

Emotional Mechanism Impacting Adoption of Luxury Wearables in E-Tail

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Abstract

Recently, the category of luxury wearables has expanded and the relevant research has been scarce. The study tests whether the emotional mechanism regarding luxury wearables within e-tail affects luxury brand perceptions. Furthermore, it tests the moderation effect of gender in the mechanism. A total of 393 responses from U.S. populations were collected through an international research company with using online survey methods. In the results, the positive and direct effect of dominance on positive emotion was significant, and the positive emotion significantly increases perceived brand luxury. However, no direct effect of dominance was found on perceived brand luxury. The moderation effect of gender in the relationship between positive emotion and perceived brand luxury was found positive and significant, but the hypothesized moderation effect of gender was insignificant in the relationship between dominance and perceived brand luxury. Implications and study limitations are discussed.

Keywords: Dominance, Positive Emotion, Virtual Retail, Brand Luxury, Gender

1. INTRODUCTION

The wearable market has gradually diversified and various price points are being formed. As more recent luxury brands enter this market, competition between existing IT-based wearable device companies and traditional fashion companies intensified. In particular, existing IT-based wearable device companies lack the consumer's understanding of wearables as fashion products. Therefore it is necessary to verify consumer evaluation of expensive luxury products, but related research is lacking. Moreover, since wearables are mostly sold in the e-tail retail environment, correctly delivering information on luxury wearable products that may be unfamiliar to consumers in the e-tail environment is a part that needs to be carefully reviewed and appropriate marketing strategies should be established. Basically, the shopping experience of luxury products is very important due to the intrinsic nature of luxury products. Extraordinary experiences in retail store environments contribute to the perceived scarcity and excessiveness of luxury [1] which are the core of the luxury myth [2]. Recently luxury has expanded into wearables [3]. This has raised new challenges to luxury brands because the luxurious shopping experience in store is hard to get virtually transferred [3]. At the center of the retail experiences, consumer emotion is crucial to luxury brand managements [4, 5].

In response to this industry situation, this study empirically analyzed how consumers' emotions and gender affect their perception of luxury, especially when purchasing luxury wearables in a virtual retail environment. Specifically, the study explores the effect of consumer emotion on perceived brand luxury. The theoretical

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basis draws upon a two-factor construct of retail emotion suggested by the recent relevant flow of literature. The conceptual framework of retail emotion reflects dominance as the first cognitive reaction to stimuli in store, and it affects perceived brand luxury directly or indirectly through positive emotion. In addition, gender difference is investigated as moderation in the relationships among consumer emotion and perceived brand luxury. Given the increasing importance of hedonic motivations and experiential aspects of luxury virtual retail, addressing a more specific mechanism of retail emotion with gender is expected to contribute to the extant literature and provide some novel managerial ideas to industry [6].

2. LITERATURE REVIEW

2.1 Luxury Wearables in E-tail

Originally, IT companies were the actors who naturally introduced wearables to the market because they possessed the original technology, but as these wearable technologies gradually spread, the needs of connected consumers are diversified and advanced, and the contact point with the fashion market is increasing. For example, even luxury brands that stimulate the symbolic psychology of consumers through ultra-price products launch wearables products such as smart watches and use them as a means to reinforce brand innovation. Alternatively, among IT-based companies, they are trying to form a luxury market for wearables and provide differentiated value by launching an ultra-expensive smart watch line. In order to properly understand consumers in the luxury wearables market, it is necessary to understand the distinctive characteristics of the luxury consumption pattern from the general consumption pattern. In order to understand the consumer decision-making process for luxury wearables, it is first necessary to understand the consumer's emotional mechanism, which has an important influence in the retail environment.

With the expansion of online and mobile retail contexts and of web-based marketing sources like SNS, enhancing web-based communication and branding strategies have become a primary purpose. Research highlights strategies to build a powerful brand image in web-based contexts. Image reflects visual perception. Any entity can be the object of image formation, such as a brand, a store, and a specific marketing stimulus. Brand image refers to the current view of the customers about a brand. It is the way in which the store is defined in a customer's mind [7]. Consumers form their own subjective brand image based on subjective perceptions of various attributes including store factors such as promotion, services, merchandise, physical facilities, and store layout and ambience affect brand images [8].

For many years, luxury had been hesitant in entering online contexts, because the openness and real-time access of online retail at first is believed to be discrepant with the scarcity and sophistication of luxury [5]. However, millennials are digital natives and it becomes inevitable that online is the next frontier for luxury brands [9]. Now luxury brand managers believe that it's where luxury brands can find their next path to growth. Reaching out to customers through the web becomes a new challenge to the luxury brands. As an industry steeped in heritage and tradition, change doesn't come naturally to it, but in today's dynamically changing consumer market, that is what luxury brands must do. Traditional in-store customer experiences deriving from five senses marketing should be transferred to virtual contexts and this is one of the main topics of luxury marketing [10].

2.2 Emotion in E-Tail

Emotion refers to a mental state of readiness that arises from cognitive appraisals of events or thoughts [11].

Drawing upon the theories of environmental psychology, the Stimulus–Organism–Response model (hereafter S-O-R model) explains in-store consumer behavior, focusing on significant influences of marketing stimuli in store on consumers' purchases and store patronage through intervening emotion [12]. In this model, stimulus affects the action of consumers and organism captures the cognitive assessment of consumers based on individual experience in the store environment. For instance, within the context of online retailing, both the details of the website design as well as the impression regarding the website's performance based on the website design are the examples of stimuli of the retail environment affecting consumer purchases. The organism refers to the intervening mechanism within the process and is mostly explained as emotion. More specifically, the S-O-R model conceptualizes three dimensions of retail emotion: pleasure, arousal, and dominance [12]. Pleasure is defined as the extent to which a person feels good, satisfied, happy, or joyful in a situation [13]. Arousal is related to the degree of stimulation caused by the atmosphere and is defined as the extent to which a person feels excited, alert, and active [14]. Dominance is a sense of control and of the feeling that one dominates a certain context [13].

The current study adopts a two-factor construct of retail emotion [15]. While the three-factor construct of retail emotion has been widely dominant, more recent research indicates that positive emotion should be considered as comprising pleasure and arousal [3]. It is because that the pleasure and arousal are often hard to get statistically separated, and that the two emotions positive and strong relationship between pleasure and arousal is well proven [15]. Kenhoven and Desrumaux [16] found that pleasure and arousal are highly correlated, which indicates that both emotions can be comprised under one, the positive emotion. Research finds that the mechanism of dominance in retail separates from pleasure or arousal [11], because it is not a pure emotion but reflects customer's cognitive reaction to stimuli proceeding emotion [6]. Russell and Pratt [17] dropped dominance from PAD and used only pleasure and arousal as emotional responses, arguing that dominance is requiring cognitive interpretation. Loureiro and Roschk [18] consider positive emotion as comprising pleasure and arousal, instead of using each emotion as a single construct. Based on the literature, the present study takes the two-factor construct of retail emotion: (1) positive emotion (as a combination of pleasure and energetic arousal), and (2) dominance.

According to the S-O-R framework [12], positive emotion is a key organism between in-store marketing stimuli (e.g., retail environment factors) and shoppers' responses (e.g., approach or avoidance behaviors regarding the product/services). Indeed, research has highlighted the role of positive emotion to be valid in understanding in-store consumption and brand/store evaluations. The influence of emotional states on response towards virtual retail is also supported by Koo and Ju [19]. Their study results confirm that virtual atmosphere cues have a positive impact on pleasure and arousal, and both have subsequent effects on the intention to continue to use the virtual store. Yet, both positive emotional states, comprising arousal and pleasure, influence consumer satisfaction while shopping and loyalty [20].

2.3 Emotion and Perceived Brand Luxury

Dominance to positive emotion. Dominance, as a cognitive response to retail atmosphere, should increase positive emotion [21]. While there exist inconsistent results in literature, most research suggests the role of dominance as a valid predictor of positive emotion (pleasure and arousal) [22]. There exists a sequential flow among the emotional reactions that dominance first occurs then it affects positive emotion (pleasure and arousal) (e.g., 21). That is, positive emotion often does not form directly by retail stimuli rather they do under an influence of cognitive reactions [11]. Loureiro and Roschk [18] assume dominance as important informational cues, which determine pleasure and subsequent behavior intentions. Likewise, in a study by Cho and Lee [23] which explored the offline luxury retail context, perceived store luxury increases pleasure and

arousal but not dominance.

The positive influence of dominance on emotion has been documented in e-tail. Chang et al. [24] investigate the relationship between consumers' emotional model and purchase behavior from the perspective of web environment. The results find that web environment has significant and positive influence on dominance, or control, and that control indirectly influences pleasure. Indeed, in online environments, perceived dominance is noted to positively influences pleasure. Based on the literature, the following is suggested:

H1: Dominance increases positive emotion regarding luxury wearables in e-tail.

Dominance to perceived brand luxury. The direct effect of dominance on customer response has been largely inconsistent, but studies argue a significant positive role of dominance on purchase intention and positive attitudes. For instance, Hsieh et al. [25] extend existing knowledge about consumer activities in online retail environments and focus on the role of dominance. They find that dominance influences purchasing intentions both directly and indirectly through pleasure. Thus, below is hypothesized:

H2. Dominance increases perceived brand luxury regarding luxury wearables in e-tail.

Positive emotion to perceived brand luxury. Positive emotion increases perceived brand luxury. Positive emotional states impacted positive consumer evaluation. Pleasure is consistently reported to positively impact approach behavior [20], and known to be the most significant factor for it. Pleasure is known to predict intention for purchase, extra time spent in store, and unplanned purchasing [12], and increases affinity for the store [26]. Arousal is known to increase the approach behavior in a pleasant environment but decrease it in an unpleasant environment, and moderate arousal enhances approach behavior [12]. It is known to influence more interaction with the store environment and increased the likelihood to return to the same environment, and increases money and time spent in store. Chang et al. [24] note that pleasure positively influences purchasing behavior. Indeed, Miniario et al. [27] note that pleasure leads to a direct and positive effect on satisfaction that mediates a positive effect on behavioral intention. The influence of emotional states on response is also supported by Koo and Ju [19]. Their study results confirm that virtual atmosphere cues have a positive impact on pleasure and arousal, and both have subsequent effects on the intention to continue to use the virtual store. Both positive emotional states, comprising pleasure and arousal, influence consumer satisfaction while shopping and loyalty. Based on the literature, the following is hypothesized:

H3. Positive emotion increases perceived brand luxury regarding luxury wearables in e-tail.

2.4 Gender

Gender should make difference in shopping behavior of consumers [28]. Gender difference comes from biological as well as sociological learning process such through cultural shaping and reinforcement [29]. Early studies explain the biological difference between genders, while recent research has enhanced the understanding of communication and processing differences in genders and try to find the gender difference from the difference of socializing process. Gender performs a crucial moderation in the relationships between dominance and positive emotion, and between the emotions and perceived brand luxury [30]. According to past studies, men are more goal-oriented than female shoppers when shopping in retail settings, and thus are less influenced by store stimuli. Men hold absolutely opposed values regarding effective shopping in comparison to female shoppers, and men prefer to shop quickly and put as minimum an effort as possible, while female shoppers enjoy shopping and are happy to spend a substantial amount of time and energy [31]. Also, men shop shorter and are less involved than female shoppers [28]. In addition, studies suggested that female shoppers regard symbolic (hedonic) motives and criteria as more important determinants of shopping

than do men. Past research notes that female shoppers are more likely to be influenced by retail emotion in determining their shopping outcomes than men, and the difference by gender in consumption has been noted in virtual retail contexts [30]. Thus, the next hypotheses are developed as follows.

- H4. Gender moderates the effect of dominance on positive emotion regarding luxury wearables in e-tail.
- H5. Gender moderates the effect of dominance on perceived brand luxury regarding luxury wearables in e-tail.
- H6. Gender moderates the effect of positive emotion on perceived brand luxury regarding luxury wearables in e-tail.

3. METHODS

3.1 Study Design

Testing the hypotheses is based on a main online survey with 393 U.S. subjects recruited through an international research company. This study employs a scenario method based on the previous research that analyzes consumer psychology in retail contexts. A scenario method allows consumers to be emotionally and cognitively engaged in the experimental context and, thus, generates realistic and meaningful consumer responses. The fictitious shopping context is about a luxury smartwatch sold through a web-based retail context. A luxury smart watch was selected as a stimulus for hypothesis testing because the most common type of wearable device in the luxury market is a smart watch, and a wrist-attached device is the most actively consumed product in the overall wearable device market. This is because it was judged that it would be easy to obtain valid responses from them. The product images and features were adopted from commercial wearables and revised for the current context. The participants were invited through emails and exposed to a fictitious shopping scenario. The participants were asked to carefully read the description and imagine visiting the e-store for the first time. After viewing the scenario (the fictitious virtual retail images and descriptions of the store and products), the respondents are asked to complete a questionnaire containing relevant measures.

3.2 Measures

The survey measures derived from those used in related research. Measures of positive emotion and dominance were bipolar semantic differentials (e.g., bad–good, favorable–unfavorable, not likeable–likeable, not acceptable–acceptable) from the previous studies: Positive emotion was operationalized as the average of eight five-point scales (ranging from “not at all” to “very much”) items which are the measures of pleasure or arousal in past research [19]. Dominance was measured using a set of six items [32]. Perceived brand luxury is measured using a set of five items from previous studies and modified for the current context. Each was anchored by 1 (not at all agree) and 5 (very much agree).

4. RESULTS

4.1 Preliminary Analysis

Participant profile. A total of 393 responses were collected in one week. Of the participants 56.9% were female while 43.1% were male. average age of participants was 32.70 years (SD 14.89). Of them, 22.0% were 29 years old or younger, 25.5% were 30-39 years old, 16.0%, were 40-49 years old, 12.2%, were 50-59 years old, 11.4% were 60-69 years old, and 9.9% were 70 years or older. Of the participants 47.6% had a college

graduate or post-graduate degree, while 45.7% were high school graduate. Regarding the annual household income, 21.5% of the participants answered that their income was \$29,999 or lower, 21.1% were \$30,000-\$49,999, 19.7% were \$50,000-\$59,999, 18.1% were \$60,000-\$89,999, and 17.5% were \$90,000 or higher. 10,000-39,999 34.6%, 40,000- ~99000 53% 13.5% \$100,000 or higher. Hispanic 3.1%, Caucasian were 86.8%, African-American were 4.3%, Asian were 4.3%, 2.3% were Hispanic, and 2.1% were Asian. 46.3% high school graduate while 45.5% were college graduate or higher.

Item validity and reliability. The convergent and discriminant validity of the measures was tested using exploratory factor analysis (EFA). The results of the EFA showed a total of 84.16% explanation with three factors (i.e., positive emotion, dominance, perceived brand luxury). All the scores of Average Variance Extracted (AVE) were larger than any squared correlations among the constructs, showing that discriminant validity is achieved. Likewise, average variance extracted (AVE) from the constructs met the required levels of .7 and .5, satisfying the required levels. Composite reliability (CR) and average variance extracted (AVE) from the constructs meet the required levels of .7 and .5. The AVE for one construct was found to be greater than the squared correlation between that construct and any other, thereby confirming the discriminant validity of the measures. Cronbach's alpha coefficients for the variables ranged from .70 to .95 that are satisfactory. The convergent and discriminant validity of the measures were tested by confirmatory factor analysis. The results confirmed that all factor loadings of indicators for the latent variable exceeded 0.6 for the latent variable and show an acceptable convergent validity for each construct. All the measures are along with their respective descriptive statistics, correlations, and discriminant validity analyses.

4.2 Hypothesis Testing

Dominance to positive emotion (H1). With Hypothesis 1, dominance was expected to increase positive emotion regarding luxury wearables in e-tail. The results of hierarchical regression analysis, with dominance as the independent variable and positive emotion as the dependent variable, showed a significant positive effect of dominance on positive emotion ($\beta = .214$, $t = 4.466$, $p < .001$). Thus, the findings supported H1.

Dominance to perceived brand luxury (H2). Hypothesis 2 predicted that dominance would increase perceived brand luxury regarding luxury wearables in e-tail. This hypothesis was tested using hierarchical regression analysis, with dominance as the independent variable and perceived luxury virtual retail brand image as the dependent variable. The regression analysis showed that dominance felt in the virtual retail does not have a meaningful effect on perceived brand luxury (H2: $\beta = .000$, $t = -.007$, $p > .05$), failing to support H2.

Positive emotion to perceived brand luxury (H3). Hypothesis 3 predicted that positive emotion would increase perceived brand luxury regarding luxury wearables in e-tail. This hypothesis was tested using hierarchical regression analysis, with positive emotion as the independent variable and perceived Brand Luxury as the dependent variable. The results of the regression analysis showed that positive emotion has a significant effect on Perceived Brand Luxury ($\beta = .779$, $t = 23.062$, $p < .001$). This supports H3.

Gender moderation (H4- H6). In analysis, the interaction terms between dominance and gender were added to the hierarchical regression analysis to test gender moderation in the relationship between dominance and positive emotion. The results revealed a significant but negative moderating effect of gender (H4; $\beta = -.135$, $t = -2.664$, $p < .01$). This supports H4. Meanwhile, the interaction term between dominance and gender was added to the hierarchical regression analysis, showing no significant effect on perceived brand luxury (H5; $\beta = .199$, $t = .905$, $p > .05$). This fails to support H5. Lastly, the moderation effect of gender in the relationship between positive emotion and perceived brand luxury was positive and significant (H6; $\beta = .476$, $t = 3.518$, $p < .001$). This supports H6.

Table 1. Factor analysis

Items	Factor loading	Eigen value	%	Cronbach's α
Positive Emotion				
Aroused	.889			
Wide Awake	.880			
Excited	.801			
Contented-	.708	4.166	34.716	.87
Happy	.807			
Pleased	.698			
Hopeful	.786			
Satisfied	.892			
Dominance				
Dominant	.833			
In control	.675	2.285	30.402	.93
Autonomous	.728			
Influential	.867			
Perceived Brand Luxury				
Prestige	.884			
High status	.845	3.648	19.038	.96
Premium quality	.859			
Rarity	.709			
Excessive	.879			

Table 2. Hierarchical Regression Model (1)

Step	Dependent Variable	Positive Emotion			
	Independent Variables	β	t-value	R ² (Adj. R ²)	F Value
1	Education	-.150	-2.967**	.122 (.113)	13.484***
	Income	.196	3.757***		
	Ethnicity	.134	2.712**		
	Age	-.249	-5.075***		
2	Education	-.188	-3.749***	.165 (.154)	15.303***
	Income	.182	3.557***		
	Ethnicity	.155	3.194**		
	Age	-.241	-5.013***		
	Dominance	.214	4.466***		
3	Education	-.158	-3.315**	.253 (.242)	21.809***
	Income	.177	3.658***		
	Ethnicity	.140	3.030**		
	Age	-.199	-4.329***		
	Dominance	.209	4.600***		
	Gender	.301	6.748***		

	Education	-.170	-3.588***		
	Income	.193	3.988***		
	Ethnicity	.146	3.177**		
4	Age	-.206	-4.520***	.267 (.253)	20.002***
	Dominance	.220	4.864***		
	Gender	.365	7.251***		
	Dominance × Gender	-.135	-2.664**		

Notes: a. Dummy variables are used for fit (0=non-fit, 1 = fit) and gender (0 = male, 1 = female).

b. * $p < .05$, ** $p < .01$, *** $p < .001$

5. DISCUSSION

5.1 Summary and Implications

Consumer emotion in a retail store is a key to understanding of consumer choices and preferences. Particularly in luxury, managing in-store consumer emotion is of primary importance for managers, given the critical role of emotion in consumer shopping experiences in retail atmosphere [9]. Given the growing importance of virtual retail business for luxury, the current research attempts to address the role of consumer emotion in forming perceived brand luxury. Furthermore, moderation of gender in the relationships among emotion and Perceived brand luxury was tested. A total of 393 U.S. shoppers participated in the main survey using a hypothetical luxury virtual retail context with a shopping scenario.

The results note that dominance felt in the hypothetical luxury virtual retail contexts significantly positively influences positive emotion, and positive emotion significantly increases perceived brand luxury. The positive effect of dominance on positive emotion found in the result is consistent with the previous findings [21]; they reported that as a type of cognitive response to virtual retail atmospheric cues or by itself an informational cue [6], dominance precedes pleasure and arousal. Indeed, the significant influence of positive emotion on perceived brand luxury reported in this study is in line with the previous results [24].

By contrast, in the results, dominance has no significant direct effect on perceived brand luxury. the insignificant direct effect of dominance on perceived brand luxury shows different results from the initial hypothesis which had been based on the past research documenting a valid influence of dominance on consumer attitudes or evaluations [10]. But the result is consistent with the other flow of research that has questioned the direct influence of dominance on consumer evaluations or attitudes in retail contexts [6].

The results may contribute to the literature of emotion in virtual retail which supports a more simplified effective framework of emotion [10]. The research draws upon a modified version of retail emotion suggested by recent relevant flow of literature [21], which simplifies the Pleasure-Arousal-Dominance model into two-factor model of dominance and positive emotion (which combines pleasure and arousal in the original P-A-D model). The current framework of luxury virtual retail emotion reflects dominance as the first cognitive reaction to stimuli in store, and it affects perceived brand luxury directly or indirectly through positive emotion.

Furthermore, the results contribute to the past literature testing influence of consumer characteristics on in-store consumer experiences including gender. Consumers' individual characteristics are most important factors affecting the way how individual customer reacts to certain retail stimuli, because consumer responses towards certain retail atmosphere should vastly vary by individuals [3].

Overall, the expansion of the luxury wearables market will inevitably occur as the market develops. Therefore, efforts to predict and research consumer behavior regarding luxury wearables must be continued by synthesizing the existing academic theories of luxury and academic research results related to wearables. It

is expected that this study will contribute to providing basic information and serving as a guideline as an initial attempt in this future research flow.

Table 3. Hierarchical Regression Model (2)

Step	Dependent Variable	Positive Emotion			
	Independent Variables	β	t-value	R ² (Adj. R ²)	F Value
1	Education	-.147	-2.905**	.120 (.111)	13.267***
	Income	.090	1.724		
	Ethnicity	.069	1.390		
	Age	-.314	-6.378***		
2	Education	-.030	-.936	.653 (.648)	121.077***
	Income	-.063	-1.869		
	Ethnicity	-.036	-1.133		
	Age	-.119	-3.730***		
	Dominance	.000	-.007		
	Positive emotion	.779	23.062***		
3	Education	-.031	-.942	.653 (.647)	103.517***
	Income	-.062	-1.827		
	Ethnicity	-.036	-1.123		
	Age	-.120	-3.723***		
	Dominance	.000	.005		
	Positive emotion	.779	22.877***		
	Gender	-.004	-.115		
4	Education	-.035	-1.008	.668 (.661)	85.781***
	Income	-.062	-1.707		
	Ethnicity	-.031	-1.002		
	Age	-.120	-3.793***		
	Dominance	-.085	-.886		
	Pleasure	.462	4.805***		
	Gender	-.521	-2.850**		
	Dominance × Gender	.199	.905		
	Positive Emotion × Gender	.476	3.518***		

Notes: a. Dummy variables are used for fit (0=non-fit, 1 = fit) and gender (0 = male, 1 = female).

b. * $p < .05$, ** $p < .01$, *** $p < .001$

5.2 Limitations and Future Work

The research has limitations. First, as a limitation of the study, the generalization of the results of this study should be cautious due to the stimuli of this study and the limited responder profile, and detailed study of boundary conditions should be followed. While the scenario method employed in the survey helps increasing realistic contexts inducing a more effective responses from the participants [27] still the results may not reflect an actual virtual retail context. Adopting an actual virtual retail site as the stimuli would enhance validity of

the results in next studies. Given a wide spectrum of emotion felt in retail contexts reported in the past studies, more studies should test the various emotional types in forming luxury. Lastly, the future studies will benefit from extending the current findings with embracing the antecedents of emotion in luxury virtual retail environments [32].

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