “the combination of color and formative elements are harmonious or sophisticated,” “whether the pictorial elements are strong enough for one story to be felt, and not just a simple product display,” “has a situation that is unlikely to occur in reality, expressed in an artistic way,” “the feeling that an artist's work was applied,” and so on. Therefore, this finding confirmed that the artistic expressions with the formative and aesthetic elements affect the evaluation of fashion store window creativity.

The overall results of analyzing the experts' creativity evaluation criteria corresponded with previous stu-
dies. In evaluating the creativity of fashion store windows, originality and relevance were the main consideration. In addition, the artistic aspects of store windows contribute well to creativity. This result is consistent with Koslow et al.’s (2003) findings—their expert interview data confirmed that advertisement creativity can be divided into originality, relevance, and artistry. Therefore, we adopted this 3D structure—composed of originality, relevance, and artistry—for fashion store window creativity.

IV. Study 1: Effect of Store Window Creativity on Consumers’ Psychophysiological Affective Responses

Study 1 was conducted to explore the effects of fashion store window creativity on consumers’ emotional responses, arousal (H1-1) and pleasure (H1-2), by using psychophysiological measures. Emotional responses, induced by environmental stimulation, influence consumers’ approach behaviors and are closely related to physiological responses. The self-report method is likely to be limited to responses to specific extremes, rather than to the overall response to stimuli because responses to the stimuli are made toward the end of stimuli exposures. However, the measurement of psychophysiological indicators is continuous in the process of being exposed to stimuli; observing the change of response over time is also possible (Bolls et al., 2001; Ravaja, 2004). As such, psychophysiological measures are widely used in consumer research on environments because they can detect subjects’ emotional responses that they are not consciously aware of (Potter & Bolls, 2012; Somervuori & Ravaja, 2013). In addition, for psychophysiological measurements, subjects do not have to express their subjective conditions or rely on memory. Therefore, this approach has the advantage of not interrupting the natural message management process (Ravaja, 2004). In Study 1, consumers’ arousal and pleasure responses toward store window creativity were objectively observed through psychophysiological indicators.

1. Stimuli

In the preliminary study, the creativity of 64 fashion store windows ranged from a minimum of 1.45 to a maximum of 5.95, and the mean score was 3.45 (Standard Deviation=1.34). We selected one image, which was evaluated as highly creative (M creativity=5.20), and created a low-creativity version of that image by eliminating design factors using Adobe Photoshop CS4. The creative factors (i.e., an upside-down mannequin leg) in the image were removed and modified into factors that can be seen in general store windows (i.e., a mannequin’s upper body) to create an image of low creativity (Table 2).

A pretest was conducted online. Participants were recruited via a specialized online survey agency in South Korea. Forty-five women between the ages of 20 and 39 (Mage=26.11) were recruited, and they included university students (28.9%), graduate students (28.9%), office employees (26.6%), freelancers (4.4%), and others (11.1%). Participants were randomly assigned to either of the two conditions (N high creativity=22, N low creativity =23). In the survey, respondents were requested to answer on creativity (“it is creative”), attractiveness (“it is attractive”), aesthetics (“it is beautiful”), product quality (“high product quality”), and product price range (“high product price range”) using a five-point Likert scale. The results showed that the high- and low-creativity store window images had significant differences in creativity (M high creativity=4.00, M low creativity=2.65, t=−3.97, p<.001), but not in attractiveness (M high creativity=2.82, M low creativity=2.70, t=−.46, p=.65), aesthetics (M high creativity =2.64, M low creativity=2.43, t=−.93, p=.36), product quality (M high creativity=2.82, M low creativity=2.52, t=−1.36, p=.18), or product price (M high creativity=2.95, M low creativity=2.70, t=−1.01, p=.32). Therefore, the two images of high- and low-creativity fashion store window were selected as stimuli for Study 1.

2. Psychophysiological Measures

Two indices for emotional responses are generally used in psychophysiology: electrodermal activity (EDA), which is an indicator of arousal, and facial electromyo-
graphy (EMG), which is an indicator of pleasure. The reliability and validity of these two indices in reflecting emotional states have been verified and are being used in various studies (Potter & Bolls, 2012).

In psychophysiology, arousal is measured with EDA (Potter & Bolls, 2012). If arousal increases, then eccrine sweat glands react by the sympathetic nervous system (Bradley & Lang, 2000; Dawson et al., 2007). Skin perspiration is closely related with skin conductance, and thus, a high level of emotional arousal leads to the activation of EDA (Potter & Bolls, 2012). Considering that EDA is easy to measure and accurately reflects a subject's arousal status (Lykken & Venables, 1971), it has been consistently used in the psychophysiological field (Dawson et al., 2007).

The degree of pleasantness felt by subjects can be detected by measuring the facial EMG of the zygomaticus major muscle by using surface electrodes attached to the skin (Potter & Bolls, 2012). The zygomaticus major muscle is activated when a person smiles, which is strongly related to the pleasant dimension of affective valence (Bolls et al., 2001; Potter & Bolls, 2012). If positive stimuli are detected, then the EMG of the zygomaticus major muscle is activated, and the greater the activation, the more positive the response. Thus, the potential differences measured by the electrodes are indicators of emotional status (Lee et al., 2011).

### 3. Sample and Data Collection

Through community announcements within a prominent South Korean university, females in their 20s and 30s were recruited. Undergraduate and graduate students willing to participate in the study accessed an online link specified in the announcement and selected the date and time they wanted to participate in the experiment. Data collection transpired from July 12 to August 4, 2016, and a total of 45 subjects participated in the research experiment.

The subjects were randomly assigned to two conditions (creativity condition: high versus low). They first responded to items related to their demographic characteristics, perceived self-creativity (Rosengren et al., 2013), and fashion involvement (Choo et al., 2014; O’Cass, 2000). After the preliminary survey, subjects removed the accessories they were wearing and sat in chairs installed in the front of a TV and listened to an explanation about sensor attachment. Afterward, subjects were shown images of fashion store windows for 11 seconds on a 65-inch 4K resolution TV screen. While viewing the photos, their EDA and EMG data were collected in real time through the BIOPAC System.

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**Table 2. Stimuli for Study 1**

<table>
<thead>
<tr>
<th>High creativity</th>
<th>Low creativity</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://www.arredanegozi.it" alt="High Creativity Image" /></td>
<td><img src="https://www.arredanegozi.it" alt="Low Creativity Image" /></td>
</tr>
</tbody>
</table>

Reprinted from AN Shopfitting Magazine (2014).
Adopted from AN Shopfitting Magazine (2014).
sequently, subjects responded to items related to store window creativity (Rosengren et al., 2013) on tablet PCs. After the survey, all sensors were removed, and a small compensation was provided to all subjects for participating in the experiment.

Physiological data were extracted in numerical form using AcqKnowledge Software for statistical analysis. The physiological values derived in the first second after stimuli onset were set as the base line. Using the change scores method (Potter & Bolls, 2012), the data for the next 10 seconds were then calculated into the change amount from the base line per second. Thus, the E-MG and EDA data for each subject were organized into 10 numerical values each and were used for statistical analysis. After excluding eight poor data, a total of 37 participants' data were used for the final analysis in SPSS 23.0.

4. Results

1) Manipulation Checks

To check whether fashion store window creativity levels were appropriately manipulated, a t-test was conducted. The results showed that the difference in creativity based on stimuli was significant ($M_{\text{high-creativity}}=4.16$, $M_{\text{low-creativity}}=3.17$, $t=-3.89$, $p<.001$), suggesting that the manipulation was successful.

2) Effects of Fashion Store Window Creativity on Consumers’ Emotional Responses

To observe the effects of fashion store window creativity on arousal and pleasure, repeated measures ANOVA were conducted. In the current analysis, the time variable was input as the within-subject factor, and the condition variable in accordance with the stimuli was input as the between-subject factor.

The results of the repeated measures ANOVA on arousal showed a significant main effect of the creativity condition ($F(1, 35)=4.27$, $p<.05$), supporting H1-1. Participants in the high-creativity condition exhibited higher arousal (i.e., higher EDA responses) than those in the low-creativity condition; the arousal level rapidly decreased while watching the stimulus under the low-creativity condition (Fig. 2).

The results of the repeated measures ANOVA on pleasure indicated a significant main effect of the creativity condition ($F(1, 35)=3.32$, $p=.08$), supporting H1-2. Participants' physiological pleasure (i.e., EMG responses) in the high-creativity condition was greater than that in the low-creativity condition, and their pleasure

![Fig. 2. Arousal responses based on store window creativity.](image-url)
level remained high while watching the stimulus in the high-creativity condition (Fig. 3).

V. Study 2: Emotion Mediation Model of Fashion Store Window Creativity

Study 2 was conducted to investigate the effects of each sub-dimensions of fashion store window creativity on consumers' attitudes and store entering intentions with the mediation of emotional responses. In Study 1, we manipulated creativity level and measured emotional responses toward these high and low creative windows, respectively. For Study 2, we measured the consumers' perceived originality, relevance, and artistry, which are the sub-dimensions of fashion store window creativity, and investigated their effects on emotions, attitudes, and behavioral intentions.

1. Stimuli

For Study 2, only high-creativity images were used as stimuli. Viewers may perceive the creativity level of the stimuli differently; thus, perceived creativity was measured and used as an independent variable. In Study 2, high-creativity images, namely, image A (M=5.20) and B (M=5.95), which were selected from the 64-image pool in the preliminary study were used as stimuli (Table 3).

2. Sample and Data Collection

To collect the data, a panel of specialized research institutes was recruited, and an online survey was conducted for women in their 20s and 30s. A total of 328 responses from voluntary participants were collected. Of these, 21 unreliable responses were excluded, and 307 were used in the final analysis.

Before being exposed to the stimuli, subjects were first asked to answer questions on demographic characteristics (e.g., age, gender, and job), perceived self-creativity (Rosengren et al., 2013), and fashion involvement (Choo et al., 2014; O'Cass, 2000). Then, respondents were randomly presented either stimulus A or B. Thereafter, they responded to questions measuring attitude toward the store window (Sheinin et al., 2011), entering intentions (Dahlén et al., 2009; Lange et al., 2016), and arousal and pleasure (Mehrabian & Russell, 1974).
Subsequently, subjects evaluated originality (Altsech, 1996; Koslow et al., 2003; Sheinin et al., 2011), relevance (Altsech, 1996; Koslow et al., 2003; Sheinin et al., 2011), and artistry (Koslow et al., 2003; Smith et al., 2007), which are the dimensions of store window creativity.

### 3. Effects of the Sub-dimensions of Creativity on Consumer Responses and the Mediating Effects of Emotions

To explore the distinct effects of the sub-dimensions of creativity (i.e., originality, relevance, artistry) on consumer responses through emotions (arousal and pleasure), a structural model analysis was conducted. AMOS 18.0 was used for this structural model analysis.

To verify the validity and reliability of the measurement variables, confirmatory factor analysis (CFA) on the model that reflects all variables was conducted. The factor loadings of measured variables by latent variable, t-value, p-value, and fit index of the measurement model was confirmed. Whether the standardized factor loading of the measurement variables was statistically significant ($p<.05$) was verified, and the insignificant items were eliminated (Lee & Lim, 2011). The model fit was $\chi^2=364.27$ ($df=168$, $p<.001$), and CMIN/DF=2.17, TLI=.96, CFI=.97, and RMSEA=.06, thus verifying that the measurement model fit was at an appropriate level (Lee & Lim, 2011). The factor loadings of the items of all measurement variables were between .70 and .98, confirming that they were at appropriate levels (Lee & Lim, 2011). The CFA results are shown in <Table 4>.

On the basis of the CFA, a total of seven variables (originality, relevance, artistry, arousal, pleasure, attitudes, and entering intentions) were included in the final model. To verify the suitability of the measurement model, the AVE value, the square of the correlation coefficient, and the concept reliability of all measurement factors used in this study were calculated. The AVE values, an indicator of convergent validity, were all above 0.5, and discriminant validity corresponded to the standard provided in previous research (Fornell & Larcker, 1981) (Table 5). To measure whether the variables reliably explain the specific dimensions in the same way, Cronbach's $\alpha$ values were calculated and ranged between .798 and .961, being greater than the standard value of 0.7. Therefore, internal consistency among the measurement items was confirmed (Nunnally, 1994).

A structural equation modeling (SEM) analysis was conducted to test the effects of each dimension of creativity on consumers' emotions (i.e., arousal and pleasure) and to determine how each factor can influence consu-
Table 4. CFA results of measurement variables

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item</th>
<th>Standardized factor loading</th>
<th>t</th>
<th>Cronbach's α</th>
<th>Average Variance Extracted (AVE)</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Originality</td>
<td>X1 Original</td>
<td>.87</td>
<td>20.12***</td>
<td>.93</td>
<td>.74</td>
<td>.92</td>
</tr>
<tr>
<td></td>
<td>X2 Unexpected</td>
<td>.90</td>
<td>21.02***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X3 Novel</td>
<td>.93</td>
<td>22.34***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X4 Different</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relevance</td>
<td>X5 Provides information related to the product</td>
<td>.79</td>
<td>17.26***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X6 Provides information on the product</td>
<td>.87</td>
<td>20.43***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X7 Provides information related to the store</td>
<td>.86</td>
<td>20.13***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X8 Provides information about the store</td>
<td>.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artistry</td>
<td>X9 Can be appreciated as a work of art</td>
<td>.93</td>
<td>17.53***</td>
<td>.90</td>
<td>.66</td>
<td>.85</td>
</tr>
<tr>
<td></td>
<td>X10 Can stand on its own as art</td>
<td>.93</td>
<td>17.49***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X11 Emotionally expressive</td>
<td>.76</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arousal</td>
<td>Y1 Sleepy–Wide awake</td>
<td>.70</td>
<td></td>
<td>.80</td>
<td>.63</td>
<td>.77</td>
</tr>
<tr>
<td></td>
<td>Y2 Unaroused–Aroused</td>
<td>.94</td>
<td>9.67***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pleasure</td>
<td>Y3 Unsatisfied–Satisfied</td>
<td>.98</td>
<td>14.56***</td>
<td>.87</td>
<td>.68</td>
<td>.81</td>
</tr>
<tr>
<td></td>
<td>Y4 Unpleasant–Pleasant</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes</td>
<td>Y5 My attitude toward the store window is favorable.</td>
<td>.93</td>
<td></td>
<td>.96</td>
<td>.79</td>
<td>.92</td>
</tr>
<tr>
<td></td>
<td>Y6 I like the store window.</td>
<td>.96</td>
<td>33.69***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y7 My overall feeling toward the store window is positive.</td>
<td>.95</td>
<td>31.78***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entering intentions</td>
<td>Y8 This store window display makes me want to enter the store.</td>
<td>.94</td>
<td></td>
<td>.95</td>
<td>.76</td>
<td>.91</td>
</tr>
<tr>
<td></td>
<td>Y9 The products in this display make me want to enter the store.</td>
<td>.91</td>
<td>29.05***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y10 I would probably enter the store</td>
<td>.92</td>
<td>30.05***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p<.001**

Table 4t-values were not derived in the blank spaces because the non-standardized causality factor was set to 1.

Table 5. Measurement index of convergent validity and discriminant validity

<table>
<thead>
<tr>
<th>Measurement variable</th>
<th>Originality</th>
<th>Relevance</th>
<th>Artistry</th>
<th>Arousal</th>
<th>Pleasure</th>
<th>Attitudes</th>
<th>Entering intentions</th>
<th>Concept reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Originality</td>
<td>.74</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.94</td>
</tr>
<tr>
<td>Relevance</td>
<td>.13 (.36)</td>
<td>.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.91</td>
</tr>
<tr>
<td>Artistry</td>
<td>.39 (.62)</td>
<td>.35 (.59)</td>
<td>.66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.90</td>
</tr>
<tr>
<td>Arousal</td>
<td>.14 (.38)</td>
<td>.14 (.37)</td>
<td>.21 (.46)</td>
<td>.63</td>
<td></td>
<td></td>
<td></td>
<td>.80</td>
</tr>
<tr>
<td>Pleasure</td>
<td>.04 (.19)</td>
<td>.20 (.45)</td>
<td>.21 (.45)</td>
<td>.24 (.49)</td>
<td>.68</td>
<td></td>
<td></td>
<td>.87</td>
</tr>
<tr>
<td>Attitudes</td>
<td>.13 (.36)</td>
<td>.37 (.61)</td>
<td>.43 (.65)</td>
<td>.18 (.42)</td>
<td>.38 (.61)</td>
<td>.79</td>
<td></td>
<td>.92</td>
</tr>
<tr>
<td>Entering intentions</td>
<td>.10 (.32)</td>
<td>.33 (.57)</td>
<td>.34 (.59)</td>
<td>.21 (.45)</td>
<td>.33 (.57)</td>
<td>.74 (.86)</td>
<td>.76</td>
<td>.96</td>
</tr>
</tbody>
</table>

a: Average Variance Extracted (AVE)
b: square of the correlation coefficient (between parentheses is the correlation coefficient).
consumer attitudes and entering intentions. The analysis showed that the model's fit was satisfactory ($\chi^2=494.15$, $df=175$, $p<.001$; CMIN/DF=2.82, CFI=.95, TLI=.94, RMSEA=.08).

The results revealed the effects of the dimensions of fashion store window creativity on consumer emotions. The perceived relevance ($\beta=.17$, $p<.05$) and artistry ($\beta=.29$, $p<.01$) of the fashion store window had a positive effect on arousal, but the effect of originality on arousal was insignificant ($\beta=.13$, $p=n.s.$). For pleasure response, the perceived relevance ($\beta=.31$, $p<.001$) and artistry ($\beta=.42$, $p<.001$) of the fashion store window had a positive effect, whereas originality had a negative effect ($\beta=-.17$, $p<.05$). Regarding the effect of emotions on consumer attitudes and store entering intentions, the more the consumers feel arousal ($\beta=.17$, $p<.01$) and pleasure ($\beta=.58$, $p<.001$), the more the positive attitudes toward the fashion store window; whereas arousal had a positive impact on store entering intentions ($\beta=.10$, $p<.01$). Positive attitudes toward the store window lead to a high level of entering intentions ($\beta=.78$, $p<.001$). The results of the SEM analysis are shown in <Fig. 4> and <Table 6>.

VI. General Discussion

This study explored consumer responses toward fashion store window creativity. At the preliminary stage of the study, a survey among fashion experts was conducted to investigate the creativity dimensions of fashion store windows. Originality and relevance were identified as expected from the previous studies on creativity. The artistic characteristics of store windows were considered, suggesting that fashion store window creativity is composed of three dimensions: originality, relevance, and artistry. These results imply that fashion stores should consider aesthetic designs, as the artistry dimension plays a crucial role in evaluating store window creativity.

Study 1 showed the effects of fashion store window creativity on consumers' physiological emotional responses. EDA and facial EMG were measured as indicators of arousal and pleasure while subjects watched fashion store window stimuli. The results indicated that store windows with high creativity activated subjects' EDA and facial EMG compared with windows with low creativity. Although a previous study has examined the

![Fig. 4. Relational structural model among the sub-dimensions of creativity and emotions, attitudes toward the store window, and entering intentions.](image-url)
effects of store window creativity on attitudes and behavioral intentions (Lange et al., 2016), the current research is the first attempt to confirm its effects on consumer emotions.

Study 2 was conducted to explore how each dimension of creativity influences consumer responses. Based on the S-O-R model, emotion-mediated effects were hypothesized and tested. The results revealed that relevance and artistry had positive effects on arousal and pleasure; in addition, artistry perception had the strongest influence on the emotional states of fashion consumers. Meanwhile, originality had a negative effect on pleasure, and the effect of originality on arousal was insignificant. These results suggested that if the levels of other dimensions are controlled, originality may have negative effects on attitudes toward store windows by reducing pleasure. Regarding the effects of emotions on attitudes and entering intentions, pleasure derived from creativity perception had a significantly positive impact on attitudes toward store windows, and these positive attitudes translated into increased entering intentions. Arousal had a positive effect on attitudes and entering intentions.

Considering the results of previous studies, which suggest that originality and artistry are mutually interrelated in forming creativity perception (Koslow et al., 2003), the results of the current research imply that the level of artistry and originality of marketing stimuli must be mutually adjusted to create an effective fashion store window. An excessively unique and novel store window may decrease consumer pleasure. Consumers’ natural reaction is that originality negatively affects pleasure because people generally tend to resist highly novel, complex, or incongruous stimuli at initial exposure, and discomfort for this originality can be alleviated by repeated exposure (Berlyne, 1971). In various influences of pleasure and arousal, pleasure is primarily determined by the assessment of situations derived in relation to personal interests, whereas arousal is related not only to the assessment of situations but also to the urgency of action or intensity of behavioral tendencies (Reisenzein, 1994). That is, arousal response, compared with pleasure, is an emotional response that is more closely related to the immediate action. Moreover, this intrinsic property of arousal seems to have influenced the results.

Most previous studies on creativity focused on advertising creativity, whereas our research applied the concept of creativity in marketing into the context of fashion store windows’ visual merchandising. In addition, many studies on creativity paid attention to originality, whereas our research is meaningful in that it identified the sub-dimensions of store window creativity and verified the effects of each of the sub-dimensions (i.e., originality, relevance, and artistry) on consumer respon-

### Table 6. Results of the SEM analysis

<table>
<thead>
<tr>
<th>Structural path</th>
<th>Standardized coefficient</th>
<th>S.E.</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Originality → Arousal</td>
<td>.13</td>
<td>.06</td>
<td>1.73</td>
</tr>
<tr>
<td>Originality → Pleasure</td>
<td>-.17</td>
<td>.08</td>
<td>-2.33*</td>
</tr>
<tr>
<td>Relevance → Arousal</td>
<td>.17</td>
<td>.05</td>
<td>2.35*</td>
</tr>
<tr>
<td>Relevance → Pleasure</td>
<td>.31</td>
<td>.07</td>
<td>4.40***</td>
</tr>
<tr>
<td>Artistry → Arousal</td>
<td>.29</td>
<td>.07</td>
<td>3.11**</td>
</tr>
<tr>
<td>Artistry → Pleasure</td>
<td>.42</td>
<td>.10</td>
<td>4.75***</td>
</tr>
<tr>
<td>Arousal → Attitudes</td>
<td>.17</td>
<td>.08</td>
<td>3.27**</td>
</tr>
<tr>
<td>Arousal → Entering intentions</td>
<td>.10</td>
<td>.06</td>
<td>2.79**</td>
</tr>
<tr>
<td>Pleasure → Attitudes</td>
<td>.58</td>
<td>.07</td>
<td>10.14***</td>
</tr>
<tr>
<td>Pleasure → Entering intentions</td>
<td>.06</td>
<td>.05</td>
<td>1.24</td>
</tr>
<tr>
<td>Attitudes → Entering intentions</td>
<td>.78</td>
<td>.05</td>
<td>15.18***</td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001
ses. The results showed that store window creativity activated consumers’ emotional responses, which entailed positive attitudes and entering intentions, confirming the traditional S-O-R model in the context of store environment research. From a methodological perspective, this study is significant in that it employed a multi-method approach. We used psychophysiological indices and self-reported responses to measure emotions, thereby increasing our results' objectivity and reliability. The results indicated that the directionality of the findings from psychophysiological measurements and existing self-report surveys is parallel. Therefore, psychophysiological indicators can be effective and objective tools for measuring emotional responses.

Our findings provide several practical implications for developing a design strategy to create attractive store windows. As competition in the retail industry intensifies, creativity has become a key capital for differentiation (Le Pechoux et al., 2007). Creative store window displays activate consumers’ emotions and influence their entering intentions. Thus, retailers must consider creativity in designing store windows. Doing so is essential in the fashion industry where creativity is a core value. The present study also suggests what visual merchandisers should consider when expressing creativity in store windows. The results showed that the creativity evaluation criteria of fashion store windows include originality, relevance, and artistry. Retailers can modify their window display’s originality, relevance, and artistry to increase consumers’ perceived creativity of store window display. According to the results, the more store windows convey information related to products or stores and the more the consumers perceive the window as artistic, the higher their entering intentions. However, if store window display originality is excessively high, then it can have a negative impact on consumers' pleasure. Therefore, when setting up a creative store window display, retailers should not pursue overly unique designs. In the case of fashion store windows, artistry greatly influences consumers' emotional states in particular. Store windows that convey information of products or stores in an artistic manner while having an appropriate level of originality can attract consumers' attention.

Given the limitations of this research, the following suggestions can be made for follow-up studies. First, in this study, originality was found to negatively affect pleasure. Previous studies on the influence of novelty revealed that overly novel designs tend to have lower preferences than familiar and simple ones, but the preferences increase with repeated exposure (Cox & Cox, 2002). Therefore, in the effects of originality, further research is warranted to identify the effect of repeated exposure to stimuli with high originality on consumers' emotional response or to find the level of originality that is positively acceptable to consumers. This result may also be due to the stimuli used in this study. Overlapping images of two mannequin legs likely instill more discomfort to consumers than pleasure in terms of content. To explore the role of originality in depth, determining the creativity evaluation level and consumers’ emotional responses according to whether the originality content is positive or negative is necessary. Second, various types of store window creativity should be considered. Creativity itself is a complex and abstract concept. Thus, designing an experiment with creativity manipulation is difficult. In the current study, stimuli were selected from collections of real store window images available on the Internet. For a precise research design, only two images were selected. Follow-up studies must confirm responses to creative store windows by simultaneously using multiple displays because consumers’ preference for the expression of creativity in certain stimuli may change. Third, this study proposed the creativity dimensions of store window displays through simple surveys of 20 experts in the fashion field. However, to determine the dimensionality of store window creativity, additional analyses are required. Follow-up studies should group specialists in the fields of fashion, design, and advertisement and further verify if originality, relevance, and artistry can be considered valid dimensions of fashion store window creativity. Fourth, this research was conducted with subjects in their 20s and 30s, but perceptions of creativity and responses to it are influenced by individual characteristics, such as gender and age. Therefore, the generalization of our re-
sults is limited. Specifically, given that diverse consumer groups exist according to the characteristics of fashion products, examining the effects of store window display creativity on responses from consumers from various age groups and genders is necessary. Finally, this study was conducted only for Korean consumers, but judgments about creativity can be perceived differently depending on culture (Yu, 2010). Future studies should thus compare the effects of store window creativity on major fashion markets, including Korea.

References


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