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Benefits of mass customized products: moderating role of product involvement and fashion innovativeness

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Abstract

The objective of this study was to explore impacts and benefits of mass customized products on emotional product attachment, favorable attitudes toward a mass customization program, and the ongoing effect on loyalty intentions. This study further investigated how benefits, attachment, attitudes, and loyalty intentions differed as a function of involvement and fashion innovativeness. 290 female online shoppers in South Korea participated in an online survey. Results of this study revealed that perceived benefits positively influenced emotional product attachment and attitudes toward a mass customization program. In addition, attachment positively influenced attitudes, which in turn affected loyalty intentions. This study also found that benefits, attachment, attitudes, and loyalty intentions were all higher in highly involved consumers (high fashion innovators) than those in less involved consumers (low fashion innovators). This study concludes with theoretical and practical implications for mass customization programs.

Keywords: Psychology, Information science

1. Introduction

Mass customization refers to the development, production, marketing, and delivery of a customized product or service that offers various customizing options, enabling an individual to find exactly what they need at a reasonable price (Pine, 1993). Mass customization is a useful marketing solution for acquiring and retaining consumers and building long term relationships with them. As consumers and retailers co-create new products, consumers gain an opportunity to purchase more favorable products, and their willingness to pay extra costs increases. Moreover, when consumers engage in a mass customization program, retailers obtain information regarding different levels of customers' preferences. Consequently, they are able to offer a highly personalized shopping experience (Endo and Kincade, 2008).

Today's Internet technology allows retailers to collect and exchange important information more rapidly and efficiently than ever before, thus reducing lead time, as well as facilitating more design variations and greater flexibility during production (Wall Street Journal, 2015). As customization can become a tactical tool that provides extra benefits to consumers, customization has been adopted in various industries, including computers (e.g., Dell), apparel (e.g., Brooks Brothers), home furnishing (e.g., Pottery Barn), shoes (e.g., Nike), handbags (e.g., Longchamp), and cars (e.g., Toyota). Luxury brands (e.g., Louis Vuitton and Burberry) that were slow in launching e-commerce now offer customization programs through online to provide personalized design and connect with their customers (Quartz, 2016). However, even with these advantages, some programs have been successful (e.g., those operated by Lands' End and Nike), while others have faced serious difficulties (e.g., Levi Strauss) (Franke and Piller, 2004). Reasons for such disparity suggested by scholars include consumers' extensive participation, their preference for default option, and their inability to recognize the existence of a mass customization program (Franke et al., 2009; Simonson, 2005). Empirical research on the effect of customization on consumer responses has also shown somewhat inconsistent results. For example, in Franke and Schreier (2008)'s study, consumers exhibited higher willingness to pay for a customized product than for a standard product. However, although consumers in Schoder et al. (2006)'s study preferred customized newspapers, their willingness to pay for a customized version was not higher than that for a regular newspaper. To ensure the long-term success of a mass customization offering, generating increased benefits for consumers can be a competitive advantage (Franke et al., 2009), and there is a compelling need for a deeper analysis of consumer benefit.

Practitioners and scholars have paid growing attention to mass customization for online retailing such as customer value (Franke et al., 2009), effects of program features such as toolkits, design options on consumer responses (Dellaert and Stremersch, 2005), and value of quick response supply chain strategy (Choi and Guo, 2017).

However, few researchers have conducted empirical studies on consumer benefits in apparel mass customization (Cho and Fiorito, 2009; Fiore et al., 2004; Yoo and Park, 2016). Therefore, the objective of this study is to determine which benefits consumers perceive from a mass customized product. Given the lack of research into relationships among benefit, emotional product attachment, attitude toward a mass customization program, and loyalty intentions in the context of apparel retailing, this study also explores whether benefits of mass customized apparel products positively influence emotional product attachment and favorable attitudes toward a mass customization program and whether such attachment and attitudes could ultimately improve loyalty intentions. Lastly, this study investigates how perceived benefits, emotional attachment, attitude toward a mass customization program, and loyalty intentions differs according to individual differences (i.e., different levels of consumer involvement and fashion innovativeness).

This study draws on Hierarchy of Effects (HOE) model (Lavidge and Steiner, 1961) from information processing and persuasion theories, dealing with decision making process in general. Although HOE model has been widely used for several decades, some researchers have questioned the value of HOE model for proving its communication effects (Weilbacher, 2001). One of the reasons lies in the fact that HOE model can be well explained only in the context of advertising. However, Barry (2002) argued that there is no literature that supports that the HOE model works only in advertising. Furthermore, considering the fact that the goal of marketing communication is persuasion, the key issue is to identify how consumers process information, form an attitude, and behave based on information processed and the attitude formed. In this context, Weilbacher (2001) noted that the HOE model can better explain consumer information processing in integrated marketing communication (IMC), and Barry (2002) also pointed out that the HOE model should be used to other marketing communications. In fact, the HOE model has been successfully applied to other areas such as SNS communication (Hutter et al., 2013), online marketing and retailing (Yoo and Kim, 2014; Yoo et al., 2004), and branding (Keller and Lehmann, 2006; Zablah et al., 2010).

In a similar vein, this study examine consumer benefits in a mass customization program, as one of the marketing communication methods. Specifically, this study investigates how consumer benefits perceived influence attitudes and behavioral intentions based on the HOE model. Empirical findings from this study are expected to shed new light on extant HOE model literature by proving effects of HOE model in a mass customization context. Furthermore, results of this study will provide practical information for online retailers seeking to build effective mass customization programs. This study also provides information on whether benefits perceived by consumers would lead to positive attitudes and higher loyalty intentions.

2. Background

2.1. Hierarchy of effect model in mass customization

Lavidge and Steiner's (1961) Hierarchy of Effects (HOE) model provided the theoretical framework for this study. This model has been used to describe cognition-affect-conation sequence that consumers go through when they process advertising messages. *Cognition* refers to a "system of beliefs structured into some kind of semantic network" (Holbrook and Batra, 1987, p. 405) such as brand awareness, knowledge, beliefs, and benefits. *Affect* consists of feelings and emotions, and *conation* covers both behavioral intentions and actual behaviors (Barry and Howard, 1990).

Based on the Barry (2002) and Weilbacher (2001)'s argument that HOE model can be examined in other marketing communication context except for advertising, this study views mass customization as one of integrated marketing communication (IMC) strategies. According to Duncan and Moriarty (1997), five sources of IMC includes product messages (e.g., usefulness and design), service messages (e.g., interactions), unplanned communication (e.g., word-of-mouth), absence of communication (e.g., silence due to the lack of information), and traditional marketing communication planned by a company (e.g., advertising). A central idea in IMC is that communication takes place based on the integration of these five sources (Duncan and Moriarty, 1997). In addition to a company's existing planned and unplanned messages, mass customization can transfer consistent product and service messages to consumers. Furthermore, as a relationship marketing tactic, retailers can provide more personalized and individualized products to consumers online, and consumers can select and process information relevant to them through mass customization, indicating the movement from one-way passive advertising messages to interactive communication (Wind and Rangaswamy, 2001). Applying the HOE model, this study therefore posits that benefits of using a mass customized product (cognition) influence emotional product attachment and attitudes toward a mass customization program (affect), which will then have an impact on loyalty intentions (conation).

2.2. Perceived benefits

According to motivation theory (Deci, 1975), motivation is divided into extrinsic and intrinsic dimensions. Extrinsic motivation comes from consumers' perceived usefulness in terms of outcomes of their behavior or product performance whereas intrinsic motivation is related to interest in performing an action, thus involving the process of the action. Applying motivation theory to explain perceived benefit, Kim et al. (2007) divided perceived benefit into extrinsic (also called cognitive or utilitarian) benefit and intrinsic (also called affective or hedonic) benefit. Extrinsic benefit refers to the product's usefulness, indicating the value a consumer perceives

from using a product (Rogers, 1995) and is similar to product quality in marketing (Kim et al., 2007). Product quality can be defined as a consumer's rational evaluation of product excellence (Zeithaml, 1988) or as its perceived fit with the consumer's needs (Steenkamp, 1990). On the other hand, intrinsic benefit refers to enjoyment (Kim et al., 2007); consumers experience pleasure from using a product, and this emotional benefit consists of affective consequences or feelings that the product creates rather than the product performance that consumers expect beforehand (Davis et al., 1992; Sweeney and Soutar, 2001).

In a mass customization context, scholars have identified two types of perceived benefit: product and mass customization experience (Fiore et al., 2004; Franke and Piller, 2004; Schreier, 2006) equivalent to extrinsic and intrinsic benefits, respectively. Previous research has focused on utilitarian value to explain product benefit, referring to aesthetic and functional fit between a mass-customized product and consumer preferences (Franke and Schreier, 2008). Wind and Rangaswamy (2001) also defined benefit as the ability to design a product that satisfies consumers' needs. When consumers' needs match the product features, the benefits consumers perceive from the product increase (Simonson, 2005). A mass customization program allows consumers to design products that fit their individual needs relatively easily using different design and style options provided for a specific product. By possessing these unique and individualized products, consumers perceive higher benefits (Simonson, 2005).

The perceived benefit associated with a mass customization experience is related to the intrinsic benefit for consumers. Consumers can engage in product design using a specific method provided by the customization program. A well-designed co-design process can generate pleasure or enjoyment that satisfies both hedonic and experiential needs (Franke and Piller, 2003). According to Schreier (2006), the process of designing their own product adds value such as satisfaction of curiosity, entertainment, and novelty. Another study on traditional do-it-yourself (DIY) products found that consumers who engaged in DIY perceived it as being rewarding, enjoyable, and fun (Williams, 2004). Randal et al. (2007) also emphasized that consumers who have experienced designing their own product perceive increased benefits.

2.3. Emotional product attachment

Early research on attachment tended to focus on psychological aspects, defining emotional attachment as an emotional bond between an individual and others such as infants, mothers, friends, and romantic mates (Bowlby, 1982; Weiss, 1988). However, marketing research has extended this to the relationship between a person and other objects such as gifts (Mick and DeMoss, 1990), places of residence (Hill and Stamey, 1990), brands (Park et al., 2006), sports teams (Babad, 1987), organizations (Koo and Hardin, 2008), and products (Mugge et al., 2005). Although scholars in marketing and psychology have examined the attachment

construct in various relationships, the basic notion of emotional attachment is that it can be used as a criterion when predicting relationships between a person and other objects (Bowly, 1969). In the context of mass customization, the current study examines consumers' emotional attachment to a mass-customized product and the relationship with other consumer responses.

Product attachment refers to emotional bonds and feelings that connect a person with a product (Park et al., 2006; Pedeliento et al., 2016). Product attachment is formed when products are emotionally tied to consumers, thus having a special meaning for them (Wallendorf and Arnould, 1988). If a strong product attachment is formed based on physical interaction, physical contact, and psychological appropriation, it plays a role in enhancing consumers' memories regarding the product (Grayson and Shulman, 2000). Also, attachment to a product makes consumers value the product, handle the product more carefully, and use the product longer (Mugge et al., 2005). Park et al. (2006) noted that consumers with a strong emotional attachment may even be willing to sacrifice their money, time, or energy to continue the relationship with the product. For example, consumers may pay a premium price for the product (i.e., sacrificing money), postpone replacing the product (i.e., sacrificing time), participate in the brand community, or search for the product information more intensively (i.e., sacrificing time and energy).

Grisaffe and Nguyen (2011) examined five antecedents of emotional attachment to a brand, namely user-derived benefits, including hedonic and utilitarian benefits, sensory benefits, and the achievement of self and social goals. When consumers achieve self- or social-oriented goals, they perceive higher benefits from the brand. Consequently, strong attachment can be formed. Also, sensory benefits such as taste and smell in a restaurant can increase emotional attachment to the restaurant. In the context of product attachment, Mugge et al. (2010) found that if a product offers superior utilitarian and hedonic benefits, consumers perceive a product as being more valuable and significant to them than other products, thus further contributing to the development of an emotional attachment. Similarly, if consumers perceive extrinsic and intrinsic benefits from a mass customized product, they will experience strong product attachment. Thus, the first hypothesis guiding our study assumes a positive effect due to perceived benefit on emotional product attachment.

H1: Perceived benefits (a: extrinsic benefit, b: intrinsic benefit) of a mass customized product will positively influence emotional product attachment.

2.4. Attitudes toward a mass-customization program

A favorable attitude plays a critical role in planning marketable products. Attitude refers to consumers' favorable or unfavorable evaluations of objects (Fishbein and Ajzen, 1975). Positive impacts of perceived benefits on attitudes have been

discussed extensively. For example, when consumers perceive higher benefits from Internet banking, they show favorable attitudes to using online banking (Lee, 2009). When using a mass customization program, consumers' perceived benefits are also likely to be important in their evaluations of a mass customization program. If the mass customized product meets their expectations and they perceive high extrinsic and intrinsic benefits for both the product and the experience, they are likely to have favorable attitudes toward that mass customization program. Therefore, the following hypothesis was developed.

H2: Perceived benefits (a: extrinsic benefit, b: intrinsic benefit) of a mass customized product will positively influence attitudes toward a mass customization program.

2.5. Emotional product attachment, attitude, and loyalty intentions

Although attitude and emotional attachment are very similar, Klein and Baker (2004) highlighted differences between these two constructs. Strong attachment is somewhat associated with a positive attitude toward a product, but strong or weak attachment does not always indicate positive or negative emotions or feelings toward a product (Klein and Baker, 2004; Schultz et al., 1989). Also, consumers who have a positive attitude toward a product may at the same time think the product is unimportant to them (Schultz et al., 1989). Mugge et al. (2005) noted that consumers with strong product attachment are likely to preserve the product whereas those with a positive attitude toward a product do not necessarily engage in protective behaviors. Park et al. (2010) distinguished between brand attachment and brand attitude, arguing that emotional brand attachment is a more powerful driver of behaviors (e.g., brand purchase, repeat purchase, and willingness to recommend) than brand attitude because brand attachments are formed as a function of brand-self connections or the prominence of brand thoughts. In contrast, brand attitude is related to positive or negative reactions to the brand and is thus independent from the strength of the associated emotional responses (Park et al., 2010).

Although both emotional attachment and attitude are important concepts in marketing, these two constructs have tended to be studied separately. Research on the relationship between them has been limited due to their inherent similarity. This study therefore chose to examine the relationship between product attachment and attitude, although their relationship is not at the same level. Specifically, this study examined the effect of product attachment on program attitude. According to Ilicic and Webster (2011), product endorsements by celebrities to whom consumers are strongly attached tend to increase positive attitudes toward both the advertisement and the brand. Similarly, if consumers are attached to a mass-customized product they engaged in designing, they may have a favorable attitude toward the associated mass customization program. Therefore, this study has the following hypothesis.

H3: Emotional product attachment will positively influence attitudes toward a mass customization program.

According to the attachment theory, if an emotional bond between an object and a person is formed, the individual concerned tends to naturally seek proximity to that object and contact with it (Bowlby, 1969). The main outcome of attachment is thus a consumer's intention to maintain proximity with the product they have become attached to (Pedeliento et al., 2016). This can be applied in marketing research to explain loyalty behaviors. Maintaining a relationship with a product based on strong attachment increases consumers' loyalty toward the product. According to Koo and Hardin (2008), strong attachment positively influences behavioral intentions. For example, if people are attached to a specific sports team, they are more likely to spend time watching their games, attend sporting events, and purchase more products related to that team. Empirical research has also found that a strong attachment facilitates consumers' financial investment in the brand (Kim and Joung, 2016), their repeated purchases (Park et al., 2010; Thomson et al., 2005), and their loyalty (Pedeliento et al., 2016). Thus, this study proposes that emotional product attachment positively influences loyalty intentions.

H4: Emotional product attachment will positively influence loyalty intentions.

Conative loyalty refers to the desire to rebuy and a consumer's commitment to the action of rebuying, implying that loyalty intentions include intentions to repurchase a product and recommend, repatronize, and revisit a brand or store (Oliver, 1999). The theory of Reasoned Action (Ajzen and Fishbein, 1980) and empirical research provide ample support for the relationship between attitude and behavioral intention. This theory explains how consumers' attitudes influence their behavioral intentions, which in turn are connected to actual behaviors. In online retailing, Chen et al. (2002) found that consumers' attitudes toward online shopping significantly influence their behavioral intentions. Furthermore, a number of previous studies on mass customization have discussed the impact of attitudes on behavioral intentions. For example, Cho and Fiorito (2009) found a positive effect of attitudes towards an apparel mass customization website on intentions to use apparel e-customization. Kang and Kim (2012) also reported that attitudes toward e-customized apparel could affect purchase intentions regarding e-customized apparel. Therefore, the following hypothesis was developed.

H5: Attitude toward a mass customization program will positively influence loyalty intentions.

2.6. Involvement and fashion innovativeness

This study also examined effects of two individual differences (involvement and fashion innovativeness) on consumers' cognitive, affective, and conative responses

to a mass customized product and a mass customization program. Product involvement is defined as the degree to which a consumer perceives a product to be important (Loureiro et al., 2013; Zaichkowsky, 1985). According to Petty et al. (1983)'s Elaboration Likelihood Model (ELM), consumers can take one of two different routes, either central or peripheral, to process a message depending on their involvement level. A central route is activated by the likelihood of a highly elaborated communication situation. When consumer involvement is high, they are likely to actively engage in cognitive thoughts about the merits of a product. On the other hand, a peripheral route is used when a person is not engaged in extensive product-relevant thinking. Consumers rely more on superficial aspects of the product (e.g., product package design) (Petty et al., 1983).

Consumer involvement is an important factor in successfully pursuing mass customization and developing its associated benefits. Research has shown that highly involved consumers are likely to devote more efforts (in terms of time, money and ambition) than those who are less involved when designing a customized product compared to an off-the-shelf product (Damkuvienne et al., 2012). Highly involved consumers also tend to define their preferred product attributes more thoroughly and clearly perceive the fit between the customized product and their preferences (Simonson, 2005). Franke et al. (2009) found a positive impact of product involvement on the benefit derived from mass customization. Thus, this study assumes that more positive cognitive, affective, and conative responses will be generated for highly involved consumers compared to those who are less involved.

H6: Compared to less involved consumers, highly involved consumers will have more positive responses to [(a) the perceived benefits of a mass customized product, (b) emotional product attachment, (c) attitudes toward a mass customization program, and (d) loyalty intentions].

The second individual difference examined in this study was fashion innovativeness, which refers to the level of consumers' innovative propensity to adopt and accept new fashion products (Kim and Rhee, 2001). Research comparing high and low innovators found that consumers with high innovativeness tend to be more active in the adoption of new trends, innovative products, and new service. They tend to have greater knowledge of products. They also tend to be experts and heavy purchasers of products (Birtwistle and Shearer, 2001; Kim et al., 2012).

Franke and Schreier (2008) used commodity theory (Lynn, 1991) to explain consumers' motivation for purchasing unique and user-specific products created by mass customization. According to their theory, perceived scarcity strengthens consumers' desire to obtain unique products. Consumers who resist conformity tend to purchase unique, rare, novel, and customized products that are unavailable through mass production (Tian et al., 2001). Therefore, mass customization may

be an effective strategy that allows them to differentiate themselves from others through their possession of truly unique products (Franke and Schreier, 2008; Simonson, 2005). Since mass customization programs offer a variety of products and require consumers to share innovative knowledge and use innovative functions for co-creation (Damkuvienne et al., 2012), fashion innovators are thus more likely to actively adopt mass customization systems as they enable them to design unique and specific products. Wang and Cho (2012) found positive relationships between fashion innovativeness and attitudes toward both product and online mass customization and between fashion innovativeness and behavioral intentions. Thus, this study developed the following hypothesis:

H7: Compared to low fashion innovators, high fashion innovators will have more positive responses to [(a) the perceived benefits of a mass-customized product, (b) emotional product attachment, (c) attitudes toward a mass customization program, and (d) loyalty intentions].

3. Method

3.1. Procedure

An online survey was conducted using a research company in South Korea after recruiting female apparel shoppers as samples for this study. This group spends a relatively high percentage of their income on apparel shopping online (FedEx, 2015). Therefore, they were deemed suitable for this study. An invitation email was sent to potential participants with the survey link. Participants who clicked on the link submitted their informed consent to participate in this study. After being asked about their product involvement and fashion innovativeness, they were guided to create a trench coat using a well-known retailer's existing mass customization program to enhance external validity. Finally, based on their experience with the customization program, participants were asked to answer a set of survey questions designed to elicit information regarding their perceptions of the benefits of a mass customized product, their emotional product attachment, attitudes toward the mass customization program, and loyalty intentions. This research was exempted from Ewha Womans University's IRB review and was assigned protocol number #143-18.

3.2. Instrument development

All measurement items were adopted from the existing literature with adequate reliabilities (all Cronbach's alphas $>.70$). Extrinsic and intrinsic benefits of a mass customized product were measured with five Likert-type items (Franke et al., 2009; Franke and Schreier, 2010). For emotional product attachment, four Likert-type items of brand attachment (Thomson et al., 2005) were adopted and modified

for this study. Attitudes toward the mass customization program were measured with four semantically differential items from Li et al. (2001). Loyalty intentions were measured with three Likert-type items (Kwon and Lennon, 2009): willingness to repurchase the customized product in the customization program, willingness to revisit the customization program, and willingness to recommend the customization program. Product involvement was measured with six semantic differential items developed by Zaichkowsky (1985) and modified for this study. Fashion innovativeness was measured with six Likert-type items (Park et al., 2007). Likert-type items were measured using seven-point scales anchored by '1 = strongly disagree' and '7 = strongly agree' (see Table 1). Demographic information was collected at the end of the questionnaire.

4. Results

4.1. Description of participants

A total of 290 female consumers responded to the online survey. The average age of these participants was 39 years. Their ages were evenly distributed among the following four age groups: 20–29 (23.1%), 30–39 (28.3%), 40–49 (26.6%), and 50–59 (22.1%). Regarding married status, 58.3% were married and 40.0% were single. Occupation of the majority of the participants (45.2%) was given as 'office worker', followed by 'housewife' (22.8%), 'professional' (10.3%), 'student' (9.3%), and 'service' (5.5%). By using averaged scores for each variable, median split analyses were conducted to separate high and low involvement groups ($Med = 5.33$) and high and low fashion innovator groups ($Med = 4.17$). There was a significant difference in the involvement mean scores between the high involvement group ($N = 155$, $M = 6.28$, $SD = .51$) and the low involvement group ($N = 135$, $M = 4.65$, $SD = .64$) ($t = -23.96$, $df = 288$, $p < .001$). There was also a significant difference in fashion innovativeness mean scores between the high fashion innovator group ($N = 141$, $M = 5.03$, $SD = .72$) and the low fashion innovator group ($N = 149$, $M = 3.50$, $SD = .68$) ($t = -18.53$, $df = 288$, $p < .001$).

4.2. Measurement properties and invariance tests

A confirmatory factor analysis (CFA) was conducted to assess measurement properties. The overall fit of the measurement model was deemed satisfactory (TLI = .99, CFI = .99, NFI = .97, RMSEA = .04, $\chi^2(157) = 239.15$, $p < .001$). Since all t-values for the measurements' path coefficients were significant, convergent validity was achieved. Cronbach's alpha values of all measurements were greater than .90, indicating reliabilities of these scales (extrinsic benefit = .94, intrinsic benefit = .97, attachment = .92, attitude = .94, and loyalty intention = .96). Correlations among the four latent variables were calculated. No extremely high correlations

Table 1. Measurement scales.

Extrinsic and intrinsic Benefit (Franke et al., 2009)

Compared to the standard product, the customized product would _____.

1. Better satisfy my requirements
 2. Better meet my personal preferences
 3. More likely to be the best solution for me
-

Intrinsic Benefit (Franke and Schreier, 2010)

1. I enjoyed this design activity very much
 2. I thought designing the product was quite enjoyable
 3. Designing this product was very interesting
-

Emotional Product Attachment (Thomson et al., 2005)

Compared to the standard product of this brand, my feeling toward its customized product can be characterized by _____.

1. Affection
 2. Connection
 3. Passion
 4. Captivation
-

Attitude toward a mass customization program (Li et al., 2001)

The mass customization program in this website was

1. Unappealing – appealing
 2. Unpleasant – pleasant
 3. Unattractive – attractive
 4. Dislikable – likable
-

Loyalty Intentions (Kwon and Lennon, 2009)

1. I would purchase a customized product in this customization program in the near future
 2. I would recommend this customization program to friends or relatives
 3. I would return to this website and customize a product in the near future
-

Product Involvement (Zaichkowsky, 1985)

To me, clothing is _____.

1. Unimportant – important
2. Boring – interesting
3. Unappealing – appealing
4. Not needed – needed

Table 1. (Continued)

-
5. Unexciting – exciting
6. Worthless – valuable
-

Fashion innovativeness (Park et al., 2007)

-
1. In general, I am the last in my circle of friends to know the names of the latest new fashion ®
2. In general, I am among the last in my circle of friends to buy a new fashion item when it appears. ®
3. Compared to my friends, I own new fashion items.
4. I know the names of new fashion designers before other people do.
5. If I heard that a new fashion item was available in the store, I would be interested enough to buy it.
6. I will buy a new fashion item even if I have not seen it before.
-

($r < .90$) were found, implying no common method bias. Since all AVEs were greater than squared correlation coefficients, discriminant validity was achieved (see Table 2).

For comparison between high and low involvement groups, a non-restricted multi-group CFA (configural invariance model, M1) was conducted. Fit indices of the model revealed that the invariance of the model form was satisfied. Next, the invariance of factor loadings was tested by conducting chi-square difference tests between the full metric invariance model (the same factor loadings between groups, M2) and M1. Since chi-square differences between M1 and M2 was not significant, M2 was accepted. The scalar invariance was tested with a chi-square difference test between M2 and the full metric and full scalar invariance model (i.e., fully restricted factor loadings & invariant intercepts of indicators between groups, M3). The non-significant chi-square difference between M2 and M3 supported M3. Thus, M3 was used to test H6 (see Table 3).

Table 2. Correlations and AVEs of latent constructs.

Constructs	(1)	(2)	(3)	(4)	
(1) Extrinsic benefit	.85				
(2) Intrinsic benefit	.74 ^a .55 ^b	.91			
(3) Emotional product attachment	.72 ^a .51 ^b	.74 ^a .54 ^b	.74		
(4) Attitudes toward a mass customization program	.72 ^a .51	.79 ^a .62 ^b	.74 ^a .55 ^b	.81	
(5) Loalty intentions	.53 ^a .28 ^b	.60 ^a .36 ^b	.52 ^a .27 ^b	.64 ^a .41 ^b	.78

Note. Diagonal values in bold represent the AVE.

^a correlations of variables.

^b squared correlations of variables.

Table 3. Fit indices for invariance tests for the group comparisons.

Model	TLI	CFI	RMSEA	χ^2 (df)	Invariance test	$\chi^2_{Diff.}$ (df Diff.)	Decision
<i>Involvement group comparisons</i>							
M1	Configural invariance	.98	.98	.04	464.45 (314)		
M2	Full metric invariance	.98	.98	.04	494.78 (334)	M1 vs. M2	30.33 (20) Accept ($p = .06$)
M3	full metric & full scalar invariance	.98	.98	.04	501.74 (344)	M2 vs. M3	6.96 (10) Accept ($p = .73$)
<i>Fashion innovative group comparisons</i>							
M4	Configural invariance	.98	.98	.04	450.09 (314)		
M5	Full metric invariance	.98	.98	.04	478.08 (334)	M4 vs. M5	27.99 (20) Accept ($p = .11$)
M6	full metric & full scalar invariance	.98	.98	.04	481.94 (344)	M5 vs. M6	3.86 (10) Accept ($p = .5$)

For comparisons between the high and low fashion innovator groups, a non-restricted multi-group CFA (M4) was conducted. Invariance of the model form was confirmed since the fit of the model was good. Next, the invariance of factor loadings was tested by conducting chi-square difference tests for the full metric invariance model (M5) and M4. The chi-square difference between M4 and M5 was not significant, implying that M5 was accepted. Thus, the scalar invariance was tested by conducting chi-square difference tests between M5 and full metric and full scalar invariance model (M6). The non-significant chi-square difference between M5 and M6 supported M6. Therefore, M6 was used to test H7 (see Table 3).

4.3. Hypothesis testing

Single group structural equation modeling was used to test H1 through H5. Overall fit indices showed an acceptable fit to the data: $\chi^2(160) = 286.68$, $p < .001$, TLI = .99, CFI = .99, NFI = .97, RMSEA = .04. Significant t -values of path coefficients revealed positive impacts of perceived extrinsic benefit ($\beta = .45$) and intrinsic benefit ($\beta = .43$) of a mass customized product on emotional product attachment, positive impacts of perceived extrinsic benefit ($\beta = .17$) and intrinsic benefit ($\beta = .42$) of a mass customized product on attitudes toward the mass customization program, effects of emotional product attachment on attitudes toward the mass customization program ($\beta = .34$), and attitudes related to loyalty intentions ($\beta = .64$) (see Fig. 1). However, emotional product attachment did not significantly influence loyalty intentions ($\beta = .07$). Thus, H1, H2, H3, and H5 were supported but H4 was not.

Since emotional product attachment had no significant direct effect on loyalty intentions ($\beta = .07$), it was possible to further examine the significance of an indirect effect of emotional product attachment on loyalty intentions through attitudes

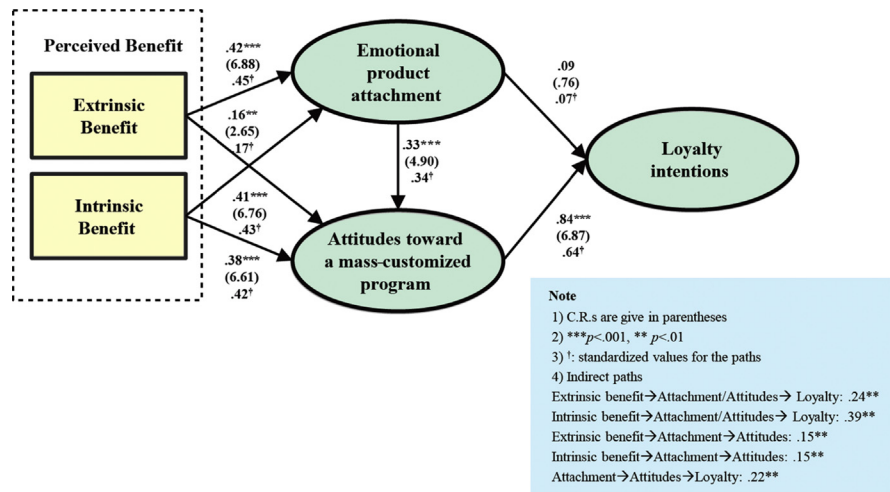


Fig. 1. Results of Single Structural Equation Modeling for H1–H5.

toward a mass-customized program. A decomposition of effect analysis was conducted, revealing that attitudes toward a mass-customized program function as a perfect mediator in the relationship between emotional product attachment and loyalty intentions ($\beta = .22$). In addition, extrinsic benefits indirectly ($\beta = .15$) and directly ($\beta = .17$) influenced attitudes and indirectly ($\beta = .24$) influenced loyalty intentions through emotional product attachment and attitudes toward a mass customized program, and intrinsic benefits indirectly ($\beta = .15$) and directly ($\beta = .42$) influenced attitudes and indirectly ($\beta = .39$) influenced loyalty intentions through emotional product attachment and attitudes toward a mass customized program (see Fig. 1).

Latent means analyses (LMA) were used to test H6. Given that all assumptions for model form, metric, and scalar invariance were satisfied, the involvement group difference in latent means was tested using the full metric and full scalar invariance model (M3). Means for extrinsic benefit, intrinsic benefit, emotional product attachment, attitudes, and loyalty intentions were set to zero for the low involvement group and estimated for the high involvement group. Table 3 presents latent mean parameter estimates. It shows significant mean differences, implying that the high involvement group perceived higher extrinsic benefits ($M = .80$) and intrinsic benefits ($M = .96$) for a mass customized product. They also had greater emotional product attachment ($M = .81$), more positive attitudes toward a mass customization program ($M = .72$), and greater behavioral intentions ($M = 1.00$) than the low involvement group (see Table 4). Therefore, H6 was supported.

The fashion innovative group difference in latent means was tested using the full metric and full scalar invariance model (M5). Means for extrinsic benefit, intrinsic benefit, emotional product attachment, attitudes, and behavioral intentions were again set to zero for the low fashion innovative group and estimated for the high fashion innovative group. Results revealed significant mean differences, implying

Table 4. Results of latent mean analyses for H6 and H7.

Construct	Involvement comparisons			Fashion innovativeness comparisons		
	Low	High	CR	Low	High	CR
Extrinsic benefit of a mass-customized product	0	.80	5.94***	0	5.78	4.26***
Intrinsic benefit of a mass-customized product	0	.96	6.90***	0	.68	4.88***
Emotional product attachment	0	.81	6.20***	0	.53	4.01***
Attitudes toward a mass-customization program	0	.72	5.62***	0	.94	4.07***
Loyalty intentions	0	1.00	6.01***	0	.94	5.74***

that high fashion innovators perceived higher extrinsic benefit ($M = .58$) and intrinsic benefit ($M = .68$) for a mass-customized product. They experienced greater emotional product attachment ($M = .53$), more positive attitude toward a mass-customization program ($M = .51$), and greater behavioral intentions ($M = .94$) than low fashion innovators (see Table 4). Therefore, H7 was supported.

5. Discussion

Findings of this study provide useful practical and theoretical insights that will help retailers and researchers to understand the effects of perceived benefits on mass customization. Following the HOE model (Lavidge and Steiner, 1961), this study examined how consumers' cognition (perceived benefits) influences their conation (loyalty intentions) via affect (emotional product attachment and attitude). The perceived benefits associated with a customized product can lead to greater emotional attachment to that product, a more positive attitude toward the customization program, and ultimately high loyalty intentions. Consistent with findings of previous research in this area (Kang and Kim, 2012; Lee, 2009; Mugge et al., 2010; Park et al., 2010; Schreier, 2006), consumers who perceive greater extrinsic and intrinsic benefits because the customized products match their preferences feel emotionally attached to the product and have a positive attitude toward the mass customization program. In particular, the present study found an indirect effect of emotional product attachment on loyalty intentions through attitudes toward the customization program, providing evidence for the mediating role of attitudes toward the customization program as a way to enhance customer loyalty. Consumers who perceive extrinsic and intrinsic benefits of a customized product and form an emotional attachment to that product also need to have positive attitudes toward the customization program if the retailer wants to create customer loyalty.

These results suggest that e-retailers should aim to develop a better understanding of their target customers to provide successful mass customization programs that allow

consumers to satisfy their extrinsic and intrinsic motivations for using a mass-customized product. In order to satisfy consumers' expectations regarding the extrinsic benefits, retailers need to create products that closely match consumers' individual preferences by providing a customization program that includes multiple design options. For example, options could range from simply embroidering their initials onto a t-shirt to creating their own unique t-shirt by selecting from a number of different fabrics, colors, designs, logos, lengths, and fit. The level of complexity a retailer offers in the program should be based on their understanding of their target customers. This plays an important role in enhancing the fit between the product and consumer preferences, thus supporting retailers' efforts to increase consumers' perceived benefits and enabling them to establish successful mass customization programs. While satisfying consumers' desire for extrinsic benefits, the availability of various design options can also help consumers achieve intrinsic benefits they are seeking for from the process of design creation. In addition, providing good technological support for the various options offered on the website could increase consumer satisfactions (Endo and Kincade, 2008).

Interestingly, contrary to the findings of previous research (Park et al., 2010), results of this study indicate that emotional product attachment does not directly influence loyalty intentions, but rather indirectly influences loyalty intentions through the development of positive attitudes toward the customization program. This suggests that consumers' emotional product attachment is not sufficient in itself to increase loyalty intentions. Retailers need to encourage consumers to form positive attitudes toward their customization programs. Thus, interactive and entertaining customization programs that satisfy both their hedonic and utilitarian needs may be helpful in forming more positive attitudes toward the program, thus ultimately increasing loyalty intentions.

This study also investigated how perceived benefits, emotional attachment, attitude, and loyalty intentions differed as a function of personal involvement level and fashion innovativeness. The effects found for involvement are consistent with those of prior research and empirically support the ELM model (Petty et al., 1983; Sioukas, 1995). Perceived benefits are operationalized as the degree to which customized products match consumers' expected functional and hedonic attributes associated with high task relevant cues. Compared to study participants in the low involvement group, those in the high involvement group perceived greater benefits and experienced greater emotional attachment to the customized product. They also have more positive attitudes toward the customization program and greater loyalty intentions.

Previous research has examined the effect of product involvement in other contexts (e.g., newspaper customization) (Franke et al., 2009) or investigated the effect of user involvement on mass customization (Sioukas, 1995). Mass customization has also been recognized as an effective strategy for retailers who are seeking to increase consumer involvement (Kamali and Loker, 2002). The unique contribution of this

study is that effects of consumers' product involvement level on their responses are examined in the context of an online apparel mass customization program, thus providing important new information for online apparel retailers who are seeking to improve their offerings. Based on our findings, online retailers need to ensure that their mass customization programs for apparel include diverse functional attributes of a product that meet the needs of their highly involved consumers.

With regard to the effects of fashion innovativeness on consumer responses, this study's findings revealed that highly innovative consumers perceived greater benefits. They had greater emotional attachment and more positive attitudes toward a mass customization program. They also had greater loyalty intentions than less innovative consumers, thus supporting both the commodity theory (Lynn, 1991) and previous research in this area (Damkuviene et al., 2012; Tian et al., 2001; Wang and Cho, 2012). Along with their positive responses to the mass customization process, fashion innovators are not only knowledgeable about products, but also tend to be early adopters and heavy purchasers of fashion products (Birtwistle and Shearer, 2001). Therefore, targeting these consumers is likely to be an effective marketing tactic for online retailers. By adopting a customized product earlier than other consumers, fashion innovators are more likely to become a source of positive word-of-mouth advertising to other consumers. Online retailers also need to provide mass customization programs that enable their highly innovative consumers to create unique and novel products by making a range of different design functions available.

The findings of this study provide theoretical insights that extend the existing literature by supporting Barry's (2002) suggestion on the HOE model. Despite recent studies that examined the HOE model in other contexts (Hutter et al., 2013; Yoo and Kim, 2014; Zablah et al., 2010), empirical evidence is still insufficient compared to that of HOE model in advertising. No research has applied the HOE model in the context of mass customization. The current study contributes to closing such gap in knowledge by considering mass customization as one of IMC sources. Although some researchers and practitioners have questioned the effectiveness of mass customization due to its high costs, production delay, and blurred brand identity (Rebellion Lab, 2013), consumers who perceived benefits in mass customization have greater attachment to the product they produced with more positive attitude toward the program, thus ultimately having higher loyalty intentions.

It is important to note that this study suffers from several limitations. Participants of this study consisted of female consumers in South Korea. Although other demographic characteristics of this group were evenly distributed and this group is very typical of online shoppers, their responses may not be generalizable to all potential online shoppers. In addition, the type of product employed in this study consisted of just a single product category (trench coats). Online retailers now provide mass customization programs for a wide range of different product items, including shirts,

pants/jeans, shoes, sneakers, bags, and accessories. Past research on gender differences in online shopping has also revealed that male consumers exhibit different cognitive, affective, and behavioral responses to online shopping compared to female consumers (Hasan, 2010). Therefore, future research should consider a greater range of mass customized product categories and investigate possible gender differences in consumers' cognitive, affective, and behavioral responses to these diverse product categories in the context of mass customization.

The results of this study revealed an indirect effect of emotional product attachment on loyalty intentions via participants' positive attitudes toward the customization program, suggesting the importance of creating and supporting such positive attitude. Future research should seek to identify specific factors that affect the positive attitude toward customization programs in order to support customer loyalty.

Another limitation of this study is related to the effect of personal involvement level on consumer responses. Since this study measured perceived benefits gained using highly task relevant cues, highly involved consumers might be more likely to perceive greater benefits, experience greater emotional attachment, and have more positive attitudes and greater loyalty intentions. Future research needs to compare consumer responses using both highly task relevant cues and less task relevant cues to examine the true effectiveness of these customization programs.

Declarations

Author contribution statement

Minjung Park: Conceived and designed the experiments; Analyzed and interpreted the data; Wrote the paper.

Jungmin Yoo: Conceived and designed the experiments; Performed the experiments; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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Additional information

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