Psychological and Behavioral Consumer Responses to the Mass Customization of Product Aesthetics

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ABSTRACT

Although there is a growing body of research regarding the mass customization of products’ functional features, we lack a clear understanding of the antecedents and psychological processes underlying consumer responses to the mass customization of product aesthetics. This study investigates the processes and conditions that explain the latter type of customizing products. In this study, members of a consumer panel were presented with different versions of a product aesthetics customization tool. In all instances, the focal product was a cordless telephone; however, the configuration of the customization tool was varied and allowed for different levels of aesthetic customization control (number of visual design options) and public visibility of the customization outcome. Our findings suggest that consumers’ evaluations of aesthetic mass customization are positively related to the amount of customization control offered and negatively related to the perceived complexity of the customization task. Furthermore, the evaluation is more positive when consumers perceive that the personalized product’s ability for self-expression increases; this last construct being positively related to the public visibility of the mass customization outcome and the amount of aesthetic customization control. Finally, we show that as customization evaluations increase, so do behavioral intentions (e.g., purchase intention) toward the personalized product.

Subject area: 1.2: Marketing and Consumer Behavior in MCP
Postmodernity has brought about economic and social conditions, in which consumers are not only involved in the consumption of goods and services, but are also participants to the production or co-creation of these market offerings (Firat & Venkatesh, 1995). This new level of participation and engagement is not limited to the customization of core functional features of products or services. Nowadays, consumers are becoming more involved in the creation and diffusion of the symbolic meanings of the brands and products they use (Ritson & Elliott, 1999). Consumer culture theorists have shown that the symbolic meanings of these products and brands are critical components of the identity projects that are on-going in postmodern consumers’ lives (Arnould & Thompson, 2005). To support consumer identity projects, marketplaces are moving from a mass-orientation to an individualization of offerings. In doing so, it is acknowledged that consumers’ tastes and preferences are often very heterogeneous, leaving many unfulfilled with standard goods or services (Franke & Piller, 2004, Piller & Müller, 2004). A business strategy aimed at addressing this issue is manifest in firms offering consumers increased direct involvement in the design process through mass customization (Pine, 1993). Then, consumers can act as co-designers and can create their own personalized products that match their individual needs, requirements, and taste. As products and services become more customized and thus more unique, they allow consumers to build identities that are markedly separate from others, and at the same time communicate these unique identities through the public display of objects and goods to the rest of their surrounding, social worlds (Tepper Tian et al., 2001). From
a business standpoint, past research concluded that customizing the functionality and/or appearance of a product or service through consumer co-creation/co-production can increase value perceptions and overall satisfaction with the outcome (Bendapudi & Leone, 2003). As such, these strategies can serve as a means to gain a competitive advantage over the company’s competitors.

There is a growing body of research that has investigated the antecedents, processes, and consequences of mass customization. As a whole, these studies have shown that consumers tend to prefer mass-customized products, because these products offer them incremental benefits. For example, products that are partly created by consumers are better in fitting one’s individual needs and taste (Franke & Piller, 2003), are perceived as being more unique (Schreier, 2006), are more self-expressive of a person’s unique identity (Blom & Monk, 2003, Kiesler & Kiesler, 2005), and provide for stronger consumer-product relationships, because people become stronger attached to co-created objects (Mugge et al., 2004). As a result, consumers are willing to pay a premium price for mass-customized products (Franke & Piller, 2004, Piller & Müller, 2004, Schreier, 2006).

Of course, it would be too simplistic to suggest that all consumers always prefer customization, irrespective of the context, or to propose that all products should be customized. Consumer response to product design is a complex process involving moderating conditions, individual differences, and context-specific factors (Bloch, 1995). For instance, significant individual differences exist with respect to the centrality (i.e., importance, skills, responses) of visual product aesthetics across consumers (Bloch et al., 2003). With respect to mass customization, analogous insights have been evidenced. For business-to-business settings, Ghosh, Dutta, and Stremersch (2006) suggested that customization approaches, and more
specifically, the amount of control held by the manufacturer should be based on the level of technology and knowledge that the customer possesses. Moreover, research in business-to-consumer markets concluded that young, well-educated consumers that desire a high optimum stimulation level (OSL) and that are innovative are more interested in mass customization (Bardakci & Whitelock, 2004, Fiore et al., 2004, Fiore et al., 2001, Ulrich et al., 2003). In addition to consumers’ personality traits, other factors related to the mass customization configuration (e.g., the nature of the mass customization interface) or product characteristics may influence consumers’ evaluation of mass customization. Dellaert and Stremersch (2005) showed that, in the context of PC purchasing, different configurations of the customization tool have important consequences for the amount of perceived task complexity and overall product utility. Complexity and product utility differ depending on the varying numbers of modules that can be customized and the heterogeneity of the customization options for each module (e.g., very similar options vs. very different options). We appreciate the results of Dellaert and Stremersch’s research, and we believe that they provide important insights for practice and future research. However, we also recognize that their research looked at only one main aspect of product design: function. The mass customization tools that were investigated allowed consumers to customize their PC along utilitarian dimensions. For example, one could choose between 256 Mb, 512 Mb, 1 Gb, and 2 Gb of internal memory for his/her PC. There is no denying the importance and relevance of this type of customization and choices. However, in the present research, we wish to broaden this scope and consider mass customization configurations that offer consumers the possibility of personalizing the product’s visual appearance (form), rather than just its utilitarian modules. This new level of understanding is important, because many mass customization tools allow consumers to design their own personalized products along aesthetic dimensions. For
example, Nike (http://www.nikid.nike.com) allows consumers to specify the colors for the various shoe parts. Besides sports shoes, we have found many instances where aesthetic customization is offered to consumers; other examples include bags (Timbuk2, http://www.timbuk2.com, Freitag; http://www.freitag.ch), watches (www.factory121.com), or wedding rings (http://www.juwelen.be/desiree/bouwen.asp). Furthermore, because of product aesthetics’ symbolic and affective nature and their importance in consumer identity projects, we believe that different constructs might drive consumers’ reactions to aesthetic customization as compared to customization of functional features. Thus, this paper extends the research of Dellaert and Stremersch (2005) by explaining how consumers react to and evaluate the mass customization of product aesthetics. Specifically, we investigate the effects of the degree of control that is offered to consumers, the visibility to others of the mass customization outcome, and the perceived complexity of the mass customization process. Besides its theoretical contribution, this increased understanding can help companies more successfully implement mass customization in products and services.

**The Effect of Consumers’ Customization Control**

Mass customization configurations differ in the degree of customization control that is offered to individual consumers. Consistent with Ghosh et al. (2006), we use the term “consumers’ customization control” to indicate the extent to which the consumer has control over the design and composition of the personalized product. For example, in some mass customization configurations, consumers may have low control in the customization of the product’s appearance by being offered a limited number of choices (e.g., selecting the product color from four colors), whereas in other situations they might be offered much more control by having a greater number of modules that they can customize (e.g., selecting the color for
different parts of a product) and/or by being able to make selections amongst more options for each module (e.g., 10,000 colors and patterns). An even greater degree of control is provided if consumers can personally create (parts of) their own products (as opposed to just choosing amongst a set of alternatives; Franke & Piller, 2003).

The amount of customization control during the mass customization process is thought to affect the degree to which consumers can create products that effectively fit their individual needs and preferences (Dellaert & Stremersch, 2005, Franke & Piller, 2003, Schreier, 2006). In the case of the customization of product aesthetics, control would impact the degree to which the product can be customized to fit one’s unique taste and desired social identity. This is consistent with previous research, which has shown that consumers may use personalized products to communicate their individuality, and that personalized products are perceived as more self-expressive of one’s identity (Blom & Monk, 2003, Kiesler & Kiesler, 2005, Mugge et al., 2004). If consumers are only offered a relatively low degree of aesthetic customization control, the possibilities to create a product that perfectly fits one’s unique identity are limited, and although better than no customization at all, the impact of such a choice might not provide the consumer with an effective means to reflect his or her identity. Conversely, a higher degree of consumers’ aesthetic customization control allows consumers to create a greater number of possible product appearances, which enhances the product’s ability for self-expression, and thus can maximize each consumer’s ability to create a product that fits their identity. As a result, consumers will evaluate mass customization configurations with a higher degree of consumers’ aesthetic customization control more positively, and as the amount of aesthetic customization control increases, so should the behavioral intentions toward the product under consideration. Also, we
anticipate that the perceived ability for self-expression mediates the effect of consumers’ aesthetic customization control on the evaluation of the mass customization configuration.

Although we expect that there is a linear monotonic relationship between aesthetic customization control and the perceived ability to express one’s identity, we expect that higher degrees of customization control might have a downside as well. As the amount of customization control increases, the complexity associated with the decision task increases, and consequently, the possibility that consumers may become overwhelmed by the number of possibilities at their disposal increases as well (Dellaert & Stremersch, 2005, Huffman & Kahn, 1998, Piller et al., 2003, Zipkin, 2001). Because human capacity to process information is limited, offering more customization options will increase the number of cognitive steps and the effort needed in the customization decision making process (Bettman et al., 1990). This might lead to information overload and to negative affective reactions, such as confusion, regret, or frustration. As consumers get confused by the increased choices, they might feel insecure about their own edibility to select the right alternative amongst that large potential set of options and designs. We anticipate that these negative consequences can be even greater if consumers are offered the possibility to personally create the visual appearance of their product (as opposed to just choosing amongst a set of alternatives). Furthermore, consumers may also become frustrated during the customization process, because they simply lack the skills and knowledge to design their own product in the way they want to. This can be a lack of expertise in a technical domain, such as computer knowledge and expertise (Dellaert & Stremersch, 2005), if one is considering the customization of functional features, or it could be the centrality of visual product aesthetics (Bloch et al., 2003) if we consider aesthetic customization of a product’s visual appearance. Overall, we expect that as aesthetic customization control increases so will consumers’ perceived
complexity for the task, and consistent with past findings on mass customization of functional features (Dellaert & Stremersch, 2005), we expect that this would result in a less favorable evaluation of the mass customization configuration.

The preceding arguments regarding the role of aesthetic customization control can be summarized in the following hypotheses:

H1: The amount of consumers’ aesthetic customization control has:
(a) a positive effect on the personalized product’s ability to express the consumer’s identity and
(b) a positive effect on the perceived complexity of the mass customization process.

H2: The personalized product’s ability to express the consumer’s identity has a positive effect on the evaluation of the mass customization configuration.

H3: The perceived complexity of the mass customization process has a negative effect on the evaluation of the mass customization configuration.

H4: Consumers’ evaluation of the mass customization configuration has a positive effect on consumers’ behavioral intentions toward the personalized product.

The Effect of Public Visibility

As already discussed, consumers use products to maintain and symbolically communicate their identity (Belk, 1988, Solomon, 1983). The intended target for this symbolic role of products can be the consumers themselves; however, the symbolic communication role of products is often aimed at an external audience. Product aesthetics can be a powerful means to communicate one’s identity (actual or desired) to others. This social role of products has long been documented, and it has been shown that people make identity-related inferences about others based on these people’s possessions (Burroughs, 1991, Gosling et al., 2002). Of course, one key moderator in this process is the level of public versus private consumption that is associated with a product (Bearden & Etzel, 1982). Inferences about others are thus mainly driven by the
products that are visible to others and publicly used or displayed. Accordingly, a product’s ability for self-expression is reduced if it is only visible to the owner. With respect to mass customization of product aesthetics, we propose that the benefit of self-expressiveness is enhanced if the outcome of the mass customization process is more publicly visible, either because the product is one that is very visible to others (e.g., a bag) or because the customized elements of the product are clearly visible to others (e.g., exterior of a car versus the interior of it). Therefore, we hypothesize:

H5: Public visibility of the mass customization outcome has a positive effect on the personalized product’s ability to express the consumer’s identity.

All hypotheses are summarized in a conceptual path model (see Figure 1)

Figure 1. Conceptual Model and Hypotheses
METHOD

To test the conceptual model, a study was conducted in which members of a consumer panel were presented with different versions of a mass customization configuration for a cordless telephone. The customization involved different aesthetic variations for the telephone. After considering the customization offered to them, the respondents evaluated both the personalized product and the mass customization process.

Respondents

For the study, 150 respondents were selected from a consumer panel in the Netherlands. Ninety respondents (46 males and 44 females; mean age = 41) returned their questionnaire, a response rate of 59%. Respondents received a small financial compensation for their participation.

Stimuli

To obtain different degrees in consumers’ aesthetic customization control and public visibility, we generated six different conditions for the aesthetic mass customization of a cordless telephone. A cordless telephone was selected as the stimulus product, because it is gender neutral and a product which would typically be visible to visitors in one’s home. Yet, it also offers the possibility for the customization of non-public aspects of the product.

Two conditions were generated to manipulate variations in public visibility. In the first condition, the aesthetic mass customization concerned the cover (i.e., shell) of the cordless telephone, and as such the mass customization outcome will generally be publicly visible. The second condition entailed the mass customization of the telephone’s LCD display (a factory level customization that the customer cannot change at a later date). Because a personalized display
can only be seen during use, the mass customization outcome will mostly be visible only to the owner, and thus be private.

In addition, three conditions of consumers’ aesthetic customization control were generated. In the condition with a low degree of aesthetic customization control, respondents could customize the display (or cover) of the cordless telephone by choosing among four different colors. A medium customization control offered respondents a choice among 99 colors and 24 patterns, resulting in a total of 2376 options. Finally, in the high customization control, respondent were told that they had the opportunity to personally create the motif (as opposed to choosing) for the display or cover of the telephone, and thus this could create an infinite number of choices.

Each condition was explained in text, with swatches for colors and patterns, and with product pictures. The text and layout of each mass customization configuration was kept constant across conditions (except for the manipulated elements). For example, the following text was presented for the mass customization of the cover with medium aesthetic customization control: “The manufacturer offers you the possibility to adapt the cordless telephone’s cover according to your own taste. For adapting the cordless telephone’s cover you can choose a combination of a color and a pattern. You can choose from the set of 99 colors and 24 patterns that are displayed below”. In addition, across all conditions, a small number of examples of the personalized cordless telephone were presented in color photo-quality pictures to provide respondents with visual representations of how the personalized phones may look like based on the choices offered in the condition assigned to the respondent.

Procedure and Measures
Each respondent was sent an email with an invitation to participate in our study. A hyperlink directed respondents to their specific version of the questionnaire. Each respondent was randomly assigned to one of the six conditions. An introduction page explained the mass customization process to the respondents. Next, responses to a series of measures were obtained.

Consumers’ aesthetic customization control was measured using four items on a seven-point Likert scale (1 = “totally disagree”, 7 = “totally agree”). Ability for self-expression was measured using three items adapted from Mugge et al. (2004). Consumers’ evaluation of the mass customization configuration was measured with three semantic differential scales (Alpert & Kamins, 1995). We measured the perceived complexity of the mass customization process by asking respondents to evaluate the customization configuration using a seven-point semantic differential scale “easy”/”complex”. Public visibility was measured using five items on a seven-point Likert scale. Finally, we included three items to measure consumers’ behavioral intentions toward the mass customization of the telephone. All items are presented in Table 1.
Table 1. Measures

| Consumers’ aesthetic customization control | 1. The possibility to adapt the display/cover of the cordless telephone to my own taste is large |
|                                           | 2. I have much influence on the appearance of the display/cover of the cordless telephone* |
|                                           | 3. I am contributing to a high degree in designing the display/cover of the cordless telephone |
|                                           | 4. I have a lot of freedom to adapt the display/cover of the cordless telephone |
| Public visibility                         | 1. Adaptations made on the display/cover of the cordless telephone are clearly visible to others* |
|                                           | 2. The adapted display/cover of the cordless telephone can easily be judged by others |
|                                           | 3. The adapted display/cover of the cordless telephone will strike a lot of people |
|                                           | 4. The adapted display/cover of the cordless telephone will only be seen by the user of the product |
|                                           | 5. The adapted cordless telephone will be noticed quickly by others |
| Ability for self-expression               | 1. The adapted cordless telephone will better correspond to my identity than a general cordless telephone |
|                                           | 2. The adapted cordless telephone will better fit me than a general cordless telephone |
|                                           | 3. The adapted cordless telephone better expresses who I am than a general cordless telephone |
| Perceived complexity                      | I think the possibility to adapt the cordless telephone is: |
|                                           | 1. easy/complex |
| Customization evaluation                  | How would you judge the possibility to adapt the cordless telephone? |
|                                           | 1. dislike/like |
|                                           | 2. unfavorable/favorable |
|                                           | 3. negative/positive |
| Behavioral intentions                     | 1. I would certainly consider the possibility to adapt the cordless telephone |
|                                           | 2. I would certainly buy a cordless telephone with the possibility to adapt it |
|                                           | 3. I would certainly seek more information about the possibility to adapt the cordless telephone |

*R Reverse coded item
* Items eliminated during purification
RESULTS

Unidimensionality, Reliability, and Validity

For each scale the unidimensionality, reliability, convergent validity, and discriminant validity was assessed. The unidimensionality of each scale was explored with principal axis factoring using an eigenvalue of 1.0. All scales passed that test. The reliability of each scale was explored by computing the reliability coefficient. Additionally, the convergent validity of the scales was investigated by performing a series of confirmatory factor analyses (CFA) using ML-estimation in LISREL 8.50 (Jöreskog & Sörbom, 1993), taking one scale at a time (Baumgartner & Homburg, 1996). To obtain satisfactory fit, one item of the consumers’ aesthetic customization control scale and one item of the public visibility scale were deleted (see Table 1). Convergent validity was indicated by the fact that the items loaded significantly on their corresponding latent construct (all t’s > 2.0). Discriminant validity among the scales was assessed in two steps. First, a baseline model (in which the correlations between pairs of constructs were freely estimated) was estimated for each possible pair of scales. Next, we compared each model to an alternative model, in which the correlations between pairs of constructs were constrained to unity (Anderson & Gerbing, 1988). In each case, the constrained model exhibited a statistically increase in chi-square, providing evidence of discriminant validity (Bagozzi & Phillips, 1982). Table 2 presents the means, standard deviations, and an assessment of unidimensionality, reliability, and convergent validity for the measurement models. Table 3 presents the interconstruct correlations. Together, these results indicated a sufficient degree of unidimensionality, reliability, and validity of the scale. Subsequently, we formed the constructs by averaging the responses to all items in a particular scale.
Table 2. Measurement Model Fit and Summary Statistics

<table>
<thead>
<tr>
<th>Construct</th>
<th>Mean</th>
<th>SD</th>
<th>No. items remaining</th>
<th>Cronbach’s α</th>
<th>Eigenvalue</th>
<th>Lowest t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumers’ aesthetic customization control</td>
<td>3.73</td>
<td>1.55</td>
<td>3</td>
<td>.73</td>
<td>1.955</td>
<td>4.60</td>
</tr>
<tr>
<td>Public visibility</td>
<td>3.76</td>
<td>1.48</td>
<td>4</td>
<td>.85</td>
<td>2.806</td>
<td>5.74</td>
</tr>
<tr>
<td>Ability for self-expression</td>
<td>3.11</td>
<td>1.56</td>
<td>3</td>
<td>.92</td>
<td>2.574</td>
<td>5.89</td>
</tr>
<tr>
<td>Perceived complexity</td>
<td>2.94</td>
<td>1.73</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Customization evaluation</td>
<td>4.72</td>
<td>1.34</td>
<td>3</td>
<td>.84</td>
<td>2.268</td>
<td>7.17</td>
</tr>
<tr>
<td>Behavioral intentions</td>
<td>4.15</td>
<td>1.64</td>
<td>3</td>
<td>.88</td>
<td>2.444</td>
<td>7.88</td>
</tr>
</tbody>
</table>

Table 3. Interconstruct Correlations

<table>
<thead>
<tr>
<th>Construct</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumers’ aesthetic customization control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Visibility</td>
<td>.29**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Ability for self-expression</td>
<td>.32**</td>
<td>.31**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Perceived complexity</td>
<td>.04</td>
<td>-.08</td>
<td>-.13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Customization evaluation</td>
<td>.43**</td>
<td>.16</td>
<td>.28**</td>
<td>-.29**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Behavioral intentions</td>
<td>.36**</td>
<td>.23**</td>
<td>.32**</td>
<td>-.23*</td>
<td>.70**</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05, ** p < .01

Test of the Conceptual Framework

In order to test our conceptual framework, we used structural equation modeling (SEM) using LISREL 8.50. The modification indices and the standardized residuals were considered to improve the fit of the model. As a result, a direct effect of consumers’ aesthetic customization...
control on customization evaluation and a direct effect of the ability for self-expression on behavioral intentions were added to the initial model (we did not have hypotheses on these links, but they are nonetheless consistent with our theoretical considerations). The estimated model is presented in Figure 2. The fit statistics for this model indicated a good fit ($\chi^2 = 3.12$, $df = 6$, GFI = 0.99, CFI = 1.00, RMSEA = 0.000). As shown in Figure 2, the model explains 30% of the variance in customization evaluation and 55% of the variance in behavioral intentions. The results showed that consumers’ aesthetic customization control has a positive effect on the product’s ability for self-expression ($b = .25$) and on customization evaluation ($b = .36$), supporting $H_{1a}$. In support of $H_5$, the product’s ability for self-expression was also affected by the public visibility of the mass customization outcome ($b = .23$). Positive effects of ability for self-expression on customization evaluation ($b = .22$) and on behavioral intentions ($b = .29$) were found. Furthermore, customization evaluation positively affected behavioral intentions ($b = .59$). Hence, $H_2$ and $H_4$ were supported by the data. As the perceived complexity was not significantly affected by consumers’ aesthetic customization control, we did not find support for $H_{1b}$. Finally, in accordance to $H_3$, perceived complexity negatively affected customization evaluation ($b = -.29$).
DISCUSSION

Several scholars acknowledged a deficit in studying co-design from a consumers’ perspective (Dellaert & Stremersch, 2005, Franke & Piller, 2004, Kamali & Loker, 2002). This research has complemented this lack of knowledge by investigating consumers’ evaluation of mass customizing product aesthetics. Understanding the factors that affect this evaluation can provide an understanding of the reasons for success and failure of mass customization.

As a whole, the data support our conceptual model, and underscore the importance of the identity construct with respect to customization of product aesthetics. More specifically, we conclude that increasing the degree of control that consumers can exert on the product’s
appearance during the mass customization process positively affects the product’s ability to express one’s identity. On the other hand, the perceived complexity of the mass customization process negatively affects consumers’ evaluation of mass customization. These opposing effects have to be carefully managed when designing and offering customization tools. To successfully implement mass customization in new products, the mass customization process should provide consumers with enough value to counterbalance the perceived complexity. Our research suggests that because customized products serve an important self-expression role, the public visibility of the mass-customized product’s appearance has to be carefully considered. It is in these situations where the public visibility is high (and thus self-expression benefits can be obtained) that the mass customization can bring more positive consumer responses. When the outcome of the mass customization is not visible to others, consumers appear less favorable toward the mass customization process.

In addition to the hypothesized relationships, two other relationships were found. Because both relationships are mainly the result of partial (as opposed to full) mediation processes, these relationships do not represent significant departure from our theoretical model. First, the results suggested that the personalized product’s ability for self-expression serves as a partial mediator for the effect of aesthetic consumers’ customization control on the evaluation of mass customization. Past research concluded that besides the better fit to one’s preferences, consumers may also appreciate mass customization, because it results in a unique product and because it allows them to have an exciting and enjoyable experience (Fiore et al., 2004, Franke & Piller, 2004, Schreier, 2006). It is likely that consumers’ aesthetic customization control can offer these benefits of mass customization to consumers as well. In line with these arguments, Kamali and Loker (2002) found that consumers are more satisfied with a mass customization
website if they are offered more freedom in the ‘design’ process. Second, the degree to which
the personalized product expresses the consumer’s identity positively affected the behavioral
intentions toward the personalized product directly, suggesting that customization evaluation
serves as a partial mediator. In our study, consumers were able to customize the color and pattern
of the cordless telephone’s cover or display, but could not adapt its overall shape. Nevertheless,
the overall shape may significantly determine the degree to which a product expresses one’s
identity. It is likely that consumers take into account the self-expressiveness of the product in
total in their behavioral intentions toward the personalized cordless telephone. Consequently, the
product’s ability for self-expression positively affects the intentions to consider or purchase the
cordless telephone, independent from the degree to which consumers evaluate the mass
customization itself positively.

We did not find support for the effect of consumers’ customization control on the
perceived complexity of the mass customization process. Although we observe variance in
perceived complexity, within the range of customization control that we manipulated in this
study we were not able to find a statistically significant link between these two variables. These
findings correspond to the results of Dellaert and Stremersch (2005), who found that for the mass
customization of a PC, the number of modules did not significantly affect complexity. Their
findings did reveal a significant effect of consumer expertise on complexity. Accordingly, the
perceived complexity of the mass customization process may have the character of an individual
trait, rather than a task-specific effect. Piller et al. (2004) proposed the use of online communities
for collaborative co-design as a means to reduce the perceived complexity of a customization
task. Future research should investigate the factors that affect the perceived complexity of the
mass customization process in more detail.
**Future Research**

This study explored the effects of consumers’ aesthetic customization control and public visibility of the mass customization outcome to uncover which factors encourage the successful implementation of mass customizing product aesthetics. Nevertheless, we believe that other factors may be relevant as well. For example, personality traits may serve as potential moderators. Dellaert and Stremersch (2005) found that expertise reduces the negative effect of complexity on consumers’ evaluation of the customization of functional features. For the mass customization of product aesthetics, personality traits related to consumers’ creativity (Burroughs & Mick, 2004) and centrality of visual product aesthetics (Bloch et al., 2003) may be more relevant, because these personality traits may be more appropriate to assess a person’s expertise regarding product design.

Past research concluded that mass customization can enhance the product’s fit to one’s preferences (e.g., Franke & Piller, 2003). Nevertheless, the perceived fit of a personalized product may partly be triggered by a person’s biased perception of this product. As a result of the active participation, people may simply perceive the product as providing a better fit to their identity (Simonson, 2005). More research is necessary to investigate the role of consumers’ active participation on their evaluation of the personalized product.

**Managerial Implications**

To take advantage of mass customization market potential, manufacturers need to understand under which conditions consumers evaluate mass customization more positively. Our results suggest that consumers like to customize product aesthetics, because these personalized products can express their identity. To stimulate this benefit, firms should implement mass customization configurations with high degrees of consumers’ aesthetic customization control.
that result in publicly visible outcomes, while reducing the perceived complexity of the mass customization process.

REFERENCES


