The Effect of Attachments toward Smartphone Applications on Brand Performance and Consumer’s Quality of Life

Mina Jun (Marshall School of Business, USC)

Abstract

The current study examined the positive effects of attachment with smartphone applications on brand support behaviour and life satisfaction. More specifically, this study focused on how attachment with applications yields positive consequences on: (1) support behaviour for parent brand, (2) attachment with smartphone itself that contains the applications, and (3) stress relief as part of life satisfaction. To formally examine the positive effects, we developed hypotheses based on well-established psychological and consumer theories. As hypothesized, our empirical analysis of 460 Korean data showed that attachment with applications positively influenced parent brand supportive behaviour and attachment with smartphone as well, and, more importantly, life satisfaction through stress relief. In addition to academic contributions, important managerial implications are provided for both application developers and smartphone manufacturers to help them make successful applications and smartphones synergistically based on the comprehensive view proposed in the current paper.

Key words: mobile consumption, smartphone application, brand attachment, brand supportive behaviour, parent brand supportive behaviour, stress relief, self-efficacy, life satisfaction, mobile communications

Executive Summary

Since smartphones closely related to people’s everyday life, the value of various smartphone applications also increases. As in the case of Facebook, Twitter, Kindle, and YouTube, people find significant value in terms of social connection, helpful contents, and entertainment, especially because the applications can be used anytime and anywhere they want. As a result, people establish strong attachment with their favourite applications.

It is generally believed that people’s strong attachment has positive effects on their brand
support behaviours and life satisfaction. Under the current circumstances, this study 
examined the positive effects of attachment with smartphone applications on brand support 
behaviour and life satisfaction. More specifically, this study focused on how attachment with 
applications yields positive consequences on: (1) support behaviour for parent brand, (2) 
attachment with smartphone itself that contains the applications, and (3) stress relief as part 
of life satisfaction. To formally examine the positive effects, we developed hypotheses based 
on well-established psychological and consumer theories. As hypothesized, our empirical 
analysis of 460 Korean data showed that our hypotheses test confirms the proposed positive 
consequences of attachment with applications on brand performance and quality of life. 
According to the result of this study, attachment with application leads to parent brand 
supportive behaviour and attachment with smartphone as well and, more importantly, life-
satisfaction through stress relief.

In addition to academic contributions, important managerial implications are provided for 
both application developers and smartphone manufacturers to help them make successful 
applications and smartphones synergistically based on the comprehensive view proposed in 
the current paper.
1. Introduction

As smartphones become an everyday item people carry, the value of various smartphone applications also increases. As in the case of Facebook, Kindle, and YouTube, people find significant value in terms of social connection, helpful contents, and entertainment, especially because the applications can be used anytime and anywhere they want. As a result, people establish strong attachment with their favourite applications.

It is generally believed that people’s strong attachment has positive effects on their brand support behaviours and life satisfaction. For example, if people have strong emotional attachment with Facebook, then they not only are more likely to engage in support behaviours such as recommendation, loyalty, and so on, but also feel happier or more satisfied with life.

The positive effect of strong attachment on brand supportive behaviour and life satisfaction has been well supported in academics in marketing and consumer research (Park et al., 2010; Batra et al., 2012). For example, recent studies empirically documented that attachment with mobile applications positively affect not only brand supportive behaviour for the mobile applications, but also self-efficacy for users, which in turn influences their life-satisfaction. Although these existing studies lay an important foundation for the positive consequences of brand attachment, they did not include several other interesting variables that are related to brand attachment.

Our current study examines the positive effect of attachment on both brand support behaviour and life satisfaction. Different from the existing studies, however, we expand our study to include those important consequence variables; (1) support behaviour for parent brand, (2) attachment with smartphone itself that contains the applications, both as part of brand performance, and (3) stress relief as part of life satisfaction.

Our study makes significant contribution academically and practically in the area of mobile consumer behaviour and life satisfaction, since no existing studies have examined the relationships that the current study does. For example, although attachment toward applications is critically related to attachment toward smartphone itself, there has been no
study that addressed the important relationship. Our study is significant in that it formally examines how attachment with application is related to attachment with smartphone itself. Another significant contribution is that whereas the existing studies included only “the least difficult behaviour” such as support behaviour for the applications that holds strong attachment, our study includes also “the more difficult behaviour” such as support behaviour even for parent brand. More importantly, our study includes stress relief as a consequence variable, which in turn affects life satisfaction. Since many people use smartphones and their applications to relieve stress in the daily life, our study produces interesting implications for practitioners and academics as well.

We bring several relevant psychological theories about attachment, brand support behaviours, stress relief, and life satisfaction. The details about main hypotheses and their supporting theories are presented as follows.

2. Theoretical Development

Our literature review and hypotheses are focused on the positive consequences of attachment with smartphone applications. The positive consequences can occur at both brand performance and consumers’ quality of life. As noted above, previous studies empirically documented that strong attachment with applications can lead not only to users’ supportive behaviour for the application, but also to consumers’ life satisfaction through self-efficacy. This study aims to confirm the findings of existing studies and extend them by suggesting that attachment with applications can lead to parent brand supportive behaviour and attachment with smartphone as well, and more importantly, life satisfaction through stress relief. Therefore, our review focuses on how attachment with applications positively influences the brand performance (i.e. support behaviour for parent brand, and attachment with smartphone) and user’s quality of life especially through stress relief, which have not been examined in previous studies.

2.1 Effect of attachment with applications on brand performance:

parent brand supportive behaviour and attachment with smartphone

It is natural that when people establish emotional attachment or love to a certain object
(person or brand), they are likely to have positive feeling also for its related objects (Olsen, 1995; Feeney, 2004). People who feel attached with iPhone, for example, tend to develop attachment also toward other Apple products such as iPad or MacBook.

This is evidenced in previous studies. Feeney (2004) and Yeung and Wyer (2005) showed that emotional attachment can be transferred one object to another. Fedorikhin et al. (2008) suggested that positive feelings toward a certain brand are likely to transfer to affiliated brands because a person forms the desire to maintain or increase the scope of intentions with the brand. In this light, it can be expected that attachment with applications is transferred to the parent brand or the developer of the applications. Park et al. (2010) documented that brand attachment, compared to brand attitude, has a strong significant effect on consumers’ intention for difficult support behaviour such as WOM, promoting, and depending behaviours for the brand.

In summary, based on discussions above, attachment with applications is likely to transfer to parent brand or maker of the applications, which in turn lead to parent brand supportive behaviours. Therefore, we propose the following hypothesis:

H1: Attachment with applications has a positive effect on parent brand supportive behaviour

Consumers who feel attached with applications are likely to develop attachment towards the smartphone they use. Because smartphones enable consumers to use the applications they like, it is expected that attachment with applications can be readily transferred to smartphone. In the case of Samsung Galaxy Note series which have specialized handwriting note application, for example, consumers with attachment to the note application tend to build attachment to the Galaxy Note device. In addition, previous studies, as mentioned above, suggested that attachment with a certain object can be transferred to another (Feeney, 2004; Yeung and Wyer, 2005).

Consequently, on the basis of these considerations, we suppose that the attachment with applications positively influence the attachment with smartphone device. Therefore, we hypothesize the following:

H2: Attachment with applications has a positive effect on attachment with smartphone
2.2 Effect of attachment with applications on consumer’ quality of life: stress relief and life satisfaction

It is expected that attachment with applications has a positive effect on stress relief. When people feel emotionally attached to a certain object, they experience positive emotions, which in turn help them get rid of negative feelings like stress (Bowlby, 1988; Schore, 2003). Stress refers to any threat, either real or perceived, to the well-being (Kumar, 2013). Hence, stress relief means relieving any threat to the one’s well-being.

The positive effect of attachment on stress relief is theoretically supported by broaden-and-build theory in psychology (Fredrickson, 2001). The theory states that positive emotion broadens people’s novel thought-action repertoires and builds enduring psychological resources such as resilience, hope, and optimism (Fredrickson, 2001). Applying the theory to the current context, attachment with applications enables users to feel positive emotions (Sternberg, 1986), which helps them build psychological resources. Therefore, the positive psychological resources enable people to control behaviour, environment, and feeling more successfully under stressful events.

Based on the discussions above, attachment with applications is expected to positively influence stress relief. Therefore, we propose the following hypothesis:

H3: Attachment with applications has a positive effect on stress relief

It is expected that stress relief in turn has a positive effect on life satisfaction. When people experience stressful event, they feel distressed, which ultimately makes them dissatisfied with life. On the other hand, relieving stress can be helpful in enhancing one’s satisfaction with life. Life satisfaction is defined as global assessment about a person’s quality of life (Shin and Johnson, 1978). The positive effect of stress relief on life satisfaction is evidenced in previous studies.

Kostelecky and Lempers (1998) empirically documented that stressful events cause psychological distress such as depression, loneliness, and anxiety, resulting in decreased well-being that includes life satisfaction. Hence, relieving the psychological distress through stress
relief can result in enhanced life satisfaction.

The above point can be also supported by the Fredrickson’s (2001) broaden-and-build theory. According to the theory, positive emotion broadens people’s novel thought-action repertoires and builds enduring psychological resources. Since relieving stress can generate positive emotions, stress relief is likely to build positive psychological resources such as resilience, hope, and optimism. Therefore, the psychological resources in turn help people live more fulfilling lives, which ultimately result in enhanced life satisfaction.

In sum, it is concluded that stress relief positively influences one’s life satisfaction. Therefore, we hypothesize the following:

H4: Stress relief has a positive effect on life satisfaction.

Our research model can provide a more comprehensive view on the positive effects of attachment with applications on brand performance and quality of life. For example, our model shows that attachment with applications positively influences not only brand supportive behaviour, but also parent brand supportive behaviour and even attachment with smartphone.

3 Research method

3.1 Data collection

A survey was conducted to college students and full-time employees who own smartphones in South Korea. The survey consisted of three types of applications (SNS and messenger, entertainment, education and information) for the purpose of generalizability in terms of application categories.

Participants were randomly assigned to each type of questionnaire and were asked to write down their favourite smartphone application in the given category. Given the choice of their favourite application, the participants were then asked to answer questions about attachment with application, brand supportive behaviour, parent brand supportive behaviour, attachment with smartphone, stress relief, self-efficacy, and life-satisfaction. All the questions used 7-
point Likert scale ranging from ‘strongly disagree’ to ‘strongly agree.’

As a result, the final sample consisted of 460 participants in total after removing 35 unusable samples. The summary of the survey of participants’ demographics is as follows: 60.2% were male and 39.8% were female. Participants ranged in age from 18 to 59 years.

3.2 Measurement

We based the measurements of constructs for this study on well-established studies as shown in Table 2. All of the constructs were measured with a multiple-item scale to preserve the richness of each construct. Detailed measures of each construct are presented in Table 1.

<table>
<thead>
<tr>
<th>Table 1 Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructs</td>
</tr>
<tr>
<td>Attachment with smartphone application</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Attachment with smartphone</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Brand supportive behaviour for smartphone application</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Parent brand supportive behaviour for smartphone application</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Stress relief

Using this app helps me deal with the feelings of irritation or anger.

Using this app helps me deal with nervousness and stress.

Using this app helps me deal with the feelings of discomfort and fear.

Self-efficacy

I am confident that I can deal efficiently with an unexpected event.

It is easy for me to stick to my aims and accomplish my goals.

If someone opposes me, I can find the means and ways to get what I want.

I can always manage to solve difficult problems if I try hard enough.

Life-satisfaction

If I could live my life over, I would change almost nothing.

I am satisfied with my life.

In most ways my life is close to my ideal vision.

The conditions of my life are excellent.

3.3 Reliability and validity

We first conducted Cronbach’s Alpha analysis and Exploratory Factor Analysis (EFA) to test the reliability and validity. As shown in Table 2, all Cronbach’s Alpha values of each construct were above 0.8, indicating that the measures have strong confidence and internal consistency. Generally, we assume high reliability if the Alpha value is above 0.6 (Nunnally, 1978).

To test the validity of the constructs, we first conducted an EFA. A principal component analysis and Varimax rotation were carried out to extract primary features. As shown in Table 2, all measures have high scores of factor loadings, indicating that each construct has validity. In summary, our results of analysis indicated that our measures of the constructs are reliable and valid to investigate the proposed study. Therefore, we proceeded to the main analysis...
with confidence.

Table 2  Result of confirmatory factor analysis

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Cronbach's α</th>
<th>EFA Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attachment with application</td>
<td>1</td>
<td>.931</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.885</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>.845</td>
</tr>
<tr>
<td>Attachment with smartphone</td>
<td>1</td>
<td>.850</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.881</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>.872</td>
</tr>
<tr>
<td>Brand supportive behaviour</td>
<td>1</td>
<td>.693</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.878</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>.711</td>
</tr>
<tr>
<td>Parent brand supportive</td>
<td>1</td>
<td>.862</td>
</tr>
<tr>
<td>behaviour</td>
<td>2</td>
<td>.946</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>.850</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>.831</td>
</tr>
<tr>
<td>Stress relief</td>
<td>1</td>
<td>.899</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.959</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>.901</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>1</td>
<td>.863</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.922</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Life-satisfaction</td>
<td>1</td>
<td>.831</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.897</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

4 Major results and hypotheses test
With confidence in measures of the constructs, we conducted structural equation modelling (SEM) analysis using AMOS to test our hypothesized research model. The model generally showed good fit with the data: CMIN/DF = 3.239, CFI=.944, NFI=.921 IFI=.944, TLI=.931, RMSEA=.070.

Our hypotheses were tested based on the results of the structural equation model analysis. Results of the analysis are presented in Figure 1.

* * *

Hypothesis 1 proposes that attachment with smartphone applications has a positive effect on parent brand supportive behaviour. As shown in Figure 1, the effect of attachment with applications on parent brand supportive behaviour is supported by the data (β=.539, t=11.982). That is, the more people feel attached with applications, the more they would recommend the parent brand (or the developer) to others and try other applications from the same parent brand as well.

Hypothesis 2 proposes that attachment with smartphone applications has a positive effect on attachment with smartphone. The path shows significant positive relationship (β=.487, t=9.837), in support of H2. This means that people who feel attached with that application also tend to build attachment with smartphone that enables them to use the application.

Hypothesis 3 proposes that attachment with application has a positive effect on stress relief.
The path between attachment and stress relief shows a very significant positive relationship ($\beta = 0.422$, $t = 9.200$), in support of H3. That is, people feel their stress is relieved when attached to applications.

Lastly, hypothesis 4 proposes that stress relief has a positive effect on life-satisfaction. The path between stress relief and life-satisfaction shows a significant positive relationship ($\beta = 0.176$, $t = 3.875$), in support of H4. This means that people feel relieving stress can increase their satisfaction with life. The results of H3 and H4, combined together, imply that attachment with applications leads to stress relief, which in turn enhances life satisfaction.

5 Summary and conclusion

5.1 Major findings and academic contribution

Our hypotheses test confirms the proposed positive consequences of attachment with applications on brand performance and quality of life. According to the result of this study, attachment with application leads to parent brand supportive behaviour and attachment with smartphone as well and, more importantly, life-satisfaction through stress relief.

This study focused on positive consequences of attachment with applications on brand performance and the consumers’ quality of life. More specifically, we first confirmed the results of previous studies, the positive effect of attachment with applications on brand supportive behaviour and life satisfaction through self-efficacy.

There are significant academic contributions made by this study. This study extended the existing studies by showing that attachment with applications leads to parent brand supportive behaviour, encourages attachment with smartphone, and improves life satisfaction through stress relief. By doing so, this study contributes to build a more comprehensive model explaining the positive consequences of attachment with applications on brand performance and quality of life.

Also, this study brought to mobile studies psychological theories and perspectives such as attachment theory, broaden-and-build theory, stress relief, and well-being. As a result of this
study, it is visible that attachment with applications not only positively influences self-efficacy, but also yields stress relief. While self-efficacy is considered a long-lasting psychological capital, stress relief is considered a temporal psychological effect. Therefore, interestingly, the current study empirically showed attachment with applications positively affects the quality of life through both long-lasting and temporal psychological effects. This psychological aspect of this study adds more richness to existing mobile literature.

5.2 Managerial implications

The current study also provides significant managerial implications for smartphone brands and application developers. The fact that attachment with applications leads to attachment with smartphone suggests that smartphone brands such as Apple, Samsung, and others should consider developing specialized applications for their own smartphone products. In the case of iPhone, for example, many consumers feel attached to iPhone because there are many applications they like that can be used only with iPhone. Especially under the current circumstances with the smartphone technology being standardized, it becomes difficult for smartphone brands to differentiate their smartphone device from others. In this sense, the result of this study suggests that developing specialized powerful applications can be the key to success for smartphone brands.

Another important managerial implication is the fact that attachment with applications leads to parent brand supportive behaviour. This means building strong relationship like attachment with consumers can be critical for success of application developers. Because consumers who feel attached to an application are likely to evaluate positively other applications of same developer, the developer is advantageous when launching new applications, as exemplified in Facebook recently.

5.3 Limitations and future research

Although this study makes academic and managerial contributions, it has limitations which further studies need to address. First, this study used the survey method. Further studies may want to use the experimental method or the qualitative research method. Especially, qualitative research such as in-depth interview will help further studies understand how
attachment with application influences consumers’ quality of life more deeply.

Also this study demonstrated that attachment with applications positively influence brand performance and life satisfaction through stress relief. Finding other positive consequences of attachment with applications would make great further studies.

Finally, as our study as well as previous studies suggested the significance of attachment with applications, a search for what builds the attachment will also be an interesting future direction. In this sense, a previous study suggested self-connection and social-connection as antecedents of the attachment. Therefore, finding other antecedents that lead consumers to build attachment with applications will add more richness to existing literatures.
References


