# Customers Do Not Always Prefer Personalized Products: The Role of Personalized Options Range in Personalization 

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#### Abstract

Existing research on personalization has verified that customers perceive personalized products more highly than standard alternatives. Although many business practitioners are apparently convinced that providing various assortments or personalizing options is inevitably superior to standardization in securing market share, the empirical result of this paper suggests that personalization is not necessarily the optimal strategy. This research argues that customers prefer standard products over personalized alternatives when the range of personalization is perceived as excessive. That is, customers are more likely to select standard products over personalized alternatives when faced with inordinately complex decision-making.

This study tests four hypotheses: (1) As the range of personalizing options steadily increases beyond a customer-perceived optimal point, attitudes toward personalized products will increasingly assume the form of an inverted $U$ (i.e., inverted bell curve); (2) As the range of personalizing options steadily increases beyond a customer-perceived optimal point, purchase intention for personalized products will increasingly assume the form of an inverted U; (3) Customers will demonstrate a more positive attitude for standard products over personalized products with a higher level of personalizing options beyond a customerperceived optimal point; (4) Customers will demonstrate a higher purchase intention for standard products over personalized products having a higher level of personalizing options beyond a customer-perceived optimal point. Results indicate that, given the condition of overcomplexity, product attitude and purchase intentions regarding personalization will be characterized by an inverted $U$-shape pattern. In addition, the results reveal that customers prefer standard products over personalized alternatives when the range of personalizing options exceeds a customer-perceived optimal point.


Keywords: personalized products, standard products, range of personalizing options, perceived complexity

## INTRODUCTION

Over the past decade, many firms have begun to satisfy the specific requirements of individual customers through the use of new technologies (Simonson 2005). Especially, firms have increasingly adopted a strategy of providing customers with the ability to make their own choices on important product features at a price similar to that of standardized alternatives (Moon, Chadee, and Tikoo 2008). For example, computer manufacturer Dell is well known for its success in meeting the various needs of individual customers by offering an enormous number of computer configurations (Moon et al. 2008). Similarly, the Subway sandwich chain has been successful in satisfying individual customer desires by providing multiple choice options. This personalized approach has been adopted by diverse business sectors such as information technology, automobile, fast food, hospitality, and sunglasses (Moon et al. 2008; Simonson 2005). As Simonson indicates, "It has thus been assumed in recent years that the age-old practice of targeting market segments is dominated and will be replaced by individual marketing. That is, in the future, customers in most markets may expect and will receive offers customized to their individual preferences" (p.42).

The practice of having customers make their own choices regarding important product features can be explained by the concept of personalization. Personalization, involving customization of certain offerings on the basis of customer preferences (Tuzhilin 2009), has been suggested as a revolutionary approach to market segmentation (Bardakci and Whitelock 2003). In fact, personalization is regarded as the ultimate response to market segmentation since this approach treats individual customers as individual segments by satisfying their specific needs (Bardakci and Whitelock 2003).

Previous studies have indicated that personalized products are perceived as being more valuable than standardized products (Bardakci and Whitelock 2004; Franke and Piller 2004; Franke and Schreier 2008; Franke and Schreier 2010; Franke, Schreier, and Kaiser 2010; Goldsmith and Freiden 2004; Schreier 2006). These studies argue that personalization enhances perceived value by increasing perceived product uniqueness, aesthetics and functional fit (Franke and Schreier 2008). Bardakci and Whitelock (2004) examined the extent to which customers were ready for customization and found that a sizable customer segment was ready to accept customized products. Franke and colleagues compared the perceived value of customized versus standard product in terms of willingness to pay and found that personalized products offered greater benefits for customers (Franke and Piller 2004; Franke and Schreier 2008; Franke and Schreier 2010; Franke et al. 2010).

However, although identifying individual customer preferences and providing customized offerings to satisfy those preferences have become the emerging standard business practice in a wide range of markets, empirical research on personalization has not been fully undertaken (Franke and Schreier 2008; Goldsmith and Freiden 2004; Simonson 2005; Vesanen 2007). For one, there may be some customers who prefer standard products over personalized alternatives depending on product features. For example, some customers may want to purchase off-the-shelf versions, whose features have been determined based on mass market preferences, instead of purchasing personalized products (Syam, Krishnamurthy, and Hess 2008). On this issue, Kramer, Spolter-Weisfeld, and Thakkar (2007) suggest that
some customers are not receptive to personalization and put more weight on the collective preferences of their in-group. Furthermore, Goldsmith and Freiden (2004) found that some customers were ready for personalization while others were not, implying that there may be market segments that prefer standard products.

Therefore, we posit that some customers prefer standard products over personalized alternatives depending on product features. Specifically, this research suggests that some customers purchase standard products instead of personalized alternatives in order to avoid complexity derived from selecting options in the process of personalization.

## RESEARCH MODEL AND HYPOTHESES

## Personalization

Personalization, which may resolve the long-standing debate on standardization versus customization, combines customization and standardization in that it offers tailored products to suit individual customer preferences at a cost similar to that of standard products by adopting efficient production systems and mass marketing (Moon et al. 2008). Scholars have defined personalization in slightly different terms. IImhoff, Loftis, and Geiger (2001) define personalization as a firm's competence to segment and manage its customer base at the individual level. On the other hand, Riecken (2000) defines personalization as the building of a direct relationship with each individual customer to establish customer loyalty by identifying and satisfying each customer's needs. Although definitions of personalization are not identical, scholars agree that personalization provides individual customers with tailored offerings based on customer preferences (Tuzhilin 2009). Moon et al. (2008) note that personalization empowers customers to select product features that match their individual preferences and create customized products based on their own needs.

In this paper, we define personalization as customizing or tailoring some features of a product or service based on previous literature (Moon et al. 2007, Tuzhilin 2009)

## Range of Personalizing Options

Many firms have undertaken to meet diverse customer needs by increasing product variety (Gouville and Soman 2005). If firms increase the range of personalizing options, customers can be provided with products closer to their individual set of preferences (Huffman and Kahn 1998). A strategy of offering a wide variety of products to appeal to individual customers has been deemed to be effective in increasing market share (Huffman and Kahn 1998). Diversity of assortment size, product selection, etc. provide customers with several important benefits (Gourville and Soman 2005). Customers can reduce satiation and satisfy curiosity by selecting products among a more diverse assortment. Also, customers are more likely to identify the products they seek to purchase based on their preferences. Thus, retailers increase product selection and manufacturers expand product assortment to meet diverse customer preferences (Gourville and Soman 2005). Ultimately, personalization can
offer thousands of unique configurations by combining various personalizing options (Dellaert and Stremersch 2005), thereby eliciting customer responses similar to those when the product assortment is increased (Dellaert and Dabholkar 2009). That is, increases in personalizing options and product assortment share a commonality in that these two strategies provide consumers with more choice options (Dellaert and Dabholkar 2009)

However, some researchers question the effectiveness of the large assortment strategy and argue that this strategy can lead to negative consumer responses should the heightened complexity cause cognitive overload (Dellaert and Stremersch 2005; Gourville and Soman 2005; Huffman and Kahn 1998). Gourville and Soman (2005) examined when and why 'overchoice' might backfire and found that increasing product assortment could decrease sales and thus market share when product choice required excessive effort. This logic underlying product assortment can be applied to personalization. Although personalization involves a better product outcome as the benefit, the strategy of increasing personalizing options can cause customers to experience confusion due to complexity during the personalization process as it inevitably requires customers to invest a greater amount of cognitive effort when selecting personalizing options (Dellaert and Dabholkar 2009; Dellaert and Stremersch 2005; Valenzuela, Dhar, and Zettelmeyer 2009). Although Huffman and Kahn (1998) do not examine the effect of personalization directly, consumer responses from their research can be inferred. They noted that a wide assortment could overwhelm customers through information overload, resulting in dissatisfaction with chosen alternatives or the decision not to make a choice at all, i.e., no sale. They also argue that an enormous number of potential options may be frustrating and confusing rather than beneficial, and reduction of perceived complexity is required to reduce or eliminate these negative customer responses. On this issue, Dellaert and Stremersch (2005) examined the antecedents of customization utility and found that product utility had a positive impact while complexity had a negative impact on customization utility. Although they found the antecedents of customer utility for different levels of personalization, as they noted in their paper, they did not address the issue of how customers decide between a personalized product and its standard alternative.

Although several studies posit a relationship between product utility and process complexity in personalization (Dellaert and Dabholkar 2009; Dellaert and Stremersch 2005), few empirical studies have examined the impact of cost-benefit trade-offs on ultimate customer decision-making. Customer decision-making on whether to purchase a personalized product or a standard alternative depends on each individual's perception of costs and benefits (Dellaert and Dabholkar 2009). When customers put more weight on product outcome as the benefit, they may prefer personalized products over standard ones. However, when customers put more weight on process complexity as the cost, they may prefer standard products over personalized ones. In this paper, we posit that the range of personalizing options will influence the preference of personalized products and standard products.

The range of personalizing options can be divided into low, medium, and high. Products with a low range of personalizing options do not require much cognitive effort during the personalizing process, thus minimizing decision-making complexity (Dellaert and Dabholkar 2009). However, these products also result in a reduced level of product utility for customers that may ultimately result in negative customer responses (Dellaert and Dabholkar 2009). As the range of personalizing options increases, product utility and decision complexity increase in tandem (Dellaert and Stremersch 2005). If the range of personalizing
options is medium or perceived to be optimal, customers may be willing to purchase personalized products in spite of the increased decision complexity since they put more weight on product utility as benefits than decision complexity as costs (Bardakci and Whitelock 2003). That is, customers are ready to purchase personalized products even if personalization involves a degree of inconvenience for customers (Bardakci and Whitelock 2003).

However, as the range of personalizing options steadily increases beyond the perceived optimum level, customers may begin to feel frustration and confusion caused by information overload and decide not to purchase personalized products, even though doing so may cause them to give up their optimal option (Huffman and Kahn 1998). As Huffman and Kahn (1998) noted, customized sofas with a huge number of options such as 500 styles, 3000 fabrics, and 350 leather types may be more confusing than beneficial. Also, Gourville and Soman (2005) argue that a sharp increase in product assortment can cause negative consumer responses because choosing a particular item among wide product assortment is complicated for consumers and this complex decision process can provoke negative feelings such as frustration. Specifically, the above researchers varied assortment size from low to high in their experiment and examined the consumer choice of target brand. Although they did not aim to reveal an inverted $U$ curve relationship between product assortment size and consumer choice in terms of target brand, experimental results indicate that, as assortment size increases, the probability of target brand choice assumes the form of an inverted U . As Dellaert and Dabholkar (2009) noted, consumer responses or perception of product assortments is consistent with consumer responses toward personalization in that personalization increases the variety of product type and provide consumers with their optimal option. With this logic, we expect that, as the level of personalization increases, consumer response will exhibit an inverted $U$ shape. That is, the optimal level of personalization is expected to generate positive consumer responses, while personalization beyond the optimal level (e.g., hundreds or thousands of product options), Huffman and Kahn (1998) noted in their research, can generate negative consumer responses.

Also, we can compare consumer responses toward standard products and personalized ones. Perfectly standard products are those with zero options. Therefore, consumer responses toward standard products may not be identical to personalized products even when personalized products have just a few options (e.g., 1 option). Previous research suggested that zero has special meaning for consumers (Shampanier, Mazar, and Ariely 2007). Shampanier et al. (2007) revealed that consumer responses change drastically when the price drops from 1 cent to zero compared to when the price drops from 2 cents to 1 cent because zero conveys a special meaning for consumers. Thus, consumer responses toward standard products with zero options may differ from those toward personalized products. Although there has not been much research to compare consumer responses towards standard products and personalized products, some research argues that some consumers prefer inaction or the status quo option over action (Chernev 2004). Also, Syam et al. (2008) noted that some consumers prefer standard products rather than designing a custom product. Although they do not consider the level of personalization, this research implies that some consumer responses toward standard products may be more favorable than personalized products. Thus, this research aims to compare consumer responses toward standard products and highly personalized products.

According to previous research on product assortment, consumers overloaded with information or choice options tend to be frustrated with complexity resulting from a perceived excess of product assortment and forego making a choice to avoid complex decision-making (Huffman and Kahn 1998). This logic can be applied to this research. When consumers are offered a personalized product with "overchoice" options, they may feel frustration and express a negative response toward the highly personalized product. That is, to avoid excessive process complexity, consumers may reject a personalized product and purchase the standard alternative instead. This is consistent with Dellaert and Stremersch (2005), who argue that the extent of personalization can lower the utility of personalization and Syam et al. (2008), who argue that standard products may occasionally be more appealing than personalized alternatives.

To examine the pattern of consumer responses toward personalized products and standard alternatives, this paper adopted product attitude and purchase intention as important consumer responses. According to the theory of reasoned action, an individual's behavioral intention is the motivating factor that reflects behavior (Ajzen 1991; Fishbein 1967). Also, behavioral intention tends to be influenced by attitudes toward the behavior that refers to the degree of favorable or unfavorable evaluation of the behavior (Ajzen 1991; Fishbein 1967). Although behavior intention is also influenced by social pressure, termed subjective norm, most previous research measured attitude and behavioral intention to predict consumer behavior because attitude and purchase intention are closely related (Laroche, Kim, and Zhou 1996). Therefore, based on previous research, this paper posits the following four hypotheses on two variables, attitude toward a product (watch) and intention to purchase the product:

H1 As the range of personalizing options steadily increases beyond a customer-perceived optimal point, attitudes toward personalized products will increasingly assume the form of an inverted U (i.e., bell curve).

H2 As the range of personalizing options steadily increases beyond a customer-perceived optimal point, purchase intention for personalized products will increasingly assume the form of an inverted $U$.

H3 Customers will demonstrate a more positive attitude for standard products over personalized products with a higher level of personalizing options beyond a customer-perceived optimal point.

H4 Customers will demonstrate a higher purchase intention for standard products over personalized products with a higher level of personalizing options beyond a customerperceived optimal point.

## RESEARCH METHODS

## Experimental Design and Subjects

This study was conducted to test Hypotheses 1 to 4 . For this study, 195 undergraduate students in Korea were recruited. The subjects were randomly assigned to one of seven conditions that corresponded to a specified range of personalizing options. The product with no personalizing options represented a standard product, and the remaining six products with personalizing options involved personalization to varying degrees. We manipulated the range of personalizing options from low to high for the six personalized product conditions to examine the relationship between personalization level and customer response.

## Experimental Stimuli

For this study, we selected a product category fulfilling the following conditions. First, personalization for the product should be meaningful for customers. Previous research conducted such experiments using hedonic goods such as T-shirts, scarves, watches, cell phone covers, sunglasses or backpacks (Franke and Piller 2004; Franke and Schreier 2010; Franke et al. 2010; Kramer et al. 2007; Moon et al. 2008; Moreau and Herd 2010; Schreier 2006). Furthermore, Bardakci and Whitelock (2003) observed that customers are not concerned whether a functional product is customized or not. Second, the product chosen should be sufficiently relevant to appeal to the survey's student subjects. Therefore, we considered hedonic products as experimental stimuli and selected fashion watches among the candidates adopted in previous studies.

In the case of personalized products, we adapted an experimental stimulus that had been used in previous studies (Franke and Piller 2004; Schreier 2006). Franke and Piller (2004) adopted a watch that offered a wide variety of personalizing options: options for the strap ( 80 options), case ( 60 options), face ( 150 options), hour/minute hands ( 30 options) and second hand ( 30 options). They conducted the experiment offering these personalization options mentioned above through a website created by Global Customization Ltd., Hong Kong, a spin-off company established by the Advanced Manufacturing Institute of Hong Kong University of Science and Technology (HKUST). Therefore, we regarded the personalizing options adopted by Franke and Piller (2004) as meaningful for consumers although the importance of all options may not be identical. We selected the personalizing options that Franke and Piller (2004) adopted in their experiment and adjusted the number of personalizing options to manipulate the range of personalization.

We generated seven versions of a print advertisement to deliver product image and information. For product image, we used the same visual image of a watch in all versions. For manipulation, we created six versions of the print advertisement showing different personalized products with different levels of personalization and one version showing a standard product (no personalizing options). In the six personalized product conditions, we emphasized that customers could select their desired product options. In the standard product condition, subjects were informed that the product was a composite of the most popular options, as previous research did (Franke and Piller 2004). For every condition, the subjects were informed that the products would be delivered free of charge in three working days. Also, to negate the brand name effect, we did not reveal a brand name for the watch.

## Experimental Procedure and Measures

After subjects were instructed to imagine situations in which they planned to purchase a watch, they looked at an ad involving either one of the six personalized products or the one standard product and answered several questions. We measured product attitude and purchase intention as dependent variables. Product attitude was measured by the responses 'like/dislike,' 'favorable/unfavorable' and 'positive/negative' ( $\alpha=0.93$, Kramer et al. 2007; Moon et al. 2008). Purchase intention was measured by 'likely to purchase/unlikely to purchase' and 'likely to recommend/unlikely to recommend' ( $\alpha=0.86$, Zhang 1996). Perceived complexity as mediator was measured by 'procedure of product choice is complicated,' 'procedure of product choice takes a lot of effort,' and 'procedure of product choice is difficult' ( $\alpha=0.91$, Dellaert and Dabholkar 2009). In addition, we measured product involvement and product knowledge as covariates. Product involvement was measured by the expressions 'important,' 'of concern to me' and 'matters to me' ( $\alpha=0.87$, Zaichkowsky 1985). Product knowledge was measured by 'I have much knowledge about watches.' Product attitude and purchase intention were measured on a 7 -point semantic differential scale, and perceived complexity, product involvement and product knowledge were measured on a 7point Likert scale.

## RESULT

Before examining the four hypotheses, we conducted a trend analysis to identify the relationship between the range of options and perceived complexity for the one standard product and the six personalized products. As expected, perceived complexity increased as the range of personalizing options progressed from zero (standard product) to increasingly higher levels (personalized products). Specifically, the linear relationship between the extent of the personalizing option range and perceived complexity was statistically significant (linear relationship $\mathrm{F}(1,188)=43.48, \mathrm{p}<0.001$; quadratic relationship $\mathrm{F}(1,188)=0.59, \mathrm{p}=0.44$ ).

Examining hypotheses 1 and 2, we conducted two trend analyses-product attitude and purchase intention-for the six personalized products and discovered that attitudinal patterns toward personalized products assumed the form of an inverted U as the number of personalizing options increased (quadratic relationship $\mathrm{F}(1,159)=6.41$, $\mathrm{p}=0.01$; linear relationship $\mathrm{F}(1,159)=0.03, \mathrm{p}=0.85$, see Figure 1, Table 1). Also, the pattern of purchase intention was the same as that for product attitude, i.e., inverted $U$, as personalizing options increased (quadratic relationship $\mathrm{F}(1,159)=4.23, \mathrm{p}=0.04$; linear relationship $\mathrm{F}(1,159)=0.01$, $\mathrm{p}=0.89$, see Figure 2, Table 2). Therefore, Hypotheses 1 and 2 were supported.

Figure 1
Influence of Personalizing Option Range on Product Attitude


Personalization option range

Figure 2

## Influence of Personalizing Option Range on Purchase Intention



Personalization option range

Examining hypotheses 3 and 4, we conducted ANOVA on product attitude and purchase intention, respectively, for the standard product and the personalized product having the widest range of personalizing options. As expected, subjects showed higher product attitude toward the standard product than the personalized product with the highest level of personalizing options ( $\mathrm{M}=3.93$ vs. 3.26, $\mathrm{F}(1,60)=3.14$, $\mathrm{p}=0.08$, see Table 3). Also, subjects showed higher purchase intention for the standard product than the personalized product with the highest level of personalizing options, although this difference was not statistically significant ( $\mathrm{M}=3.27$ vs. $2.70, \mathrm{~F}(1,60)=2.24$, $\mathrm{p}=0.14$, see Table 4 ). Therefore, Hypothesis 3 was supported while Hypothesis 4 was not.

Additionally, we conducted ANOVA on product involvement and product knowledge to rule out the possibility that these covariates would influence the result of this experiment
and concluded that there was no difference in product involvement and knowledge levels among the experimental conditions ( $\mathrm{Fs}<1$ ).

| Table 1 |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| INFLUENCE OF PERSONALIZING OPTION RANGE ON PRODUCT ATTITUDE |  |  |  |  |  |  |  |  |
| Product <br> Type | Standard <br> Product | Personalized Product |  |  |  |  |  |  |
| Mean | 3.93 | 3.53 | 3.80 | 4.11 | 4.06 | 3.84 | 3.26 |  |

Table 2
INFLUENCE OF PERSONALIZING OPTION RANGE ON PURCHASE INTENTION

| Product <br> Type | Standard <br> Product | Personalized Product <br> (Range of Personalizing Options: Low to High) |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mean | 3.26 | 2.88 | 2.79 | 3.35 | 3.55 | 2.90 | 2.70 |  |

Table 3
ANOVA ON PRODUCT ATTITUDE (FOR STANDARD PRODUCT AND PERSONALIZED PRODUCT WITH THE HIGHEST LEVEL OF PERSONALIZING OPTIONS)

| Source | Sum of <br> Squares | d.f | Mean Squares | F-ratio | P-value |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Product Type | 7.011 | 1 | 7.011 | 3.144 | .081 |
| Error | 133.808 | 60 | 2.230 |  |  |


| Table 4 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ANOVA ON PURCHASE INTENTION (FOR STANDARD PRODUCT AND PERSONALIZED |  |  |  |  |  |
| PRODUCT WITH THE HIGHEST LEVEL OF PERSONALIZING OPTIONS) |  |  |  |  |  |
|  | Sum of |  |  |  |  |
| Source | Squares | d.f | Mean Squares | F-ratio | P-value |
| Product Type | 4.917 | 1 | 4.917 | 2.239 | .140 |
| Error | 131.796 | 60 | 2.197 |  |  |

To test the mechanism of complexity as a mediator, we conducted, based on Baron and Kenny (1986), a mediation test with both the standard and personalized product with the highest range of personalizing options. The results were as follows. First, subjects under the personalized product condition exhibited higher perceived complexity than under the standard product condition ( $\beta=0.61, \mathrm{p}<0.001$ ). Second, perceived complexity had a negative impact on product attitude ( $\beta=-0.33, \mathrm{p}=0.008$ ). Third, subjects under the personalized product condition showed a less favorable product attitude than did subjects under the standard product condition ( $\beta=-0.22, p=0.08$ ). Fourth, when complexity was controlled, the effect of complexity on product attitude was significant ( $\beta=-0.31, \mathrm{p}=0.04$ ) while the effect of product type on product attitude was not ( $\beta=-0.03, \mathrm{p}=0.82$ ). As a result, perceived complexity mediated the effect of product type on product attitude. This mediation test suggests that perceived complexity is responsible for the preference of standard products over personalized products when the level of personalization is overwhelmingly high.

## CONCLUSION

Many firms have adopted strategies that provide customers with various assortments or personalization to achieve competitive advantage (Huffman and Kahn 1998). Business practitioners tend to assert that, to secure market share, high variation strategies such as personalization are superior to standardization, presumably on the assumption that personalized products automatically deliver higher benefit for customers than do standard products. Indeed, previous researchers found that personalization or customization could create a higher product outcome based on customer preferences in terms of willingness to pay (Franke and Schreier 2008; Franke and Schreier 2010; Franke and Piller 2004; Franke et al. 2010; Schreier 2006). However, personalization does not always succeed in attracting customers and sometimes even evokes negative responses from customers who perceive complexity in the personalization process. As Huffman and Kahn (1998) noted, customers may be confused or frustrated to see the offer: "choose from 500 styles; choose from 3000 fabrics; choose from 350 types of leather" (p.492). In such cases, customers may choose not to purchase a product even though personalization can create greater benefit or utility for them.

This research argues that, beyond a certain point, personalization can backfire. In the experiment, we verified that the evaluation for a personalized product changed toward an inverted-U as personalizing options increased. This result implies that customers evaluate personalization differently and prefer optimal or medium levels of personalization rather than low or extremely high levels. In addition, we found that customers evaluated the standard product more favorably than the personalized alternatives when the range of personalizing options was overwhelmingly high. That is, customers are more likely to select the standard product rather than the personalized product when they want to avoid overly-complex personalization procedures.

This research revealed major findings and produced significant implications for researchers. Previous research revealed reasons why customers perceive personalized products more highly than standard ones and assumed that personalization is a more effective strategy than standardization. This research argues that, when the decision-making process is complex, standardization could be a more effective strategy, especially for customers seeking to avoid complexity related to the decision making effort required for personalization.

Some limitations and further research directions are worth noting. First, for the experimental stimuli, we selected a watch, which falls under hedonic products, and excluded a utilitarian product since the perceived value of personalization in utilitarian products is seemly trivial compared to hedonic products (Bardakci and Whitelock 2003). Although selecting hedonic products as experimental stimuli seems to be valid, customer decisionmaking for other product categories such as utilitarian or functional products may differ. Therefore, comparing the effect of personalization across different product categories would be worthwhile.

Second, we revealed that not every case of personalization leads to positive responses from customers and extreme personalization may very well lead to negative evaluation due to the complex decision-making process. This paper examined variations in customer responses regarding different levels of personalization. However, individual customers may respond to the range of personalization differently based on their personal characteristics. For example,
customers with a high level of innovation or need for cognition may enjoy products offering an extreme range of personalizing options. Thus, investigating the individual traits that influence the choice between personalization and standardization may also prove fruitful.

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## ENDNOTE

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## APPENDIX <br> Experimental Stimuli: Personalizing Options for Product Types

| Product Types | Personalizing Options |
| :---: | :---: |
| Standard Product | No options |
| Personalized Product (1) | Strap length: From 100 mm to 200 mm Strap width: From 15 mm to 40 mm Case diameter: From 20 mm to 50 mm Case design: 5 options Frame design: 5 options |
| Personalized Product (2) | Strap length: From 100 mm to 200 mm Strap width: From 15 mm to 40 mm Case diameter: From 20 mm to 50 mm Case design (number): 15 options Case design (face): 15 options hour/minute/second hands: 10 options |
| Personalized Product (3) | Strap length: From 100 mm to 200 mm Strap width: From 15 mm to 40 mm Case diameter: From 20 mm to 50 mm Case design (number): 60 options Case design (face): 150 options hour/minute/second hands: 30 options |
| Personalized Product (4) | Strap length: From 100 mm to 280 mm Strap width: From 15 mm to 40 mm Strap material: 30 options of plastics Strap color: 30 options Case diameter: From 20 mm to 50 mm Case design (number): 60 options Case design (face): 150 options hour/minute/second hands design: 30 options hour/minute/second hands color: 10 options |
| Personalized Product (5) | Strap length: From 100 mm to 280 mm Strap width: From 15 mm to 40 mm <br> Strap material: 60 options of plastics <br> Strap color: 60 options <br> Case diameter: From 20 mm to 50 mm <br> Case design (number): 60 options <br> Case design (face): 150 options hour/minute/second hands design: 30 options hour/minute/second hands color: 30 options |
| Personalized Product (6) | Strap length: From 100 mm to 280 mm Strap width: From 15 mm to 40 mm <br> Strap material: 150 options of plastics <br> Strap color: 150 options <br> Case diameter: From 20 mm to 50 mm <br> Case frame color: 150 options <br> Case design (number): 350 options <br> Case design (face): 350 options hour/minute/second hands design: 100 options hour/minute/second hands color: 150 options |

