The Effect of Brand Attachment on Consumer's Product Modification Behavior

Seungbae Park\textsuperscript{1}, Kyungyoung Ohk\textsuperscript{2}, Jaewon Hong\textsuperscript{3}\textsuperscript{*}

\textsuperscript{1}Department of System Management, Seoil University, 02192 Seoul, Korea
\textsuperscript{2}Department of Consumer Economics, Sookmyung Women's University, 04310 Seoul, Korea
\textsuperscript{3}Department of Global Trade, Gyeongnam National University of Science and Technology, 52725 Jinju, Korea

*corresponding author. E-mail: jwhong@gntech.ac.kr

Abstract. In this study, we attempt to investigate how brand attachment influence to consumer's product modification behavior. For this objective we explore their effects by structural equation modeling. The results show that consumers attached to brand tend to show internal modification behavior even more, as well as external modification behavior. This result indicates that consumers showing behaviors modifying internal appearance of product, as well as external appearance of the product, are likely to be consumers attached to brand. Particularly, the consumers trying to modify external appearance of the product are most likely to be consumers attached to brand.

Keywords: brand attachment, product modification, consumer behavior, hi-tech

1 Introduction

The study regarding product modification behaviors of consumers explains that attachment to brand is related with product modification behavior. Such behaviors as trying to use a product for long time by improving durability, creating un-replaceable existence by modifying product, and making product not sick and tired of by renewing it have been shown by consumers attached to their belongings \cite{1}. These are characteristics shown by people investing significant energy into repairing and modifying bicycle, which allow them to express themselves \cite{2}, or shown by people changing basic format on the internet to decorate their avatars \cite{3} as well. By the way, it is not only difficult to explain emotional bonding between consumers and brands with this product attachment \cite{4}, but also difficult to explain emotional bonding with attitude toward brand \cite{5}. In other word, trust, emotional bonding, and care between consumers and brands, being appeared over long-term centering around brands, are different concepts from product attachment, which has been presented for the purpose of explaining long-term relationship between consumers and brands \cite{5}.

Behaviors of consumers attached to the products, such as modifying those products, are related with desire to express themselves socially. In other word, Product Modification Behaviors is process of realizing self-presentation desire, in
which control, manage information in order to deliver specific image of one’s own to others consistently [6-7].

According to discussions like this, this study predicts that once consumers are attached to brand, they will behave actively with regard to self-expansion through objects, since they consider it as natural. In other word, they will behave actively in representing themselves, since brand attachment is starting point of self-presentation through the brand. Also, it predicts that they’ll show behavior of trying to solve any problems of the products, to which they’re attached, functionally, because consumers attached to the products prefer to even more personalized products [1, 8].

2 Theoretical Background and Hypothesis

Strong attachment requires time-period, and there should be a memory of objects specially existing which encourages meaning for time and those objects [5]. Consumers try to be with products they’re attached for long time as possible as they could, by securing durability of those products. In other word, Creation of attachment to specific subject involves psychological approach the ownership, requires personal history between consumers and belongings, emotionally complicated, and evolves following changes of meaning ‘ego’ [9]. So, they treat attached products with carefully, trying to delay replacement as possible as they could by repairing them at breakdown [10-11]. And consumers tend to personalize attached products physically to make them as a mean to express themselves, time invested to that process makes relation between them even more solid, thereby leading to even bigger product attachment [2]. By the way, attachment to the object has multi-faceted characteristics with respect to relationship between specific subject and people [12]. So, any subjects including pets, location, product, and brand, as well as humans like family, friends, lover, and celebrities, allow emotional bonding to be interacted through experience of consumers [5]. In addition, self-presentation is to materialize expression and experiences in order to deliver their own identity, in which they present themselves by means of costumes, hair style, and vehicles every day, for delivering impression to others in given situations. In other word, they choose and attached to specific brand, which is considered as establishing images differentiated from others, and is coincide with self-concept they’re thinking [13]. As a result, modification behaviors would be taken, in order to differentiate self from others and express self, based on the emotional convenience, once attachment to specific brand being created. So, following assumptions have been established.

Hypothesis 1. Brand attachment of consumers has influence on product external modification behavior.

Hypothesis 2. Brand attachment of consumers has influence on product internal modification behavior.
3 Methodology and Result

3.1 Data and variable measurement

To verify the hypotheses derived previously, relevant data was collected through survey using a questionnaire on variables. A total of 192 respondents participated. Thomson et al. [5] defined brand attachment as strong emotion resulting from long-term relationship with brand, presenting 10 measuring items under 3 dimensions of affection, passion, and connection. For example, such terms as “mine,” “part of me,” “reflecting me,” “expressing me,” “an extension of myself,” “aesthetically appealing to me,” or “emotionally relating to me” reflect connection between brand and ego.

Items regarding Product Modification Behaviors, that are protection behavior, external modification behavior and internal modification behavior, will be composed based on 7 points Likert scale, of which modified question items of Mugge et al. [10] and Mugge et al. [2] to be appropriate to this study. And scale of Morrison et al. [14] will be used for innovativeness. Morrison et al. [14] suggested that people with high innovativeness have a kind of leading-edge status (LES), and they tend to actively improve existing products and services supplied before, according to this level. Innovativeness can be measured by means of high expected level to new acceptance and LES level perceived by self or others, and these are equivalent to optimism and innovativeness, the characteristics putting acceptance of innovativeness forward on the technological readiness index proposed by Parasuraman [15].

3.2 Analysis

In this study, overall measurement quality is assessed using confirmatory factor analysis. As shown in Table 1, overall items indicate convergent and discriminant validity.

Hypothesis validation has been made by means of structure model at this study. \( \chi^2 \) of study model proved to be 106.9 (p=.000), and conformity index was CFI=.951, NFI=.931, GFI=.898, RMSEA=.108, a suitable level. Assumption 1 is one related to brand attachment and product modification behaviors, in which predicts brand attachments would have influence on external modification behavior and internal modification behavior. As a result of the analysis, brand attachment has been proved to have positive influence both on product external modification (\( \beta=.440, t\text{-value } = 6.402, \ p<0.001 \)) and internal modification (\( \beta=.285, t\text{-value } = 3.721, \ p<0.001 \)) behaviors.

<p>| Table 1. Result of reliability and validity analysis |</p>
<table>
<thead>
<tr>
<th>Factor</th>
<th>Measurement items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand attachment</td>
<td>I love my brand.</td>
<td>0.912</td>
</tr>
<tr>
<td></td>
<td>My brand has charm attracting me.</td>
<td>0.839</td>
</tr>
</tbody>
</table>
I feel bonding to my brand.  
I am attached to my brand.  

External modification  
I often decorate my brand by adding various accessories.  
I often decorate my brand.  
I like decorate my brand by way of modifying it into other forms.  

Internal modification  
I think it is important to install separate program on my brand.  
I often install other programs on my brand.  
I often install applications on my brand.  

All of assumptions have been supported, and consumers attached to brand have proved being positive at external modification behavior and internal modification behavior, product usability expand, and product upgrade behaviors. Especially, consumers attached to brand have been found to show behavior of modifying external appearance of product most positively. This result is consistent with study by Mugge, Schifferstein and Schoormans [2], which suggests that it is a method of self-expression following brand attachment, accompanying physical modification (personalization).

Table 2. Result of hypothesis test

<table>
<thead>
<tr>
<th>Path(Hypothesis)</th>
<th>β value</th>
<th>t-value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand attachment → external modification behavior (H1)</td>
<td>0.440</td>
<td>6.402***</td>
<td>.000</td>
</tr>
<tr>
<td>Brand attachment → internal modification behavior (H2)</td>
<td>0.285</td>
<td>3.721***</td>
<td>.000</td>
</tr>
</tbody>
</table>

Model Fit  
\( \chi^2=106.9, \chi^2/df=3.24, p=.000 \)  
GFI=.898, CFI=.951  
RMSEA=.108, NFI=.931, IFI=.951

Note : ***p<0.01

4 Conclusion

This study has academic significance as a study expanding diagnostic evaluation on the behaviors following brand attachment. It has been found that consumers attached to brand tend to show internal modification behavior even more, as well as external modification behavior, as a result of the study. This result indicates that consumers showing behaviors modifying internal appearance of product, as well as external appearance of the product, are likely to be consumers attached to brand. Particularly, the consumers trying to modify external appearance of the product are most likely to be consumers attached to brand. This result is consistent with those of studies on self-presentation, indicating that they treat attached products with carefully, trying to
repair them at breakdown [10] [11], and tend to personalize attached products physically to make them as a mean to express themselves, thereby leading to even bigger product attachment [2].

References