Gender Difference in Social Networking on Smartphones: A Case Study of Korean College Student Smartphone Users*

Namsu Park**
HyunJoo Lee***

ABSTRACT

This study investigated gender differences in smartphone application use and examined the gender effect in terms of social relations and social support on smartphones. Data were collected through an online survey among college student smartphone users (N = 226). Results revealed that women tend to use camera on smartphones more frequently than men, while men are more likely than women to use phone calling and smartphone applications. Also, the results showed specific patterns of using smartphones for maintenance of personal relationships. When spending their time on smartphones mediated text communications, women were more likely to perceive bonding relationships strengthened, whereas men tended to perceive more bridging relationships expanded. These findings suggest that women tend to intensify close strong relationships by keeping up with friends on smartphones, while men are likely to use smartphones to expand their weak social ties.

Key words: Gender, Smartphone use, Bonding relationship, Bridging relationship, Social support

※ First received, March 5, 2014; Revision received, April 16, 2014; Accepted, May 2, 2014.
* This paper was supported by the SMART Research Professor Program of Konkuk University.
** Department of Mass Communication, Konkuk University, 268 Chungwondaero, Chungi-si Chungcheongbuk-do, 380-701, South Korea, E-mail: park.namsu@gmail.com
*** Corresponding author, Professor, Department of Mass Communication, Konkuk University, 268 Chungwondaero, Chungi-si Chungcheongbuk-do, 380-701, South Korea, E-mail: hyunjoolee69@gmail.com
1. INTRODUCTION

According to Nielson Korea’s report on smartphone adoption and use, 58% of the adults in South Korea own smartphones as of August 2011. As smartphone ownership increases and a smartphone offers enormous advantages, the social changes being wrought by the technology is having a profound effect on the economic, cultural, and social aspects. Particularly, a smartphone profoundly influences our social interaction, by making us easily communicate with others through some applications providing the uses for communication. Thus, prior studies have paid much attention on research to acquire preliminary information of diverse smartphone usages and motivations, including users’ personal characteristics and additional factors to affect smartphone adoption (Park & Shin, 2010; Kim et al., 2011; Lane & Manner, 2011). However, there is lack of the prior study in comprehensive research to look at the gender difference in smartphone use.

The gendered difference in the patterns of technology use has been one of the core issues in the debate regarding Information Communication Technology (ICT) use (Lu & Liu, 2011). Scholars examined the gendered difference in preferred activities and patterns of managing social networks through ICTs (Boneva, Kraut, & Frohlich, 2001; Roberts, Foehr, & Rideout, 2005; Lin & Yu, 2008; Thelwall, et al., 2010). The findings indicated that males tend to focus more on activities for entertainment such as online game, while females tend to prefer activities for social contact (Lin & Yu, 2008; Moyal, 1992). Different uses of communication technologies between men and women may result in different impacts on diverse social aspects. These findings make way for discussion of useful theoretical framework on gender difference in smartphone usage and social relationships. Smartphones support multiple types of activities ranging from information seeking and/or entertainment to social contacts by converging communication and media technology. Therefore, the socially constructed use of smartphones based on their technological attributes enabling multiple functions makes the device to be useful in examining different patterns of usage and social relationships between females and males.

1. Gender Difference in Smartphone Application Use

Previous studies found the different pattern in online activities between men and
Gender Difference in Social Networking on Smartphones

women (Boneva, Kraut, & Frohlich, 2001; Roberts, Foehr, & Rideout, 2005; Song et al., 2009). Females’ new media usage was mostly devoted to communication activities that could allow them to stay connected to their friends and thus to maintain personal networks. On the other hand, males used new media for information and entertainment (Nelson & Cooper, 1997; Orleans & Laney, 2000; Boneva et al., 2001; Muscanell & Guadagno, 2012). Females were likely to spend more time on visiting websites, sending/receiving emails, and on instant messaging than males, whereas males were more likely than females to invest time on computer gaming. As one example, sending and receiving emails with friends and family was one of the dominant online activities for females (Boneva et al., 2001), while males tended to spend more time on reading online news, engaging in task-oriented work, or visiting websites of governmental departments (Na, 2002). As the other example, compared to those of male mobile phone users, female counterparts tended to display usage patterns of employing texting and multimedia functions more frequently (Na, 2002; Lee & Sohn, 2006). This particular difference could suggest that the mobile phone is a female-friendly device that contributes to fostering women’s more expressive communication style for emotional support between social relations. Based on this finding, the present study examines if gender differences exist in diverse applications usage on smartphone.

H1: There will be gender differences in smartphone application use.

2. Gender Differences in Smartphone Social Relationships and Social Support

Discussion relating to gender difference is often framed through the concepts of “expressiveness” and “instrumentality” (Yang et al., 2008). The concept of expressiveness indicates “a set of attitudes and behaviors associated with emotional intimacy and sharing in personal relationships (Boneva et al., 2001).” On the other hand, instrumentality refers to “a more agentic style of relationship oriented around common activities (Boneva et al., 2001).” These concepts imply that the gender difference inherent in communicative orientation results in different styles in communication and maintenance of social relationships.

Previous studies have identified differences in the way men and women relate to others and manage their relationships in the telephone (Noble, 1987) and computer-mediated communication (Boneva et al., 2001). The authors explained that women
use the communication technologies more often than men to sustain a large circle of distant friendships, because the communication technologies make it easier to share thoughts and feelings at a distance than to engage in common activities at a distance. Specifically, women spend more time on keeping in touch with family and friends and finding new people to communicate with than men do (Boneva et al., 2001). Emphasizing the value of effectiveness of the ICTs (Lu & Liu, 2011), on the other hand, men are likely to engage in more task-focused activities (e.g., reading the news, getting financial information) rather than focusing on maintaining relationships (Muscanell & Guadagno, 2012). The findings suggest that men and women place the different value on personal relationships.

From another point of view, direct communication such as text messages exchanged on the mobile phone between friends is both a product of the friendship and a mean of facilitating and maintaining such friendships. Thus, the directed communication between users on communication technologies plays the important role in bonding social relationships (Burke, Marlow, & Lento, 2010). Burk and his colleagues (Burke et al., 2010) showed that women were more likely than men to engage in SNS activities for strengthening bonding social capital.

The present study aims to examine whether or not the different value exists on smartphone mediated social relationships and if so, in what manner the gender difference is shown on smartphones. Smartphone provides multiple methods of communication that enable users to stay connected to their social networks irrespective of time or place. A smartphone use allows easy access to social network sites (SNSs) and instant messaging (IM) and becomes a part of social routine. According to the report by Facebook, the number one SNS, mobile monthly active Facebook users were 819 million (about 71% of the total monthly active users) which was an increase of 51% over last year (Facebook, 2013). It means that Facebook users spend more time accessing the social network on smartphones than on computers. By reflecting the changing environment of technology use, the present study examines how female and male users build and nurture social relationships differently through the multiple methods of communication on smartphones.

**H 2:** There will be gender differences in smartphone social relationships.

Different values of men and women on social relationships may result in the different requisite emotion for providing social support. Good, close relationships
help people build friendships and develop trust for their social ties and the relationships may offer feelings of being supported (Wellman & Gulia, 1998). Such supportive relationships can function as a resource for coping with negative feelings, such as stress or isolation (Cohen, 1988). Previous studies presented the significant effects of gender differences in perceived social support on ICTs use (Kraut et al., 2001; Thelwall et al., 2010). Females tend to perceive more social support resulting from Internet use than males do (Kraut et al., 2001). As a result of content analysis of public Myspace comments, women are likely to give and receive more emotional and positive comments than men (Thelwall et al., 2010). These findings imply that the extent of social support could depend on the gender difference in emotional expression in communications.

This study examines whether using smartphones has different consequences for social support between men and women. Multiple communication channels on smartphones provide helpful resources in terms of the social support that members of social networks provide to each other (Wellman & Gulia, 1998). The use of smartphones enabled concurrently by their integrated multiple functions instead of using the respective functions of existing media may serve as an intensive impetus to the sense of social support. Therefore, the following research question is suggested:

H 3: There will be gender differences in smartphone use and levels of perceived social support.

II. METHODS

1. Sampling

Data were collected from 266 students from several universities in Korea in November 2011. A total of 245 participants (93 males, 152 females) excluding missing values and outliers were included in the final analysis. Ages ranged from 19 to 25 years (M = 22.3; SD = 2.16) and all of the participants owned and used a smartphone regularly. The gender ratio of this sample shows a female dominance in the participants. While 93 participants (37.9%) were male, female participants were 152 (62.1%). This gender ratio does not match that of the population from which the sample was drawn. In order to respect the gender frequency distribution of the
population and to adjust distortion within the sample, the current study therefore assigned a weighting factor on the male participants’ responses.

2. Measures

1) Smartphone use

In order to measure smartphone use relating to social relationships and perceived social support, the present study focused on smartphone mediated communication behaviors (Kraut et al., 2001): 1) the frequency of smartphone use to make phone calls with friends and 2) the frequency of smartphone use for text based communications with friends, including SMS, IM, and SNSs. Since IM (e.g., KakaoTalk, a multi-platform of texting application in Korea) and SNSs replace SMS for smartphone text communications, only 17% of smartphone owners use SMS (Korea Internet & Security Agency, 2012). Thus, this study combined SMS use with Internet based text communications, IM and SNS. The two questions were answered with a 7 point Likert scale (1 = never; 7 = very often) (M = 4.85, SD = 1.34 for calling; M = 5.47, SD = 1.30 for texting).

2) Social relationships

Social relationships were measured by adapting nine items of Boase and Kobayashi’s (2008) survey. The items asked about respondents’ level of agreement with separate statements (1 = strongly disagree; 7 = strongly agree) with regard to the presumed functions of cellphones for bonding, bridging, and breaking with ties. Principal component analysis extracted two factors and the items were summed and averaged to create two different types of smartphone mediated social relationships: 1) bonding relationships with friends (e.g. “smartphones have allowed you to have stronger relationships with your close friends,” and “smartphones have allowed you to feel that your friends were near you”) (M = 4.69, SD = 1.08, α = .87) and 2) bridging relationships with friends (e.g. “smartphone usage has increased your friends outside of school,” and “smartphone usage has allowed you to keep in touch with people whom you recently met”) (M = 3.43, SD = 1.24, α = .85).
3) Perceived social support

Participants’ perceived social support was measured with Zimet et al.’s (1988) social support scale. Respondents were given seven items with which they had to rate their agreement (e.g., “I have a special person who is a real source of comfort to me,” “My friends really try to help me,” “I can count on my friends when things go wrong,” etc.). The scale ranged from 1 (strongly disagree) to 7 (strongly agree). The items were summed and averaged to create an index of perceived social support (M = 5.24, SD = 1.24, α = .95).

III. RESULTS

1. Gender Differences in Smartphone Activities

Hypothesis one examined if there are gender differences in smartphone applications use. Chi-square testing showed significant difference between female and male respondents in three smartphone activities. Female participants (61.0%) more frequently used their smartphone’s camera than did their male counterparts (39.0%). On the other hand, more male participants reported that making phone calls and using other applications excluding SNS and instant messaging were their main activities on smartphones (see Table 1).

<Table 1> Gender and smartphone usage

<table>
<thead>
<tr>
<th>Smartphone Applications Used</th>
<th>Male</th>
<th>Female</th>
<th>Chi-square</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone calling</td>
<td>66 (64.7%)</td>
<td>36 (35.3%)</td>
<td>7.839</td>
<td>.005**</td>
</tr>
<tr>
<td>SMS</td>
<td>32 (62.7%)</td>
<td>19 (37.3%)</td>
<td>2.166</td>
<td>.141</td>
</tr>
<tr>
<td>Camera</td>
<td>30 (39.0%)</td>
<td>47 (61.0%)</td>
<td>8.458</td>
<td>.004**</td>
</tr>
<tr>
<td>Multimedia playback (DMB, MP3, etc.)</td>
<td>42 (53.8%)</td>
<td>36 (46.2%)</td>
<td>.011</td>
<td>.917</td>
</tr>
<tr>
<td>Internet surfing</td>
<td>70 (53.5%)</td>
<td>62 (47.0%)</td>
<td>.008</td>
<td>.927</td>
</tr>
<tr>
<td>Other application usages</td>
<td>62 (63.3%)</td>
<td>36 (36.7%)</td>
<td>5.638</td>
<td>.018*</td>
</tr>
<tr>
<td>Social network sites (Twitter, Facebook, etc.)</td>
<td>82 (55.4%)</td>
<td>66 (44.6%)</td>
<td>.482</td>
<td>.488</td>
</tr>
<tr>
<td>Instant messaging (KakaoTalk, etc.)</td>
<td>124 (54.6%)</td>
<td>103 (45.4%)</td>
<td>.545</td>
<td>.460</td>
</tr>
</tbody>
</table>
2. Gender Difference of Smartphone Social Relationships and Support

Hypotheses two and three examined gender differences in social relationships and social support as consequences of smartphone use. In order to investigate these two hypotheses, the present study examined whether the amount of the time for smartphone communications is related to social relationships and levels of perceived social support. Hierarchical regression analysis was used to examine the contribution of age, gender and the amount of smartphone mediated communication to predict the bonding and bridging social relationships and perceived social support. In addition, the interaction effects of the amount of smartphone mediated communication and gender were examined in order to explore whether the gender effects of smartphone use were presented in the three dependent variables. These factors were entered into the regression equations in the following order: users’ age and gender (step 1), and the amount of smartphone-mediated communication and its interaction effects with gender (step 2).

The hierarchical multiple regression equation with all the variables entered accounted for 37% of the variance in bonding social relationships. Age and gender entered in Step 1 had no significant influence on bonding social relationships, indicating 3% of the explanation out of the total variance. Entering the amount of smartphone mediated communication in Step 2, the predictor explained 34% of the variance. Specifically, the amount of text-based communication with friends (SMS, IM, and SNS) was a significant positive predictor ($\beta = .65, p < .001$) to affect bonding relationships. On the other hand, no significant relationship was found between all the variables and bridging social relationships (see Table 2).

The hierarchical multiple regression equation accounted for 36% of the explained variance of perceived social support. Age and gender entered in Step 1 accounted for 7% of the total variance. Entering the amount of smartphone mediated communication in Step 2, the predictor explained an additional 29% of the variance. Age ($\beta = .15, p < .05$) and gender ($\beta = .20, p < .01$) were significant positive predictors to determine levels of perceived social support. The amount of smartphone mediated communication through calling ($\beta = .33, p < .001$) and texting ($\beta = .30, p < .001$) with friends was a significantly positive contributor to the level of perceived social support. The final results of the hierarchical regression analyses are summarized in Table 2.
Gender Difference in Social Networking on Smartphones

<Table 2> Gender, smartphone use and social impacts

<table>
<thead>
<tr>
<th></th>
<th>Social Impacts of Smartphone Use</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bonding social relationships</td>
<td>Bridging social relationships</td>
<td>Perceived social support</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>β</td>
<td>T</td>
<td>β</td>
<td>t</td>
<td>β</td>
</tr>
<tr>
<td>Age</td>
<td>.08</td>
<td>1.26</td>
<td>.01</td>
<td>.08</td>
<td>.15</td>
</tr>
<tr>
<td>Gender (female = 1)</td>
<td>.12</td>
<td>1.84</td>
<td>-.06</td>
<td>-.87</td>
<td>.20</td>
</tr>
</tbody>
</table>

| R²                          | .03    | .00    | .07    |
| Calling friends             | .05    | .64    | .14    | 1.40   | .33    | 4.16***|
| Text based communication    | .65    | 8.00***| .11    | 1.15   | .30    | 3.65***|
| with friends (SMS, IM, SNS) |        |        |        |        |        |        |
| Gender*calling              | .08    | 1.05   | .04    | .46    | -.12   | -1.53  |
| Gender*text communication   | .19    | 2.39*  | -.32   | -3.26**| .10    | 1.22   |

| R² change                  | .34    | .07    | .29    |
| Total R²                   | .37    | .07    | .36    |

*p < .05, **p < .01, ***p < .001

Meanwhile, the regression model explored the interaction between the amount of smartphone mediated communication and gender and found there was a significant positive interaction between text-based communication and gender on bonding social relationships (β = .19, p < .05; see Table 2). This result suggests that smartphone text communications are more useful for female participants to strengthen bonding relations than for male participants, as spending more times on smartphones (see Figure 1).
In addition, Table 2 presented a significant negative interaction effect between text communications on smartphones and gender on bridging social relationships ($\beta = -.32, p < .01$). As seen in Figure 2, male participants tend to perceive greater level of bridging social relationships than female participants do, when spending more time on text communication on smartphones.
IV. DISCUSSION AND CONCLUSION

The purpose of the present study was to investigate gender differences in smartphone application use and to examine the gender effect in terms of social relations and social support on smartphones among young adults. While men are more likely than women to use phone calling and smartphone applications, women tend to use camera on smartphones more frequently than men do. These findings present that men are more likely to use smartphones for task-focused activities, while women have tendency to use smartphones for entertainment and social exchange of expressing their own daily lives and browsing others’ lives by taking and uploading photos and videos. Taking pictures could be a social activity for young females as a way of building social relationships by recording daily events as
they take place and expressing their identities through uploading them.

The significant contribution of this study is to identify gender specific patterns of using smartphones for maintenance of personal relationships. The analyses of interaction effects showed that gender makes difference in the effects of smartphone mediated text communications on bonding and bridging social relationships. When spending their time on smartphone mediated text communications, women are more likely to perceive bonding relationships to be strengthened, whereas men are more likely to perceive bridging relationships to be expanded. These findings suggest that women tend to intensify close strong relationships by keeping up with friends on smartphones, while men tend to use smartphones to expand their weak social ties.

The different patterns of smartphone mediated social relationships between men and women could be explained in part by gender difference in motivations of smartphone use. The preliminary analysis of this study revealed that the relative importance of motives for women using smartphones was communication with close friends (M = 4.04, SD = 1.45 for male; M = 4.49, SD = 1.39 for female; t = -2.70, p < .01). This finding confirmed women’s tendency as heavy communicators which has already been revealed in previous research (Boneva et al., 2001; Facebook, 2013). Scholars suggest that women are more likely than men to define themselves through their social relations and to act as the communication hub between the household and kin and friends (Boneva et al., 2001).

This study also contributes to providing an understanding of the associations between men’s smartphone mediated text communications and bridging social relationships. The results showed that men are more likely than women to nurture bridging social relationships as they spend more time on smartphone text communications. Based on this finding, we can infer that men’s communications on smartphones are not specifically targeted at core networks, as opposed to women’s preference to the direct communication to interact with a small core of their friend networks. Smartphones support diverse features for text communications ranging from multimedia messaging services (MMS) to applications for social networking, including SNS and instant messaging (IM) such as KakaoTalk. In particular, SNS has communication architecture to strengthen bonding relationships and to expand bridging relationships. Additionally, SNS activities provide the communication context to maintain bridging social relations by enabling users to monitor and comment on all of the content, including the general broadcasts shared by his friends, including status updates and public conversations by the user’s friend with
others (Burke et al., 2010). These activities might not be oriented toward relationship maintenance between strong ties but more likely to be connected to a wide range of social ties for content consumption on SNSs. Accordingly, we can conclude that men’s instrumental communication styles (Boneva et al., 2001) make them to be linked to their large, diverse social ties.

Demographic variables for social support, respondents who were female and much older were associated with high level of social support. Similar to gender difference in perceived social support on the Internet and SNS (Kraut et al., 2001; Thelwall et al., 2010), the present study also found that females perceived more emotional and expressive social support than males did when in use of smartphones. Moreover, the more respondents used phone calling and text communication including SNS use as a part of interpersonal mediated communication were, the higher they perceived social support. The results implied that when respondents should express their emotion to their networked people in the supportive context, they could increase their phone calling and text communication.

Despite the significance of this study, some limitations could be addressed in further research. The participants employed for this study do not reflect the dynamics of the whole population of Korea. For this reason, we cannot generalize the various findings shown in this study to all Koreans, although college students in their 20s are the dominant group of smartphone users. However, our findings do suggest that significant differences between females and males exist in smartphone mediated communication and that, furthermore, women’s expressive communication style and men’s instrumental communication style result in different consequences in sustaining social relationships. This research could provide a case study to assist in understanding the nature of gender differences in smartphone use and their social outcomes. Future research could also explore smartphone use in other contexts and in more diverse communities.
REFERENCES


Appendix. The Scale and Items Used in This Study

**Gender**
1. Female
2. Male

**Age**

**Activities on Smartphone**
1. Voice call
2. Short message service
3. Instant messaging
4. Camera
5. Multimedia (DMB, MP3, Video)
6. Game
7. Club/blog
8. SNS (Twitter, Facebook)
9. Chatting (Kakao Talk)
10. Applications
11. Internet surfing/search

**Perceived Social Support Scale**
1. I have a special person who is a real source of comfort to me.
2. My friends really try to help me.
3. I can count on my friends when things go wrong.
4. I can talk about my problems with my family.
5. I have friends with whom I can share my joys and sorrows.
6. There is a special person in my life who cares about my feelings.
7. I can talk about my problems with my friends

**Presumed Smartphone Function for Social Relationships:**

**Smartphone has**
1. allowed you to have stronger relationships with your close friends
2. allowed you to feel that your friends were near you
3. made your family stop worrying about you
4. allowed you to keep in touch with newly met people
5. increased your friends outside of school
6. decreased your relationships with friends to whom you are not very close
7. decreased the necessity of having relationships with friends who you do not get along with
8. decreased your chances of meeting with a large group during holidays
9. increased change of gathering only with close friends