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The effects of e-mass customization on consumer perceived value, satisfaction, and loyalty toward luxury brands

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ABSTRACT

As mass customization programs are becoming ever more common among luxury brands, this study seeks to identify the dimensions of consumers' perceived value gained and to examine the relationships between consumer value and satisfaction and between satisfaction and loyalty in an online context. Three hundred and three female online shoppers in South Korea participated in a web-based survey. The findings revealed that hedonic, utilitarian, creative achievement, and social value influenced satisfaction with the customization, which in turn influenced brand loyalty. The relationships between consumer value and satisfaction differed depending on the consumer's past loyalty and need for uniqueness. These results have practical implications for developing effective customization programs for luxury brands in the online retail industry.

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1. Introduction

The luxury market continues to grow despite the worldwide economic downturn, with an expected growth rate of more than 35% over the next five years (Bain & Company, 2014). Although luxury brands have been slow to adopt an e-commerce platform because of the problem of becoming too accessible and the need to maintain their exclusive brand image (Bjørn-Andersen & Hansen, 2011), many luxury brands have now taken the plunge and online sales of luxury products had risen to about 5% of total sales by 2013 (Deloitte, 2014). The compound annual growth rate of online sales of luxury goods between 2008 and 2013 was 23% and this is expected to increase by as much as 114% between 2015 and 2020 (Verdict, 2014).

Given the popularity of luxury brands, Luxury Society (2014) reports that five key trends are shaping the luxury industry, one of which is mass customization. Mass customization refers to the strategy whereby retailers provide individually tailored products or services to their customers, an approach that is becoming increasingly popular with online retailers (Fiore, Lee, & Kunz, 2004). The personalization of the product and the interaction with the customer make mass customization a one-to-one or relationship marketing tactic, benefiting both retailers and customers (Wind & Rangaswamy, 2000). Applying the latest Internet technology has not only made it both more economic and simpler for

customers to purchase individualized products, but also allows retailers to add variations to designs and flexibility to production without increasing cost (Randall, Terwiesch, & Ulrich, 2005; The Wall Street Journal, 2015). According to Business of Fashion (2015), avoiding excess inventory and the subsequent price cutting sales represents a major advantage of mass customization for retailers because the production system only becomes involved after consumers have paid for the customized product. This advantage is especially true for fashion businesses, where consumer demand is hard to predict.

Luxury brands originate from customization, focusing on personalized relationships with customers, and the Internet facilitates returning to such intimate relationships with customers (Bjørn-Andersen & Hansen, 2011). Luxury brands such as Bottega Venetta, Louis Vuitton, and Salvatore Ferragamo now offer customization programs that go all the way from simply adding personal initials and colors to helping customers to create an entirely new product. Although there was some concern about introducing customization programs for luxury brands, for example by diluting the brand identity or being unable to satisfy customers (Rebellion Lab, 2013), given that consumers want to experience engaging, entertaining, and interactive shopping on the Internet (Bjørn-Andersen & Hansen, 2011), mass customization could be a key strategy for luxury brands seeking to build personalized relationships with their customers and provide an interactive online shopping experience without suffering from negative impacts on their brand image.

Surprisingly, although interest in e-mass customization in luxury brands has grown considerably in recent years (Rebellion Lab, 2013), little attention has been paid to analyzing the consumer value of mass

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customization in the context of luxury retailing. The current study contributes to closing this gap by identifying the dimensionality of consumer value derived from the luxury mass customization. Consumer value refers to a consequence of consumers' perceived benefits (Lai, 1995) and is a fundamental concept in marketing theory for understanding consumer behavior. However, researchers propose that consumer value is multi-dimensional and complex, thus emphasizing the need to conceptualize its nature and dimensions by adopting a different approach (Gallarza, Gil Saura, & Holbrook, 2011; Zeithaml, 1988). In light of this perspective, the current study adopts the "Consumer-Perceived Value Tool" (CPVT) that Merle, Chandon, Roux, and Alizon (2010) propose. The CPVT measures five benefits of mass customization, namely hedonic, utilitarian, uniqueness, self-expressive, and creative achievement value. Prior research shows that consumer value positively influences satisfaction (Cronin, Brady, & Hult, 2000), which in turn enhances brand loyalty (Zeithaml, Berry, & Parasuraman, 1996). Therefore, this study further seeks to identify the relationships between consumer value and satisfaction and between satisfaction and brand loyalty in the context of luxury mass customization. Lastly, this study seeks to explore how consumers' past loyalty toward a luxury brand and need for uniqueness moderates the effects of perceived value on satisfaction.

The findings of this study are expected to contribute to the body of literature that focuses specifically on online luxury retailing. Despite the relatively small number of companies in the luxury industry, the impact of luxury brands in terms of sales, quality and brand identity is immense, and luxury brands are frequently leaders in the marketing world (Ko & Megehee, 2012). In this context, research on customization in luxury brands is needed, and this study's findings will provide useful information for luxury retailers seeking to build effective marketing strategies by identifying consumer values and individual differences and, ultimately, contributing to building brand loyalty.

2. Conceptual development

2.1. Consumer's perceived value

Consumer value can differentiate between perceived costs and perceived quality (Day, 1990). However, scholars propose the concept is polysemic (Zeithaml, 1988), ambiguous (Boksberger & Melsen, 2011), complex, and subjective (Woodruff & Gardial, 1996), instead defining consumer value as a complex construct that includes price, benefits, quality, and sacrifice (Holbrook, 1994). Definitions of consumer value proposed in the literature include a "trade-off between multiple benefits and sacrifices" (Walter, Ritter, & Gemünden, 2001, p. 366), "perceived benefits/perceived price" (Liljander & Strandvik, 1993, p. 14), a "positive function of what is received and a negative function of what is sacrificed" (Oliver, 1999a, p. 45), and a "function of the extent to which the product contributes to the customer's utility or pleasure" (Afuah, 2002, p. 172). This complexity is explained by Holbrook's (1999) relativistic view that consumer value is comparative, personal, and situational; consumers may experience a different value based on their preference for a particular product over another (comparative), and this experience is personal and situationally dependent.

According to Gallarza et al. (2011), most of the research into consumer value in the earlier literature focuses on the relationship between price and quality. However, recent research (Holbrook, 1999; Lloyd & Luk, 2010) emphasizes other constructs such as benefits that take into account the cognitive and affective nature of value, indicating the need for a more flexible and dynamic understanding of consumer value (Gallarza et al., 2011).

By linking the mass customization of luxury products to consumer value, the current study builds on Vershofen's (1959) benefit theory, explaining that a product conveys basic and additional benefits to consumers. Basic benefit is related to the functional/utilitarian benefit of a product, whereas additional benefit is related to benefits that are not directly related to the product function, such as the social and

psychological benefits gained after or while using a product (Valtin, 2005). According to Lai (1995), consumers perceive value when a product's basic and additional benefits are congruent with how they perceive and use the product. In other words, perceived value is a result of consumers' perceived benefits.

2.2. Consumer value of mass customization of luxury brands

Successful customization programs deliver positive benefits to consumers (Franke, Keinz, & Steger, 2009). According to Schreier (2006), consumers perceive four benefits from mass customization; functional benefit, perceived uniqueness, the process benefit of self-design, and pride of authorship. In more recent research, Merle et al. (2010) proposed the Consumer-Perceived Value Tool (CPVT), which measures five benefits of mass customization from a consumer's viewpoint that are divided into two categories: mass-customized product value and co-design process value. Mass-customized product value includes its utility, uniqueness, and self-expressiveness, while the co-design process value includes hedonic and creative achievement. Mass-customized product values focus on a consumer's perceived benefits while engaging in the customization process. Utilitarian value refers to whether a mass-customized product fits a consumer's aesthetic and functional preferences (Schreier, 2006). While satisfying individual's preferences, consumers can also express uniqueness attributes from a mass-customized product (Snyder, 1992), and the uniqueness value of mass customization is widely recognized (Fiore et al., 2004). Self-expressiveness value pertains to self-congruity theory (Sirgy, 1982), where consumers create a product similar to their self-image using a mass customization program. Regarding the codesign process values, hedonic value refers to consumers' enjoyment experienced during the customization process, and creative achievement value is associated with their feeling of pride in creating and personalizing their own product (Merle et al., 2010). In the current study, the CPVT proposed by Merle et al. (2010) is adopted to investigate the dimensions of consumer value in the mass customization process since the CPVT is more comprehensive than Schreier's (2006) typology and has been developed to measure value dimensions from a consumer's perspective rather than an operational management perspective.

In the context of luxury brand consumption, luxury products provide additional benefits to consumers compared to non-luxury products (Vigneron & Johnson, 2004). Past research has identified financial, functional, individual, and social value (Wiedmann, Hennings, & Siebels, 2009); brand, physical, economic, expressive/social, emotional, and service value (Kim, Kim, & Lee, 2010); and conspicuousness, uniqueness, social, quality, and hedonic value (Vigneron & Johnson, 2004). According to Vigneron and Johnson (2004), luxury refers to something that provides more than functional/utilitarian benefits because of the signal value inherent in a luxury brand. Also, consumers' motivation for purchasing luxury products includes the desire to impress others, to build a favorable social image (Vigneron & Johnson, 2004), to convey symbolic identity (Nia & Zaichkowsky, 2000), and to display their social status (Truong & McColl, 2011). Thus, the current study specifically focuses on the social value of a luxury brand. Social value pertains to social classification or distinction from others, and consumers purchase a luxury product to gain the extended-self of the perceived luxury brand (Kim et al., 2010; Vigneron & Johnson, 2004). Incorporating the consumer value of mass customization into luxury brands, this research examined five values (utilitarian, uniqueness, self-expressive, hedonic, and creative achievement) plus social value.

2.3. Consumer value and satisfaction

Consumer value is a central concept in marketing because of the significant relationships between value and other consumer responses such as satisfaction and loyalty (Gallarza et al., 2011). Prior research shows that consumer value and satisfaction are related but clearly distinguishes between these two constructs: value depends on the relationship

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between a consumer, a product, and the consumer's goal in a specific situation, while satisfaction is associated with the consumer response to a retailer's offering and the difference between a product's actual and expected performances (Woodruff & Gardial, 1996). Satisfaction comes from consumers' judgments made based on their experiences with a product (Liu & Wu, 2007), as well as the affective responses derived from the perceived value (Woodruff, 1997). Furthermore, consumers perceive value at the purchase or pre-purchase stage, whereas satisfaction occurs after purchasing or using the product (Eggert & Ulaga, 2002).

The relationship between consumer value and satisfaction can be explained by the behavioral model (Fishbein & Ajzen, 1975) that links belief (cognition)-attitude (affect)-intention (conation). Theoretically, consumer value is categorized as cognition and satisfaction represents affect (Oliver, 1999b; Woodruff, 1997). Consistent with these arguments, empirical research has shown that perceived value is a significant predictor of customer satisfaction (Cronin et al., 2000; Winters & Ha, 2012; Yang & Peterson, 2004).

Therefore, this study proposes that consumer value positively influences satisfaction.

H1. Perceived value of a mass-customized product of a luxury brand has a positive impact on satisfaction with the customized product.

2.4. Satisfaction and brand loyalty

Customer loyalty is an important construct for brands in marketing research. According to Oliver's (1999b) four stages of loyalty, (1) consumers have positive attitudes toward the information provided by a brand, (2) like the brand, (3) have behavioral intentions toward the brand, and finally (4) convert these intentions to actual behaviors. Customer loyalty benefits not only the brands, but also consumers as it reduces the time they spend searching for product information and evaluating products from competitor brands (Yang & Peterson, 2004). Also, consumers find it easy to choose an alternative channel offered by a retailer, such as online, when they are loyal to that brand (Dholakia, Zhao, & Dholakia, 2005), making customer loyalty an important indicator of e-commerce success (Reichheld & Schefter, 2000).

The behavioral model (Fishbein & Ajzen, 1975) provides useful insights understanding the positive relationships between satisfaction (affect) and loyalty (conation) (Oliver, 1999b), and a number of empirical studies support this relationship. For example, the literature on service quality points out that satisfied consumers are more likely to use the service and to have higher loyalty than unsatisfied consumers (Thaichon & Quach, 2015; Zeithaml et al., 1996). In an online retailing context, Yoo and Park (2014) find that satisfaction significantly influenced loyalty intentions. Also, Teng's (2010) findings reveal that consumer satisfaction with customized services positively influenced loyalty intention.

Thus, the study proposes and tests the hypothesis that a positive relationship exists between satisfaction and loyalty.

H2. Satisfaction with the customized product has a positive impact on brand loyalty.

2.5. Past loyalty and the need for uniqueness (NFU)

This study proposes two factors as moderators: (a) past loyalty and (b) the need for uniqueness. According to Kivetz (2003), loyal consumers expect greater benefits from a retailer than regular consumers. Reczek, Haws, and Summers (2014) also report that loyal consumers respond to a company's promotions differently, being more likely to consider the benefits natural than nonloyal consumers. Polo Peña, Frías Jamilena, and Rodríguez Molina (2013) investigate the relationship between perceived value and satisfaction, and their findings show that consumers' past experience (i.e., first-time consumer vs. repeat consumer) moderates the

effect of perceived value on satisfaction in a tourism setting. For repeat consumers, affective value is more important than functional value, whereas functional value is more important than affective value for the first-time consumers in influencing their satisfaction.

Applying these findings to the current study, the study proposes and tests hypothesis that the values derived from a mass customized product in a luxury brand may influence satisfaction differently for loyal and nonloyal consumers.

H3. The influence of the perceived value of mass customization on satisfaction differs as a function of a consumer's past loyalty.

The second individual difference examined is the need for uniqueness (NFU), which refers to an individual's tendency to differentiate him or herself from others (Snyder & Fromkin, 1977). Individuals attempt to distinguish themselves from others while conforming to social norms (Zhan & He, 2012), but the concept of NFU is distinct from this willingness to be individuated because it reflects an individual's motivation to use visual displays to achieve this differentiation (Snyder, 1992). NFU encompasses the process of improving one's self-image and social image; self-image enhancement can be achieved when an individual presents his/her symbolic meaning using a product (Di Benedetto, 2012; Tian, Bearden, & Hunter, 2001).

Due to the exclusivity of luxury brands, merely possessing luxury products indicates uniqueness. Zhan and He (2012) suggest that consumers with higher NFU tend to prefer luxury brands to non-luxury brands. Also, consumers with high NFU have a more positive attitude toward a product with a premium price than consumers with low NFU (Amaldoss & Jain, 2005; Woodside, 2012).

However, the characteristics of luxury brands, that are both wellknown and popular, and bandwagon consumption may also have a negative effect on NFU (Kastanakis & Balabanis, 2012; TIME Magazine, 2007). Bandwagon consumption refers to consumers' tendency to conform with others through consuming high demand products (Kastanakis & Balabanis, 2012), which is contrary to NFU. Tian et al.'s (2001) conceptualization of uniqueness consists of three dimensions: creative choice counterconformity, unpopular choice counterconformity, and avoidance of similarity. Therefore, marketers of well-known luxury brands need to consider how to attain product differentiation within the brand for consumers who desire uniqueness, so customization may thus be a useful strategy (Zhan & He, 2012). When consumers desire uniqueness while purchasing luxury brands, mass customization may fulfill this need by allowing them to create a unique design or add their initials to the product. Empirical research on mass customization shows that NFU plays a role in influencing attitudes toward a customized product and subjective norms (Kang & Kim, 2012).

Consequently, the study proposes and tests the hypothesis that consumer responses to customized luxury products may be different depending on an individual's NFU.

H4. The influence of the perceived value of mass customization on satisfaction differs as a function of a customer's NFU.

3. Method

3.1. Participants and procedure

This study employed an online survey in Korea. The luxury market in Korea is continuously growing, and Korean consumers have shown high preferences for luxury products (McKinsey & Company, 2011). Also, Korean luxury shoppers tend to look for products that enhance their personal identities and uniqueness, preferring brands with a strong reputation (Euromonitor International, 2015). Thus, Korean consumers were deemed suitable for this study.

An online survey company recruited potential participants who had experience in online shopping. Potential participants received an invitation letter that explained the purpose of the study, survey directions, a URL link to 'Burberry Bespoke', and a questionnaire. To enhance the external validity, this study used an existing online website with a mass customization program, 'Burberry.com', which is a representative luxury brand and has a well-constructed customization program ('Burberry Bespoke'). After visiting Burberry's customization program, participants created their own product using the program and asked to imagine that they had actually purchased it. They could select styles, fabrics, buttons, and studs when ordering the customized trench coat. Finally, they completed the questionnaire.

3.2. Instrument development

The current study consists of measurements adopted from the existing literature, with adequate reliabilities (Cronbach's α s \geq .87). Perceived value was measured by 29 items covering six factors: hedonic value, utilitarian value, self-expressiveness value, social value, uniqueness value, and creative achievement value (Kim et al., 2010; Merle et al., 2010). Satisfaction was measured with four items adapted from Srinivasan, Anderson, and Ponnavolu (2002) and revised for the current study; past loyalty was measured with four items (Boo, Busser, & Baloglu, 2009); future loyalty with three items (Kwon & Lennon, 2009); and NFU with 12 items (Tian et al., 2001). All the items were measured on a 7-point Likert-type scale with anchors of 1 = "strongly disagree" and 7 = "strongly agree".

4. Results

4.1. Participant characteristics and grouping check

A total of 303 female consumers participated in the survey. The average age of the participants was 39 years old, with the ages being evenly distributed among 20–29 (22.8%), 30–39 (28.7%), 40–49 (25.7%), and 50–59 (22.8%). The majority of the participants (58.7%) had 'graduated college', followed by 'high school and above' (24.4%) and 'attending or graduated from graduate school' (16.8%).

In order to test the moderating effects of past loyalty and NFU, a median-split was used to divide the participants into high and low past loyalty groups ($Med_{past loyalty} = 3.50$) and high and low NFU groups ($Med_{NFU} = 3.92$). Cronbach's alphas for past loyalty and NFU were .88 and .93, respectively. There was a significant difference in the past loyalty mean scores between the high past loyalty group (N = 150) (M = 4.91, SD = .71) and the low past loyalty group (N = 153) (M = 2.55, SD = .64) (t = -30.31, df = 301, p < .001). There was also a significant difference in the NFU mean scores between the high NFU group (N = 164) (M = 4.70, SD = .72) and the low NFU group (N = 139) (M = 3.09, SD = .72) (t = -19.42, df = 301, p < .001).

4.2. Confirmatory factor analyses and metric invariance tests

The exploratory factor analysis (EFA) conducted to test the dimensionality of perceived value revealed five factors: hedonic, utilitarian, self-expressive, social, and creative achievement value. A confirmatory factor analysis (CFA) was used to assess convergent validity and two items from hedonic value, two items from self-expressive value, and one item from utilitarian value were deleted because of their low factor loadings or low squared multiple correlation values compared to other indicators from the same factor (Bagozzi & Yi, 1988). The overall fit of the measurement model was deemed satisfactory: $\chi^2(371) = 764.99$, p < .001, TLI = .96, CFI = .96, RMSEA = .06. Significant t-values of factor loadings revealed convergent validity (see Table A.1). The measurement model thus contained 7 latent variables and 30 manifest variables with which to conduct the structural equation modeling analysis for H1 and H2.

Since this study focused on comparing paths from consumer value to satisfaction across groups, the equality of factor loadings between the high and low loyalty groups (H3) and between the high and low NFU groups (H4) was measured. Two multi-group CFAs were performed for H3 and H4. The chi-square differences between the full metric invariance model and the non-restricted model were significant for the comparisons of both the loyalty groups [$\chi^2_d(30) = 44.13$, p < .05] and the NFU groups $[\chi^2_d(30) = 52.10, p < .01]$, implying that the full metric invariance models were rejected (see Table 1). Therefore, based on Steenkamp and Baumgartner's (1998) and Vandenberg and Lance's (2000) approach, the invariance constraints were added one at a time. Finally, for the loyalty group comparison, a partial metric invariance model with three nonrestricted measures was supported. The chi-square difference between the non-restricted model and the partial metric invariance model was not statistically significant [$\chi^2_d(27) = 39.35$, p > .05]. The partial metric invariance model, which contained three variance items (the measures of H1 for hedonic value and SO3, SO4 for social value) and 27 invariance items, was utilized in the subsequent analysis for testing H3. Correlations among 7 latent variables were calculated and were less than .90. Extremely high correlations were not found, confirming no evidence of common method bias. All AVEs were greater than squared correlation coefficients, achieving discriminant validity (see Table 2).

For the NFU group comparison, a partial metric invariance model with three non-restricted measures was supported. The chi-square difference between the non-restricted model and the partial metric invariance model was not statistically significant [$\chi^2_d(24) = 29.68, p > .05$]. The partial metric invariance model, which contained six variance items (the measures H for hedonic value, U4 for utilitarian value, SO1 and SO3 for social value, C1 for creative achievement value, and L1 for brand loyalty) and 24 invariance items, was utilized in the subsequent analysis for testing H4 (see Table 1). The reliabilities of all the measurements, as well as the measurements for each group, were greater than .80, indicating the adequate internal consistency of the scales (see Table A.1).

4.3. Hypothesis testing

Single group structural equation modeling was used to test H1 and H2 in order to assess the effects of consumer value on satisfaction and satisfaction on brand loyalty. The overall fit indices showed an acceptable fit to the data: $\chi^2(376) = 778.83$, p < .001, TLI = .96, CFI = .96, RMSEA = .06. The path coefficients revealed the significant positive impacts of hedonic, utilitarian, social, and creative achievement value on satisfaction and satisfaction on brand loyalty (see Fig. 1). However, the self-expressiveness value did not significantly influence satisfaction. Thus, H1 was partially supported and H2 was supported.

H3 examines the moderating effect of past loyalty on the relationship between consumer value and satisfaction (see Fig. 2). The individual path coefficients from consumer value to satisfaction were compared across the high and low loyalty groups. The chi-square difference tests between groups were all statistically significant. As can be seen in Fig. 2, the path from the self-expressiveness value to satisfaction was significantly higher for the high loyalty group than for the low loyalty group, but the path was statistically significant only for the high loyalty group. Interestingly, the paths from hedonic value and social value were higher for the low loyalty group than for the high loyalty group,

Table 1Test for metric invariance.

RIVIOLIT	ILI	CFI	$X^2(df)$	$X^2_{\mathrm{d}}(\mathrm{df})$	p
.05	.94	.95	1287.71(742)		
.05	.94	.95	1331.84(772)	44.13(30)	.046
.05	.94	.95	1327.06(769)	39.35(27)	.059
.05	.93	.94	1356.13(742)		
.05	.94	.94	1408.23(772)	52.10(30)	.007
.05	.94	.94	1385.81(766)	29.68(24)	.200
	.05 .05 .05	.05 .94 .05 .94 .05 .93 .05 .94	.05 .94 .95 .05 .94 .95 .05 .93 .94 .05 .94 .94	.05 .94 .95 .1331.84(772) .05 .94 .95 .1327.06(769) .05 .93 .94 .1356.13(742) .05 .94 .94 .1408.23(772)	.05 .94 .95 1331.84(772) 44.13(30) .05 .94 .95 1327.06(769) 39.35(27) .05 .93 .94 1356.13(742) .05 .94 .94 1408.23(772) 52.10(30)

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Table 2Correlations and AVEs of latent constructs.

Constructs	Utilitarian value	Hedonic value	Self-expressiveness value	Social value	Creative achievement value	Satisfaction	Loyalty
Utilitarian value	.84/.78						
Hedonic value	.78/.72 ^a .61/.52 ^b	.82/.82					
Self-expressiveness value	.70/.76 ^a .48/.58 ^b	.74/.82 ^a .55/.67 ^b	.73/.70				
Social value	.62/.65 ^a .38/.42 ^b	.69/.79 ^a .48/.62 ^b	.77/.83 ^a .60/.68 ^b	.76/.72			
Creative achievement value	.69/.68 ^a .48/.46 ^b	.81/.81 ^a .65/.66 ^b	.69/.74 ^a .47/.55 ^b	.74/.76 ^a .55/.57 ^b	.80/.75		
Satisfaction	.79/.69 ^a .62/.48 ^b	.76/.82 ^a .57/.68 ^b	.76/.73 ^a .58/.54 ^b	.68/.76 ^a .46/.58 ^b	.73/.77 ^a .53/.60 ^b	.85/.80	
Loyalty	.46/.36 ^a .22/.13 ^b	.42/.51 ^a .18/.26 ^b	.44/.38 ^a .19/.14 ^b	.43/.45 ^a .19/.21 ^b	.48/.56 ^a .23/.31 ^b	.60/.54 ^a .37/.29 ^b	.73/.66

Diagonal values in bold represent the AVE.

and the paths were statistically significant only for the low loyalty group. Although path coefficients from the creative achievement value to satisfaction were high in both groups, these two groups were not significantly different. Also, the effect of utilitarian value on satisfaction was significant for high past loyalty group but not statistically different between these two groups. Thus, H3 was partially supported.

H4 addresses the moderating effect of NFU on the relationship between consumer value and satisfaction. As Fig. 3 shows, the effect of utilitarian value on satisfaction was significantly higher for the high NFU group than the low NFU group, but the path was statistically significant only for the high NFU group. The effect of creative achievement value on satisfaction was higher in the low NFU group than the high NFU group, although this was marginally significant only for the low NFU

group. There was a positive effect of hedonic value on satisfaction for both the high and low NFU groups, but the effects were not significantly different between the two groups. Also, social value significantly influences satisfaction in the low NFU group, but the effects were not statistically different between two groups. Thus, H4 was also partially supported.

5. Discussion and conclusions

The main purpose of mass customization is to provide greater value to consumers (Schreier, 2006). The current study uses Merle et al.'s (2010) typology of consumer value, along with social value, to examine the determinants of satisfaction for the mass customization of a luxury product. The findings suggest that consumer satisfaction is positively

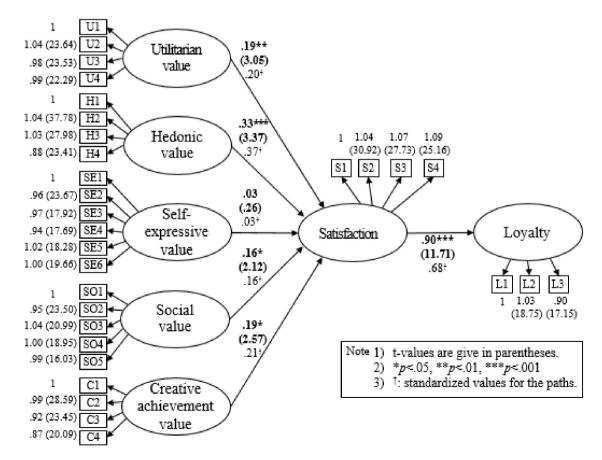


Fig. 1. Findings for H1 and H2 (n = 303).

^a Correlations of high/low loyalty groups.

^b Squared correlations of high/low loyalty groups.

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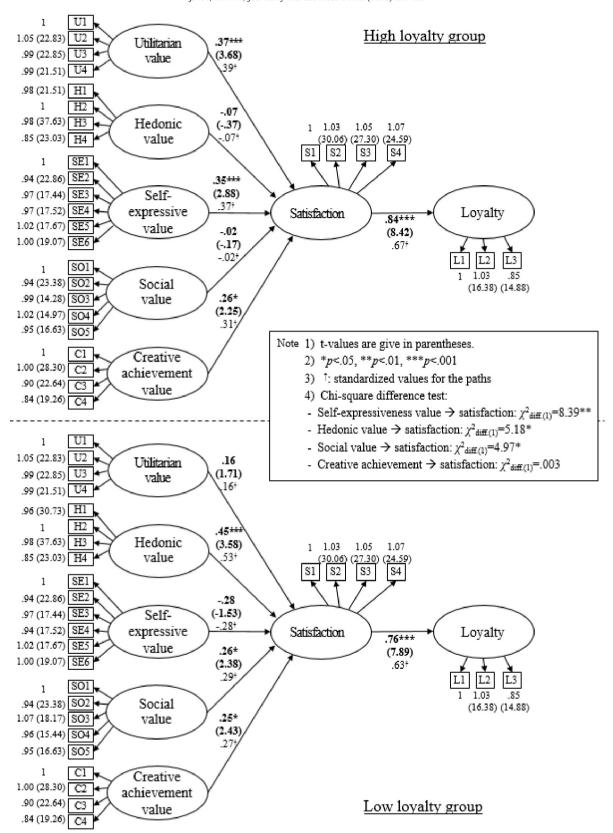


Fig. 2. Results of H3: high and low loyalty groups (n = 150 vs. 153).

influenced by hedonic, utilitarian, creative achievement, and social value. Consumers who perceive hedonic, utilitarian, creative achievement, and social value are satisfied with the customized product of the luxury brand.

However, the self-expressive value is not a significant predictor of satisfaction. Although prior research findings indicate that self-expressive value is one of the key dimensions of consumer value for mass customization (Merle et al., 2010), when the customization is integrated with

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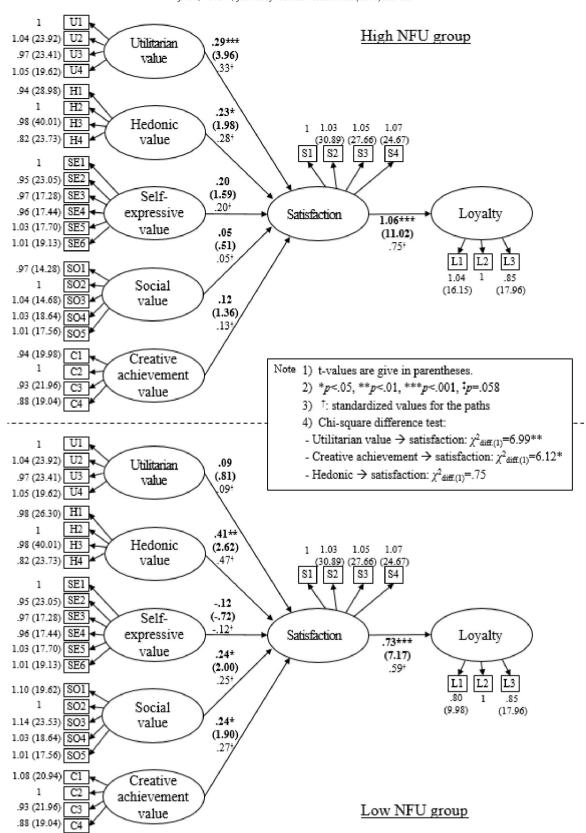


Fig. 3. Results of H4: high and low NFU groups (n = 164 vs. 139).

luxury brands, the level of congruity between the customized productimage and the customer's self-image may not be a significant factor enhancing satisfaction. Consumers may engage in the customization of a luxury product to enjoy the customization process itself (i.e., hedonic value) and to create something new (i.e., creative achievement value) while attaining their aesthetic and functional preferences for the product (i.e., utilitarian value), rather than specifically seeking to create a product that is consistent with their self-image. Considering the fact that luxury

products are socially visible and associated with conspicuous consumption (Nelissen & Meijers, 2011), the social value perceived in the luxury customization also increases satisfaction, indicating that applying customization to the luxury brands does not markedly change consumers' desire to perceive social value through the luxury brands.

The findings of this study provide intriguing insights into how consumers' past brand loyalty moderates the relationship between consumer value and satisfaction. Self-expressive value is a significant predictor of satisfaction for consumers with high past loyalty. According to Sirgy (1982), congruity between self-image and product-image influences purchase motivation. Self-congruity also influences brand preference, brand choice, and brand loyalty, so for consumers who were originally loyal to a brand, congruity between self-image and the customized product may be an important factor influencing satisfaction. Interestingly, however, hedonic value and social value influence satisfaction for consumers with low past loyalty. This result can be explained by Iwasaki and Havitz's (1998) study and the Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1986). According to the ELM, consumers with low involvement tend to be attracted by peripheral cues that are not directly related to the product itself. Based on Iwasaki and Havitz's (1998) argument that loyalty influences involvement, consumers with low past loyalty may have a low involvement level, and can thus be influenced by peripheral cues such as the hedonic and social benefits of a customized product.

With regard to the moderating role of NFU, our findings demonstrate that utilitarian value is a determinant of satisfaction for consumers with high NFU. For consumers in the high NFU group, a product's aesthetic and functional fit was important for their satisfaction with the customized product, while self-expressive, social, and creative achievement values were not. According to Snyder (1992), consumers high in NFU seek to differentiate themselves from others by acquiring unique products. Although the definition of utilitarian value does not articulate the uniqueness of a product, the definition that it is aesthetic and a functional fit may encompass a consumer's desire for uniqueness. In other words, consumers high in NFU are satisfied when the customized product is consistent with their aesthetic and functional standards (i.e., uniqueness). On the other hand, creative achievement value plays a role in influencing satisfaction for consumers with low NFU. Although the effect of hedonic value on satisfaction was not significantly different between the high and low NFU groups, hedonic value significantly increased satisfaction in both groups, implying that regardless of an individual's level of NFU, consumers' enjoyment when using the program is important.

This study provides theoretical insights that extend the existing literature by supporting Fishbein and Ajzen's (1975) behavioral model. The findings of this study emphasize the importance of consumer values of mass customization by applying the CPVT proposed by Merle et al. (2010) to luxury brands to explore the relationship with satisfaction. The impact of social value on satisfaction can be extended to the customization process as well as to luxury retailing, providing evidence that consumers customize a luxury product to express their extended-self (Kim et al., 2010), to be conspicuous, and to impress others (Vigneron & Johnson, 2004). This study also sheds new light on the role of past loyalty and the need for uniqueness in the context of luxury mass customization, with the results supporting the self-congruity theory (Sirgy, 1982) for consumers with high past loyalty. The results also show that the ELM model can be extended for consumers with low past loyalty (Petty & Cacioppo, 1986). Although some researchers have discussed the disadvantages of mass customization, such as increased costs, delayed delivery, and weakened brand identity (Rebellion Lab, 2013; Selladurai, 2004), consumers continue to perceive value in luxury mass customization, ultimately contributing to satisfaction and loyalty.

The current study also has managerial implications for luxury brands offering mass customization programs. According to Franke and Schreier (2010), mass customization programs should

emphasize the design process to increase hedonic value and consumers' perceived effort of creation. Additionally, Schlosser (2003) noted that visual cues that consumers manipulate influence hedonic value. Thus, in order to enhance consumer value and thus ultimately their satisfaction, online luxury retailers need to be aware of the importance of the hedonic process of customization. Specifically, luxury retailers should provide more choice options for the customization. For example, the Land's End e-mass customization program offers many steps to customize a pair of pants, allowing customers to select the length, waist size, color, and other detailed style options. Luxury brands, however, tend to provide relatively simple programs, allowing customers to simply add their initials or select a different color for the logo. Offering a higher level of customization in these programs may help consumers perceive greater hedonic, creative achievement, and utilitarian values through designing the exact product they are looking for. Similarly, more choice options may also benefits consumers in both high and low NFU groups, enabling consumers with high NFU to perceive utilitarian value, while permitting consumers with low NFU to perceive creative achievement value. Lastly, as a luxury brand, conveying a desirable social image and maintaining product quality are important ways to social and utilitarian benefits.

With regard to the moderating role of past loyalty, self-expressive value plays a key role in increasing perceived value for consumers with high past loyalty. Luxury brands need to understand their target customers' tastes if they are to provide customization programs that are consistent with their self-image and at the same time maintain their desirable brand image. As mentioned earlier, diverse choice options during the customization may enhance hedonic, creative achievement, and utilitarian values, but consumers with high past loyalty may be satisfied with simply engraving their initials on their luxury products because initials can firmly link their self-image with the products. However, luxury brands also need to attract consumers with low loyalty or new consumers by providing an entertaining shopping experience and emphasizing the luxury brand's social image to enhance satisfaction.

5.1. Limitations and recommendations

The current study focused on female consumers in South Korea. While this group comprises a representative portion of luxury brand consumers, they may not represent all shoppers of luxury brands. Therefore, future research needs to include a more diverse group of online shoppers for luxury brands to ensure generalizability.

This study examines the relationship between consumer value and satisfaction for luxury mass customization. However, specific factors influencing mass customization, such as complexity, cost, and delivery time, have not yet been integrated into our model. Future research needs to look at how these factors influence consumers' perception of mass customization. Prior research emphasizes the use of mass customization as a strategy that increases interactivity with customers. When consumers and companies engage in co-design activities, this can lead to a long term relationship (Piller, 2003). Future research therefore also needs to investigate the effects of mass customization in the context of relationship marketing.

Although the context of this study is the mass customization of luxury products, identifying consumer values in other contexts may also provide valuable information for both scholars and practitioners. For example, the results of a survey conducted by Deloitte (2012) revealed that Generation Y consumers are more willing to customize new cars than other groups and the majority want to add technology features during this customization. Therefore, the way consumer value influences satisfaction may differ depending on the type of product and the age of the consumer and need to be explored in future research.

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Appendix A

Table A.1Results from CFA of the measurement model.

	Standardized factor loadings	Factor loadings	t-Values
Utilitarian value			
(U1) This trench coat is exactly what I had hoped for.	.87	1.18	18.97*
(U2) This program (BESPOKE) enables me to have exactly the coat I want to have.	.92	1.22	20.83*
(U3) This coat I created fits my expectations.	.92	1.15	20.76*
(U4) I could create the coat I really wanted to have.	.90	1.16	19.88*
$a_{\text{total}} = .95$; $a_{\text{high loyalty}} = .95$; $a_{\text{low loyalty}} = .94$; $a_{\text{high NFU}} = .95$; $a_{\text{low NFU}} = .94$.50		10.00
Hedonic value			
(H1) I found it fun to customize this coat.	.92	1.23	20.94*
(H2) I really enjoyed creating this coat.	.93	1.28	21.37*
(H3) Customizing this coat was a real pleasure.	.92	1.26	20.94*
(H4) Modifying this coat was enjoyable.	.87	1.08	18.77*
$a_{\text{total}} = .96$; $a_{\text{high loyalty}} = .94$; $a_{\text{low loyalty}} = .96$; $a_{\text{high NFU}} = .95$; $a_{\text{low NFU}} = .96$			
Self-expressive value			
(SE1) With this coat, I will not look like everybody else.	.83	1.16	17.57*
(SE2) Having this coat will enable me to stand out from the others.	.81	1.10	16.80*
(SE3) With this program, I could design a coat that others will not have.	.84	1.12	17.81*
(SE4) With this coat, I have my small element of differentiation compared to others.	.83	1.08	17.54*
(SE5) I could create a coat that is just like me.	.89	1.18	19.62*
(SE6) This coat is my own image.	.88	1.16	19.43*
$a_{\text{total}} = .94$; $a_{\text{high loyalty}} = .94$; $a_{\text{low loyalty}} = .94$; $a_{\text{high NFU}} = .93$; $a_{\text{low NFU}} = .95$	100		10.13
Social value (SO1) Having the cost looks like Lam financially successful	95	1 17	18.21*
(SO1) Having the coat looks like I am financially successful.	.85	1.17	
(SO2) Having the coat looks like I am sophisticated.	.90	1.11	19.72*
(SO3) Having the coat looks like I am of high social class.	.90	1.22	19.92*
(SO4) Having the coat looks like I am respected by others.	.85	1.17	18.12*
(SO5) The brand looks like a good fit on me.	.81	1.16	16.54*
$a_{\text{total}} = .93$; $a_{\text{high loyalty}} = .92$; $a_{\text{low loyalty}} = .94$; $a_{\text{high NFU}} = .91$; $a_{\text{low NFU}} = .94$			
Creative achievement value			
(C1) I am very proud to have designed this coat by myself.	.93	1.26	21.16*
(C2) By personalizing this coat, I had the impression of creating something.	.93	1.25	21.00*
(C3) BURBERRY gave me a lot of autonomy in the creating of this coat, and I really enjoyed it.	.86	1.17	18.70*
(C4) I could give my creativity free rein while designing this coat.	.81	1.10	16.83*
$a_{\text{total}} = .94$; $a_{\text{high loyalty}} = .94$; $a_{\text{low loyalty}} = .93$; $a_{\text{high NFU}} = .93$; $a_{\text{low NFU}} = .94$			
Satisfaction			
(S1) I am satisfied with my decision to customize the product from this website.	.88	1.11	19.35*
(S2) My choice to customize the product from this website was a wise one.	.91	1.16	20.16*
(S3) I feel good regarding my decision to customize the product from this website.	.91	1.19	20.39*
(S4) I am happy that I customized the product from the website.	.94	1.13	21.56*
$a_{\text{total}} = .96$; $a_{\text{high loyalty}} = .96$; $a_{\text{low loyalty}} = .96$; $a_{\text{high NFU}} = .95$; $a_{\text{low NFU}} = .96$.54	1,21	21.50
Loyalty	22	4.45	47.00*
(L1) I would patronize this brand in the future	.83	1.47	17.03*
(L2) I would purchase customized products in the near future	.92	1.53	20.05*
(L3) I would recommend this brand to a friend or relative	.84	1.32	17.38*
$a_{\text{total}} = .90$; $a_{\text{high loyalty}} = .87$; $a_{\text{low loyalty}} = .87$; $a_{\text{high NFU}} = .90$; $a_{\text{low NFU}} = .86$			
Fit statistics			
$X^2 = 764.99^* (df = 371)$			
RMSEA = .06, CFI = .96, TLI = .96			
* n < 001			

^{*} p <.001.

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