A Study of the Impact of Mobile Self-Efficacy and Emotional Attachment on Mobile Device Infusion

Richelle Oakley
*Information Systems and Operations Management, The University of North Carolina - Greensboro, Greensboro, NC, United States*, rloakle3@uncg.edu

Prashant Palvia
*Information Systems and Operations Management, The University of North Carolina at Greensboro, Greensboro, NC, United States*, pcpalvia@uncg.edu

Follow this and additional works at: [http://aisel.aisnet.org/amcis2012](http://aisel.aisnet.org/amcis2012)

**Recommended Citation**


[http://aisel.aisnet.org/amcis2012/proceedings/AdoptionDiffusionIT/15](http://aisel.aisnet.org/amcis2012/proceedings/AdoptionDiffusionIT/15)
A Study of the Impact of Mobile Self-Efficacy and Emotional Attachment on Mobile Device Infusion

Richelle L. Oakley
The University of North Carolina at Greensboro
rloakle3@uncg.edu

Prashant C. Palvia
The University of North Carolina at Greensboro
pcpalvia@uncg.edu

ABSTRACT

Individuals are constantly using their smartphones and tablets as a digital enhancement to their day-to-day activities. The ubiquitous computing ability that individuals now have creates a genuine research interest in understanding how these individuals have integrated mobile devices within their lives. This study aims to explore how an individual’s mobile self-efficacy and emotional attachment impact their perpetual engagement with mobile devices. Through a multi-method research approach, using both qualitative and quantitative data collection and analysis, this research provides several contributions to the dearth of research on this topic in the information systems field.

Keywords
Mobile self-efficacy, mobile emotional attachment, mobile device infusion

INTRODUCTION

There has been an increase in the day-to-day use of mobile devices throughout all classes of society (Hong and Tam, 2006). Whereas initially these devices were associated with business workers, mobile devices have now permeated all age groups, from teenagers to senior citizens, and is used for work and non-work related activities (Hong, et al., 2008). The emergence of smart phones and tablets has revolutionized the way businesses interact with their consumers and has impacted how individuals complete routine activities. As all of this innovation is occurring in practice, academic literature has remained fairly silent on how individuals are altering their daily behaviors due to their constant interaction with these mobile devices (Tarasewich, et al., 2002; Yoo, 2010). Information systems (IS) researchers have mostly focused on investigating the antecedents, behaviors, and outcomes of how individual users of technology adapt with technology (Beaudry and Pinsonneault, 2005). Though it is important to understand how individuals adapt to a particular technology, it is also important to understand the varying ways in which they begin to innovate with the technology to complete tasks and integrate the technology within their daily lives. Prior research has applied task-technology fit theory in order to examine the unique ways in which mobile information systems are adopted and used as the technology continually develops (Gebauer and Ginsburg, 2009). The research on task-technology fit has merely touched the surface on how this type of integrated adaption occurs. Our research goes beyond mere adaptation of technology, and focuses on the intermingling of the technology within an individual’s daily actions. More recently, the concept of technology infusion has been defined as the deeper level of usage that individuals exhibit when interacting with technology (Tennant, et al., 2011) and has been used to assess the permeation of a technology within the work system of a firm or an individual (Moore II and Stafford, 2003). Therefore, this study applies a technology infusion perspective in a mobile device context in order to begin to develop and explore the theoretical dimensions of mobile device usage.

IS research has highlighted the importance of examining the impact of technological artifacts on the “digitally mediated experience[s]” that individuals encounter on a daily basis (Yoo, 2010, p. 219). Individuals are using their smartphones and tablets as a digital enhancement to their day-to-day activities. For example, people use smartphones to listen to music, map their destinations, purchase items or services, and keep in contact with friends and family, all the while engaging in other physical daily activities such driving to work, going to a grocery store, or eating at a restaurant. Within a very short time period of owning a mobile device, some individuals are able to adeptly navigate these devices in order to accomplish various tasks. This manifestation of self-efficacy (Bandura, 1977), where individuals are confident in what they can do with a particular technology (Compeau and Higgins, 1995), can have an impact on the usage of the mobile device. Additionally, as much as this ubiquitous computing ability is present everywhere, IS research has shied away from examining “the adoption and use of information technology (IT) in a non-work context” (Yoo, 2010, p. 215). As this is a more natural setting for individuals,
examining non-work contexts may be the key to fully understanding how individuals can have more successful interactions with technology in various other contexts. Due to the enhanced capabilities that individuals have as a result of their interaction with mobile devices, individuals are becoming more attached to technology which can impact their usage of technology in all aspects of their lives. Further, there is a genuine research interest in understanding how individuals are managing this constant entanglement of computing capabilities with their daily activities (Aakhus, 2011). As individuals become more adept at using their mobile devices to complete various tasks, they may also be able to highlight various areas in which the technology could be enhanced. This study aims to fill this gap in IS research through exploring the perpetual engagement individuals have with mobile devices. Thus, the research question in this study is: How do mobile self-efficacy and mobile emotional attachment impact mobile device infusion?

This study uses the literature on information system infusion to examine the interconnection between individual abilities and innovative technologies as a theoretical foundation. Information technology (IT) infusion can be succinctly defined as “using IT in a more comprehensive and integrated manner” (Tennant, et al., 2011, p. 2), resulting in usage of IT as an embedded part of an individual’s task completion system (Cooper and Zmud, 1990; Zmud and Apple, 1992; Saga and Zmud, 1994; Moore II and Stafford, 2003; Wang and Hsieh, 2006). It has been used to examine how embedded information systems are within a firm’s core activities (Jones, et al., 2002) and how employees continually use complex information systems within a firm (Hsieh and Wang, 2007). Despite its relevance to current information systems (IS) issues, infusion studies are limited within the IS academic literature (Ng and Kim, 2009). Historically, infusion has been primarily studied on the organization-level, with few research studies examining IS usage from an individual-level of analysis (Moore, 1999; Peijan and Lihua, 2007; Tennant, et al., 2011). This research is unique in that it applies the IS infusion lens on the individual level in a mobile device context. Examining how mobile devices are embedded within an individual’s work system (how the individual completes their daily tasks) would allow researchers to more fully understand how technology can be integrated in other business-related contexts. This study also addresses the various calls for research on experiential computing (Yoo, 2010), on mobile devices (Middleton, et al., 2011), and on the entangled nature of the relationship between individuals and technology (Cecez-Kecmanovic, et al., 2011). Mobile devices are a unique technology platform that allows for the examination of all of these varied concepts.

The remainder of the paper is organized as follows. First, a review of the prior literature on IT infusion, mobile self-efficacy, and mobile emotional attachment is provided. Hypothesis are also developed on the relationships between these the aforementioned constructs. Second, a detailed discussion of the research methodology and analysis of the collected data is provided. Lastly, after a discussion of the results, implications and future applications of this study are provided in the conclusion.

LITERATURE REVIEW & RESEARCH MODEL

The link between IT and the value that is derived from IT has been a topic of interest within academic literature (Petter, et al., 2008; Fink and Neumann, 2009). Zmud and Apple (1992) highlight this type of intrinsic value of technology when the technology has been incorporated within a firm’s operational work systems. They discuss the presence of modifications that occur within work and social systems due to the innovative technology, stating that “the greater the extent of these... adjustments, the greater the extent to which an innovation has been infused” (Zmud and Apple, 1992, p. 149). In a business context, the modifications could be the addition of a new technology which completely revamped a business process and improves work efficiency. In a non-work context, the modification could be the purchase of a mobile phone which completely changes how the individual makes decisions, from choosing which restaurant to eat at to figuring how to get from one location to another. Moreover, the deep level of usage is characterized by usage of the innovative technology to its “fullest potential” (Tennant, et al., 2011, p. 2) or by the level of embeddedness within the work or social system (Zmud and Apple, 1992). This technology infusion, an “advanced and comprehensive use of IS” (Tennant, et al., 2011, p. 2), is distinguishable from mere routinization of IS, where the technology usage is examined through its initial usage and the continual usage of said technology on a regular basis (Cooper and Zmud, 1990). IS infusion focuses more on the comprehensive and innovative uses of IS (Tennant, et al., 2011), rather than on mere adoption and usage. Thus, this approach becomes particularly useful in a mobile device context because researchers are interested in measuring how user behavior is affected by mobile devices (Middleton, et al., 2011).

IT Infusion

There have been several notable attempts within the IS infusion literature at identifying the appropriate measurement for this concept (Zmud and Apple, 1992; Jones, et al., 2002). While some researchers have implicitly measured IS...
Mobile self-efficacy positively impacts the extended (a), integrative (b), and emergent (c) use of mobile devices. Thus, the following hypotheses are raised: 

H1: Mobile self-efficacy positively impacts the extended (a), integrative (b), and emergent (c) use of mobile devices.

Mobile Emotional Attachment

As individuals interact with technology, there is an assessment as to what the individual can do with the technology. Compeau and Higgins (1995) described computer self-efficacy as “judgment of one’s capability to use a computer” as an extension to Bandura’s (1977) self-efficacy concept. We adopt this view and apply it to mobile devices, termed mobile self-efficacy (MSE). MSE can be defined as the judgment of one’s capability to use a mobile device and its associated services, as well as judgment of the ability to apply those skills to broader tasks (Lee and Hsieh, 2009). Technology self-efficacy has been shown to have an impact on individual’s degree of persistence when interacting with said technology (Compeau and Higgins, 1995; Lee and Hsieh, 2009). It has also been shown to have an impact on an individual’s use of technology and has been used in several studies as an important antecedent to technology usage. This study aims to investigate how the perception of one’s abilities with a mobile device will directly affect the levels of infusion with the device. For example, if an individual cannot determine how to map a location that was sent to them via text, this would greatly limit the level of infusion with the device. Further, it would be highly unlikely that this individual would be able to explore additional actions that the mobile device could complete. Though many mobile devices come with a basic manual, there is minimal training that is involved. Individuals have to rely on their common sense and, to some extent their technology self-efficacy, in order to explore additional uses of the mobile device through determining how to seamlessly map a location that was sent to them via text. This three-modal typology of infusion has been previously researched and has been found to be consistent with the phenomena of interest (Wang and Hsieh, 2006).

As individuals are constantly using information systems in their daily personal and work activities, they experience easily modifiable technology (Leonardi, 2011), which leads them to learn new and innovative ways to exploit the information system to its fullest potential (Wang and Hsieh, 2006). This highly exhaustive use of IT exemplifies the infusion of technology within an individual’s day-to-day activities. Individuals that constantly use mobile devices throughout the day have been able to identify an intangible value that is derived from the various capabilities that the technology affords them. Further, individuals are able to immediately realize the value in mobile devices through the intensity of their usage, thus causing an emotional attachment to these new founded mobile device enabled capabilities. Extant IS research has yet to examine what factors impact a user’s connection with mobile devices. Using the three subsets of IS infusion described previously, this study aims to examine the interconnected nature and entanglement of individuals with mobile IS.

IS research has examined various factors that impact user behavior, adoption, and usage of mobile devices (Hong and Tam, 2006; Hong, et al., 2008). This research focuses on two concepts in particular – self-efficacy and emotional attachment – and examines how they impact the embeddedness of mobile devices in a user’s work and social system.

Mobile Self-Efficacy

As individuals interact with technology, there is an assessment as to what the individual can do with the technology. Compeau and Higgins (1995) described computer self-efficacy as “judgment of one’s capability to use a computer” as an extension to Bandura’s (1977) self-efficacy concept. We adopt this view and apply it to mobile devices, termed mobile self-efficacy (MSE). MSE can be defined as the judgment of one’s capability to use a mobile device and its associated services, as well as judgment of the ability to apply those skills to broader tasks (Lee and Hsieh, 2009). Technology self-efficacy has been shown to have an impact on individual’s degree of persistence when interacting with said technology (Compeau and Higgins, 1995; Lee and Hsieh, 2009). It has also been shown to have an impact on an individual’s use of technology and has been used in several studies as an important antecedent to technology usage. This study aims to investigate how the perception of one’s abilities with a mobile device will directly affect the levels of infusion with the device. For example, if an individual cannot determine how to map a location that was sent to them via text, this would greatly limit the level of infusion with the device. Further, it would be highly unlikely that this individual would be able to explore additional actions that the mobile device could complete. Though many mobile devices come with a basic manual, there is minimal training that is involved. Individuals have to rely on their common sense and, to some extent their technology self-efficacy, in order to successfully complete actions. This has major implications on the way in which individuals continually use mobile devices. Thus, the following hypotheses are raised:

H1: Mobile self-efficacy positively impacts the extended (a), integrative (b), and emergent (c) use of mobile devices.

Mobile Emotional Attachment

An individual’s emotional attachment to their mobile device can impact their usage of the device. Recent research has highlighted this emerging concept and its potential implications (Meschtscherjakov, 2009). Ellison et al. (2007) touched upon this concept with the use of an attitudinal measure of an individual’s emotional connection to Facebook. Their research highlighted that there was a connection between the user’s emotional connection to the technology (Facebook) and their usage of the technology. This research adapts and integrated these concepts into a
mobile emotional attachment (MEA) construct. MEA is defined as a mobile device user’s emotional connection and attachment to the device. Individuals who use mobile devices on a day-to-day basis develop a long-term relationship with the device, which leads to a form of emotional attachment (Vincent, 2006; Wehmeyer, 2007; Meschtscherjakov, 2009). This mobile emotional attachment to the device can impact the levels of technology infusion. For example, the more an individual is attached to the mobile device, the more often they use the device in more innovative and creative ways. As the emotional connection to the technology and to the capabilities afforded by the technology deepens, there may be a corresponding cognitive response where the user is able to discern new and innovative uses for the device. Thus, the following hypotheses are raised:

H2: Mobile emotional attachment positively impacts the extended (a), integrative (b), and emergent (c) use of mobile devices.

RESEARCH METHODOLOGY

The research methodology is a multi-method approach which entails both qualitative and quantitative methodologies. In Phase I, we employed a qualitative approach to refine the model and ensure that we have captured all aspects of the phenomenon. In Phase II, we employed a quantitative methodology in order to add statistical support to the research model.

Phase I: Qualitative Methodology

The initial phase of data collection and analysis was through a qualitative approach through the completion of a focus group. This sequential multi-method research approach, where the “methods are employed in sequence with results from one feeding into the later one” (Mingers, 2001, p. 252), was used to support the a-priori theoretically developed constructs. The process for the focus group, which was chosen to allow for a wide variety of experiences from a group of individuals, involved the prompting of discussion on the topic of interest through various semi-structured questions. Follow-up questions were asked for clarification of responses. The focus group involved 5 individuals with demographics data shown as follows:

<table>
<thead>
<tr>
<th>Gender</th>
<th>3 Female</th>
<th>2 Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td>4 African-American</td>
<td>1 White/Caucasian</td>
</tr>
<tr>
<td>Age Range</td>
<td>4, ages 20-23</td>
<td>1, age 29</td>
</tr>
<tr>
<td>Highest Education Completed</td>
<td>3, Juniors</td>
<td>1, 2-yr degree; 1 4-yr degree</td>
</tr>
<tr>
<td>Annual Household Income Range</td>
<td>3, $40-$49,999</td>
<td>1, $20-29,999; 1, $50-59,999</td>
</tr>
</tbody>
</table>

Table 1. Focus Group Demographics

The results of the focus group discussion included confirmation and further development of the conceptual understanding of the constructs that will be examined within this study. During the hour-long focus group, participants conversed and discussed their different experiences and opinions on how mobile devices have become integrated into their daily work and non-work routines. Subsequently, using thematic analysis, the focus group audio and transcript data were analyzed for “themes and patterns” (Glesne, 2011, p. 187). Table 2 displays some of the quotes from the focus group that provided support for the constructs in this research:

<table>
<thead>
<tr>
<th>Construct</th>
<th>Supporting excerpts from interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Device Self-Efficacy</td>
<td>“common sense to use it”</td>
</tr>
<tr>
<td></td>
<td>“it is easy [to use]”</td>
</tr>
<tr>
<td></td>
<td>“my new phone is just like my old one”</td>
</tr>
<tr>
<td></td>
<td>“I feel like I can travel [with my mobile phone]”</td>
</tr>
<tr>
<td></td>
<td>“it’s very user friendly”</td>
</tr>
<tr>
<td></td>
<td>“we grew up with computers so we can just kinda figure it out”</td>
</tr>
<tr>
<td></td>
<td>“use Google [to find out how to do something]”</td>
</tr>
<tr>
<td>Mobile Device Emotional Attachment</td>
<td>“I had to accept the $100 bill… but the benefits is worth [it]”</td>
</tr>
<tr>
<td></td>
<td>“my battery life affects my life”</td>
</tr>
<tr>
<td></td>
<td>“people just addicted to their phones”</td>
</tr>
<tr>
<td></td>
<td>“I just think it’s a great phone”</td>
</tr>
<tr>
<td></td>
<td>“I have a lock on it… it’s just mine”</td>
</tr>
<tr>
<td></td>
<td>“if I see the light… I want to check it”</td>
</tr>
</tbody>
</table>
Self-Efficacy, Emotional Attachment, and Mobile Device Infusion

Extended Use
“app has GPS in it so I can find where I want to go eat”
“app tells you how to get there … and then use the map to figure out where to go next”
“I mostly just text and call, check my email… I don’t use all of the other features”
“just emails”

Integrative Use
“find a restaurant… it will show me venues, types of food”
“a lot of things are centered in one device… now I can figure out what to do, what’s around me”
“situations change… I just update it [map]”

Emergent Use
“just play with it”
“the more you play with it, the more you learn”
“I see what new games are out”
“I just type it in the market and hope that it is there”
“talking to friends…searching the app store to see what’s out”

Table 2. Qualitative Construct Support

Phase II: Quantitative Methodology

Survey Development and Pilot Study

A survey was developed which incorporated the results from the qualitative phase. A few of the modifications to the survey instrument from the qualitative phase included revising the usage scale to include more usage of phone within an hour since many respondents stated “checking” their phone multiple times in an hour and inclusion of a question on how long the respondent has had their personal mobile phone since a majority of the focus group respondents had owned mobile phones for only 1-3 years. A description of the survey items is provided next. Mobile device infusion was measured as 3 sub-constructs with extended, integrative, and emergent usage measured with 4 items each. Mobile self-efficacy was measured using the 10-item confidence scale adapted from the Compeau and Higgins (1995) computer self-efficacy measure. Lastly, mobile emotional attachment was measured as a 10-item measure adapted from Ellison et al.’s (2007) Facebook Intensity scale. A pilot test was conducted to review the items and ensure that there were no major issues in respondents understanding of the items.

Full Study Analysis and Results

The goal of the full study is to provide generalizability to the model and discuss the implications and findings from the results. The proposed model and hypothesized relationships among constructs were examined using structural equation modeling and partial least squares (SEM-PLS) modeling (Ringle, Wende, Will, 2005; Henseler, Ringle, and Sinkovics, 2009) in SmartPLS 2.0M3.

The sample consisted of 111 respondents, with a total response rate of 25%. The respondents included 71 (64%) male and 40 (36%) female participants with 61% reporting an age between 20 to 24 years of age. 47% of respondents identified themselves as white and 29% identified themselves as African-American. 32% of the respondents reported annual household income of less than $20,000. 33% of the subjects indicated using their mobile phone every 15 minutes or less and 42% reported having their mobile phone for 6 or more years. In order to assess non-response bias, this research compares early respondents to late respondents (Compeau and Higgins, 1995) and the results in Table 3 show that there are no significant differences in the demographics representation of the respondents.

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Group</th>
<th>Mean</th>
<th>T-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Early</td>
<td>1.35</td>
<td>0.13</td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td>Late</td>
<td>1.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Early</td>
<td>2.94</td>
<td>0.29</td>
<td>0.77</td>
</tr>
<tr>
<td></td>
<td>Late</td>
<td>2.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>Early</td>
<td>2.67</td>
<td>0.98</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td>Late</td>
<td>2.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>Early</td>
<td>3.84</td>
<td>-0.35</td>
<td>0.73</td>
</tr>
</tbody>
</table>
Late 4.03
Education Early 5.65 0.01 0.99
Late 5.64

Table 3. Early vs. Late Respondent t-tests

Measurement Model Analysis

Average variance extracted (AVE), composite reliability, and Cronbach’s alpha were used to test convergent validity and reliability. AVE is a statistic that shows how much variance captured by the latent variable is shared among other variables. If the AVE is less than .50, then the variance is primarily due to measurement error, rather than the construct. Composite reliability is a measure of the overall reliability of a collection of different but related items. Composite reliabilities above 0.7 are considered to exhibit construct reliability. Cronbach’s alpha measures the internal consistency of the construct, where the ideal value is above 0.7. As illustrated in Table 4, all constructs were satisfactory, with Cronbach’s Alpha at or above 0.7, composite reliability at or above 0.7, and AVE at or above 0.5 (Straub, 1989).

<table>
<thead>
<tr>
<th>Construct</th>
<th># of Items</th>
<th>AVE</th>
<th>Composite Reliability</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inf-Emergent</td>
<td>4</td>
<td>0.909715</td>
<td>0.975786</td>
<td>0.966871</td>
</tr>
<tr>
<td>Inf-Extended</td>
<td>4</td>
<td>0.914530</td>
<td>0.977167</td>
<td>0.968812</td>
</tr>
<tr>
<td>Inf-Integrative</td>
<td>4</td>
<td>0.921390</td>
<td>0.979113</td>
<td>0.971526</td>
</tr>
<tr>
<td>Mobile Emotional Attachment</td>
<td>10</td>
<td>0.622944</td>
<td>0.942128</td>
<td>0.931402</td>
</tr>
<tr>
<td>Mobile Self-Efficacy</td>
<td>10</td>
<td>0.792683</td>
<td>0.974476</td>
<td>0.970819</td>
</tr>
</tbody>
</table>

Table 4. Convergent Validity Measurement

A matrix of correlations between constructs with the square root of the AVE on the diagonal is shown in Table 5 and was used to assess discriminant validity, where the square root of AVE for each construct was in fact higher than the elements in the off-diagonal.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Inf-Emergent</th>
<th>Inf-Extended</th>
<th>Inf-Integrative</th>
<th>Mobile Emotional Attachment</th>
<th>Mobile Self-Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inf-Emergent</td>
<td>0.953790</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inf-Extended</td>
<td>0.815243</td>
<td>0.956311</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inf-Integrative</td>
<td>0.920643</td>
<td>0.841684</td>
<td>0.959891</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile Emotional Attachment</td>
<td>0.354415</td>
<td>0.423887</td>
<td>0.363509</td>
<td>0.789268</td>
<td></td>
</tr>
<tr>
<td>Mobile Self-Efficacy</td>
<td>0.648415</td>
<td>0.680780</td>
<td>0.657769</td>
<td>0.116646</td>
<td>0.890327</td>
</tr>
</tbody>
</table>

Table 5. Discriminant Validity Measurement

Additionally, discriminant validity is assessed by comparing the loadings of an item with its associated construct and with its cross-loading on other constructs (Gefen and Straub, 2005; Henseler, Ringle and Sinkovics, 2009). Ideally, the loadings will be strong on the corresponding variables and be above a minimum of 0.5 (Hair, et al., 1998; Gefen and Straub, 2005) and this threshold was satisfied (values were not included due to space limitations).

Structural Model Analysis

The hypothesized relationships were tested by applying the bootstrapping re-sampling technique to calculate the corresponding t-values for each path and to assess the significance of the path estimates. Path coefficients and $R^2$ values were computed by running the PLS algorithm to assess the predictive performance of the structural model.
The research model with empirical results is shown in Figure 1. Mobile self-efficacy (H1a,b,c), and mobile emotional attachment (H2a,b,c) were found to have significant direct effects on extended usage, integrative usage, and emergent usage, explaining 58.4%, 51.6%, and 49.9% of the variance, respectively.

**DISCUSSION**

The results of the analyses show that mobile self-efficacy and mobile emotional attachment have a positive effect on the levels of mobile device infusion, where they both account for 58.4% of the variance in extended usage, 51.6% of the variance in integrative usage, and 49.9% of the variance in emergent usage. The more that individuals are comfortable with the technology, the more infused the device becomes within the day-to-day activities of the individual. A notable trend in the data is the decreasing impact that is exemplified in the impact of both MSE and MEA on the three types of infusion. Further, MSE has an overall greater impact on mobile device infusion as opposed to MEA. These results highlight the importance of MSE on the ways in which individuals embed mobile devices within their activities. Users who are confident in their ability to use the mobile device to complete various tasks are able to deepen their usage of the device and integrate it within their day-to-day activities.

**CONCLUSION**

The implications of this research are two-fold. For academia, this research adds to the limited research that has examined how mobile devices have become entangled with individual’s daily actions. Though there has been some initial research on mobile devices for non-work activities (Hong and Tam, 2006; Hong, et al., 2008), IS research is still lacking in a variety of theories that examine this area. For practice, this research highlights the current usage of mobile devices and how individuals have embedded these technology-enabled ubiquitous computing capabilities into their daily actions. This understanding can provide businesses with insight into how they can structure innovative training activities to capitalize on an individual’s perpetual connection with mobile devices.

As individuals continue to quickly adapt to changing technologies, there is a need for research to examine how technology users integrate these devices within their daily lives. This study allows for further examination of the interaction between individuals and mobile devices. Mobile device infusion provides a way to assess the level of embeddedness of mobile devices within individual’s work system. Mobile device users have a technology-facilitated ubiquitous computing ability that they integrate within their daily activities, possibly creating skills that are transferable into a work related environment.
ABBREVIATED REFERENCES


