

The Comparative Analysis on the Digital Divide of Senior Citizens through the Preference for Mobile Internet and Social Media

Kyoung-ryul Park*, Jeong-lae Kim**

**Graduated from Graduate School of KwangWoon University. Doctor of Public Administration*

e-mail: danielsuccess@hanmail.net

***Department of Biomedical Engineering Eulji University, Seoul, Korea*

e-mail: jlkim@eulji.ac.kr

Abstract

This study analyzed the digital divide of Korean senior citizens through the preference for smart media. Targeting two media out of mobile internet and mobile social media, the media dependency ratio and the trend of people in their 20s-60s were verified. Regarding the dependency ratio of young people(20s) and senior citizens(60s), in case of mobile internet, people in their 60s were average 8.6% while people in their 20s were average 38.9%, so that the ratio of senior citizens was lower by 30.3%. In case of social media, people in their 60s were average 1%, which was 7.1% lower than people in their 20s(8.1%). And this divide was the digital divide shown in the informatization process through the trend of internet use of senior citizens in their 60s or up. Thus, as the policy measures for solving the digital divide of senior citizens, it would be required to continuously develop the digital cultural programs for senior citizens, to expansively perform the government subsidiary policies like additionally providing the essential information to senior citizens, and also to expand the smart-based infrastructure for senior citizens' participation in economic activities.

Keywords: *Senior Citizens, Mobile Internet, Social Media, Digital Divide.*

1. Introduction

According to the 2017 Internet Use Survey, jointly researched by the Ministry of Science and ICT, and the Korea Internet & Security Agency, the internet utilization of senior citizens in their 60s or up is continuously increasing every year such as 32.8% in 2014, 39.5% in 2015, 51.4% in 2016, and 58.8% in 2017. Also, regarding the mobile internet utilization, the senior citizens in their 60s were 81.2%(8.2% increased compared to 73.0% in 2016), and the senior citizens in their 70s or up were 31.2%(6.7% increased compared to 2016). In the SNS utilization, the senior citizens in their 60s were 37.5%(7.7% increased compared to 29.8% in 2016), and the senior citizens in their 70s or up were 10.4%(2% increased compared to 8.4% in 2016), which is increasing every year[1].

After giving a huge meaning to the gradually-increasing internet use of Korean senior citizens and then

considering the actual status of digital divide excluded from benefits like digital access shown in the informatization process, this study aims to suggest the policy alternatives. For the research task, this study researched/analyzed the media users' awareness survey data for four years in 2014-2017 by the Korea Press Foundation.

In order to verify the degree of digital divide between senior citizens in their 60s and each age group of Korea, this study conducted the time-series deviation analysis on the media dependence of each age group of people in their 20s-60s, targeting two media of mobile internet and mobile social media that could be the representative communication means of smart society.

And the age of senior citizens of this study was based on the age of 60 used in the National Pensions Act and gerontology of Korea.

2. Statistical Implications of Media Dependency Ratio and Research Methods

2.1 Statistical Data of Media Dependency Ratio

Currently, Korea is rapidly entering the aging society. This increase of elderly population is accompanied by all sorts of social problems like the digital divide with the younger generations, and especially, the appearance of new media is continuously causing the digital divide between generations[2]. Thus, giving a huge meaning to the gradually-increasing internet utilization of Korean senior citizens in their 60s based on the advanced informatization, this study aims to examine the actual status of digital divide through the media dependency ratio of mobile internet and mobile social media. For the research task, this study researched/analyzed the media users' awareness survey data for four years in 2014-2017 by the Korea Press Foundation.

As the statistical data selected for analysis, the items such as ① fixed internet, ② mobile internet, ③ social media through fixed internet, ④ social media through mobile, and ⑤ others were suggested to the survey subjects. Out of them, they were asked to select the media for 1) receiving daily news, and 2) receiving information about the current political/economic/social issues or judging values.

Even though the results of this study understand individuals' media dependency ratio, they imply the accessibility to the selected media, so that the value of research is high for analyzing the digital divide issue. Actually, many researches(Park, No-Il et al., 2017; Kim, Young-Joo&Jeong, Jae-Min, 2002) under the theme of media and digital divide viewed that the media dependence itself would reflect the state of digital divide[3]. This study also intensively analyzed two media of mobile internet and mobile social media judged to be fully reflecting the characteristics of smart media. And for the statistical data of these media, the face-to-face research was conducted targeting 5,000 people in their 19 or up in the whole nation. After the square-root proportional distribution in accordance with the registered resident population in 17 metropolitan cities/provinces, the stratified proportioning systematic sampling was done. The sampling error was 95% with the reliability level of $\pm 1.4\%$.

This study diachronically analyzed the statistical data of survey results. Regarding the concept of 'information' and 'digital divide' mentioned in this study, the definition used in the Article3 of Framework Act of National Informatization was cited. And for the definition of access, competency, and utilization divide, the concept used for the research on the digital divide by the Ministry of Science and ICT, and the Korea Internet & Security Agency was respected.

2.2 Composition of Media Subject

As individuals' media dependence implies the accessibility to the selected media, the mobile divide is

expected to changing into diverse aspects in accordance with the degree of media dependence in the smart era. In Figure 1, individuals could maintain their lives smoothly by understanding the convenient media for living and also easily securing information as there are diverse areas that could be accessed by individuals. On top of always receiving and searching the best information, the media store a package of photos and information about all the relevant press release related to themes or events. In Figure 2, the components of media are defined as all the environments making it possible for communication. On top of the traditional concept-media like newspaper, radio, television, and smartphone, the internet service such as SNS and searching is also included. In diverse places like hospital and school with communications, social interactions occur based on the technical elements, which has the elements like container, contents, and context [7-8].

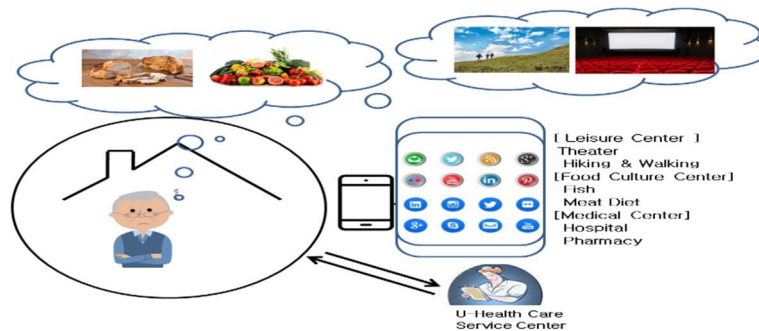


Figure 1. Subject Items of Media

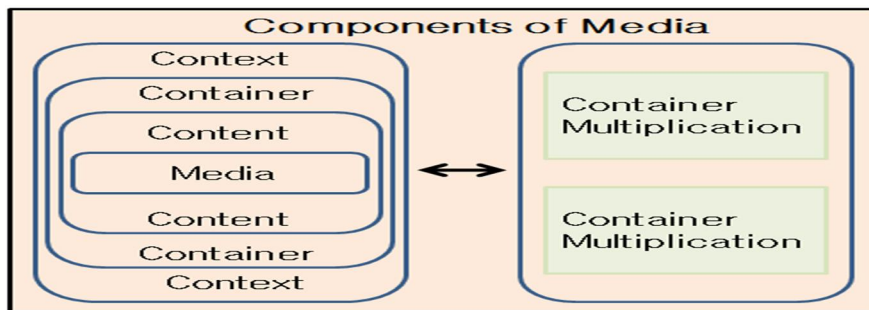


Figure 2. Components of Media

3. Analysis on the Digital Divide and Acceptance Behavior of Mobile Internet & Social Media of Senior Citizens

3.1 Mobile Internet Media Dependence and Digital Divide

With the development of ICT, the new news platform appears in the mass-media area, and the behavior and method of consuming news are also diversified. Especially, owing to the spread of smartphone, the frequency of using news in most of the media like newspaper and television is decreasing while the news consumption in much quicker and more convenient mobile internet media is largely increasing from 19.5% in 2011 to 73.2% in 2017, which shows the trend of popularization. And the younger generations who are born/grown in the digital era show the higher dependence on such mobile internet media while senior citizens in their 60s with relatively less experiences in digital culture show the dominant consumption of

television and newspaper[4]. Just like Table 1 and Figure 3, this reality is demonstrated by the share of mobile internet media dependence in the media users' awareness survey in 2014~2017.

Table 1. Share of Mobile Internet Media Dependence in Each Age Group

(Unit: %)

Section	2014	2015	2016	2017	Remarks (average)
20s	37.4	36.6	43.9	38.0	38.9
30s	30.6	31.9	38.8	34.2	33.8
40s	23.8	27.4	32.1	31.4	28.6
50s	14.8	20.5	23.9	27.2	21.6
60s	4.9	7.1	8.3	14.2	8.6

Source: Korea Press Foundation, Media Users' Awareness Survey(2014~2017), Reconstruction

According to Table 1 showing the trend of mobile internet media dependence in each year, as time passed, the dependency ratio was increasing in the whole age groups, and especially, the dependency ratio was expanding in younger generations. Also, compared to the whole age groups, the age groups in their 20s-30s showed the highest dependence. The age groups in their 40s-50s also showed the high share as time passed.

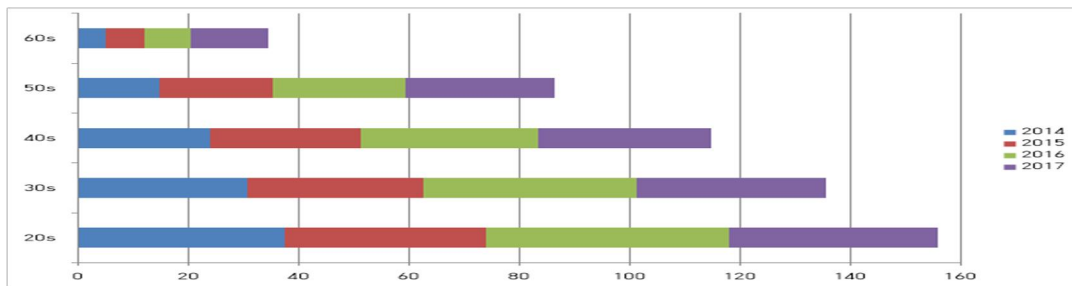


Figure 3. Share of Mobile Internet Media Dependence in Each Age Group

On the other hand, in case of senior citizens in their 60s, the dependency ratio in 2014 was 4.9% that was relatively lower than the whole age groups. After gradually expanding, however, the share was increased to 14.2% in 2017. This trend of mobile internet dependency ratio has the positive(+) relationships with the smartphone possession ratio of senior citizens in their 60s(50.1% in 2015, 60.3%, in 2016, 73.6% in 2017), researched by the Korea Communications Commission and the internet use ratio(39.5% in 2015, 51.4% in 2016, 58.8% in 2017), jointly researched by the Ministry of Science & ICT, and the Korea Internet & Security Agency. Based on the age group in 60s, the divide between each age group is like Table2 below.

Table 2. Deviation of Mobile Internet Media Dependence Based on the 60s

(Unit: %)

Section	2014	2015	2016	2017	Remarks (average)
60s-20s	-32.5	-29.5	-35.6	-23.8	30.3
60s-30s	-25.7	-24.8	-30.5	-20.0	25.2
60s-40s	-18.9	-20.3	-23.8	-17.2	20.0
60s-50s	-9.9	-13.4	-15.6	-13.0	12.9

In order to more concretely consider the divide in each age, the deviation of mobile media dependence based on the 60s of Table 2 has been created with difference values subtracting the statistical values in the relevant areas of each age group from the basis of 60s in the share of mobile internet media dependence in each age group of Table 1.

In the deviation of mobile internet in each age group based on the 60s of Table 2, the senior citizens in their 60s and young people in their 20s show the high divide(average 30.3%), and there are also clear differences(more than 20%) between 30s~40s. In results, such differences should be understood as the digital divide issue shown in the process of informatization as the senior citizens in their 60s could not move to the new media like mobile internet because of their personal conditions and limitations. The statistical values shown in Table 1 and Table 2 reflect the actual status of digital divide of Korean senior citizens.

3.2 Analysis on the Social Media Dependence and Digital Divide

According to the 2017 Internet Use Survey, jointly researched by the Ministry of Science and ICT, and the Korea Internet & Security Agency, regarding the SNS use ratio of Korea, people in their 20s were 92.8%(1.3% increased from 91.5% in 2016), people in their 30s were 86.0%(2.1% increased from 83.9% in 2016), people in their 40s were 75.6%(6.1% increased from 69.5% in 2016), people in their 50s were 57.0%(4.4% increased from 52.6% in 2016), people in their 60s were 37.5%(7.7% increased from 29.8% in 2016), and people in their 70s were 10.4%(2% increased from 8.4% in 2016), so that all the age groups show the trend of increase compared to 2016[5]. Just like Table 3 and Figure 4, this increase of SNS use is fully reflected in the mobile social media dependence in each age group in the media users' awareness survey by the Korea Press Foundation.

Table 3. Share of Mobile Social Media Dependence in Each Age Group

(Unit: %)

Section	2014	2015	2016	2017	Remarks (average)
20s	6.0	6.8	8.1	11.5	8.1
30s	3.2	3.8	4.5	8.8	5.0
40s	1.7	2.0	2.6	5.6	2.9
50s	1.0	1.9	1.6	4.0	2.1
60s	0.3	0.6	0.5	2.6	1.0

Source: Korea Press Foundation, Media Users' Awareness Survey(2014~2017), Reconstruction

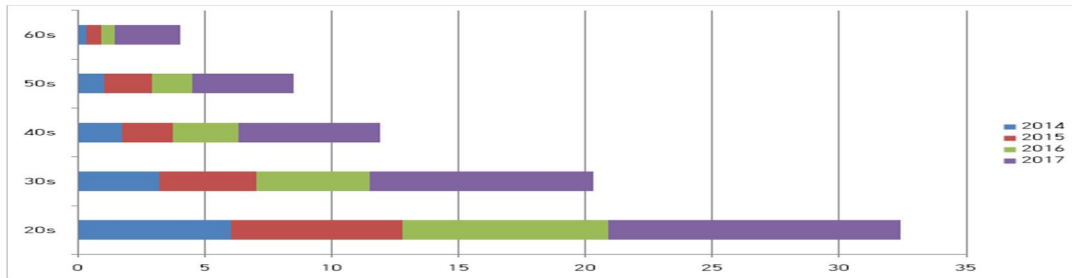


Figure 4. Share of Mobile Social Media Dependence in Each Age Group

Just like Table 3, similarly to the mobile internet, the social media dependence is increasing in all the age groups as time passes, and the dependency ratio of younger generations gets relatively higher(In case of people in their 20s, the share is average 8.1% while the share of people in their 60s is average 1%). Here, the share of mobile social media dependence is relatively lower than other media because the purpose of using social media is still mainly focusing on the management of personal connections, acquisition of information, and sharing hobbies and interests[6]. Also, on top of the convenience of group activities for the purpose of social participation, a bit of ability and level to operate IT devices are required, so that the ratio of fixed class is relatively lower than other media. Therefore, considering the high smartphone possession ratio of senior citizens in their 60s, the digital divide shown in the mobile social media dependence must be largely influenced by the divide of competency and utilization which is the ability to use smart devices, instead of the access divide. Here, the deviation of mobile social media in each age group based on the 60s is like Table 4.

Table 4. Deviation of Social Media Dependence Based on the 60s

(Unit: %)

Section	2014	2015	2016	2017	Remarks (average)
60s-20s	-5.7	-6.2	-7.6	-8.9	7.1
60s-30s	-2.9	-3.2	-4.0	-6.2	4.0
60s-40s	-1.4	-1.4	-2.1	-3.0	1.9
60s-50s	-0.7	-1.3	-1.1	-1.4	1.1

In the deviation of social media dependence, the senior citizens in their 60s show the high divide with young people in their 20s(average 7.1%) and with people in their 30s(average 4.0%). The divide with people in their 40s-50s is also higher than 1%.

Summarizing the above trend of mobile internet and mobile social media dependence, when generally supposing the ability/level to operate IT devices and also to freely use social media as the passing mark of informatization, only one out of 100 Korean senior citizens in their 60s is in the level of consuming news through social media(In Table 3, the social media dependency ratio of Korean senior citizens in their 60s is average 1%). Also, compared to the fact that the smartphone possession ratio of Korean senior citizens in their 60s or up is pretty high like 50.1% in 2015, 60.3% in 2016, and 73.6% in 2017(Statistical data of Korea Communications Commission), the mobile internet and mobile social media dependency ratios are relatively

lower because the digital divide of Korean senior citizens is largely influenced by the divide of competency and utilization showing the ability to use smart devices, instead of the access divide.

4. Conclusions

This study comparatively verified the digital divide of Korean senior citizens by conducting the time-series analysis on the dependence in each age group in 20s-60s, targeting two media of mobile internet and mobile social media.

Today, the digital divide issue shown in the process of informatization is even highlighting the inequality issue between users in accordance with the complicated abilities to use ICT, rather than the divide between users and non-users. In other words, in terms of the inequality issue of our society, the social conflicts could be expanded by adding the factor of information inequality to the existing income inequality issue.

As Korea is the country that is the most rapidly aging out of OECD countries, the digital divide of Korean senior citizens is expected to be evolving into another aspect as the mobile divide in the smart era. Therefore, in the aging society, the digital divide issue of Korean senior citizens should be perceived as an important matter. As there should be more preemptive and proactive measures, this study aims to suggest the policy alternatives as follows.

First, it would be needed to continuously develop and to expand the digital cultural programs for senior citizens. As Korea has many senior citizens who have not goes through the digital culture because of the rapid aging, some senior citizens refuse the digital society without understanding it. Therefore, it would be necessary to continuously develop and to expand the digital refinement cultural programs for senior citizens, so that they could understand that the independent information sharing based on ICT could improve the quality of senior citizens' lives, and also the living-friendly digital culture could be settled down.

Second, the government subsidiary policies should be expansively enforced such as the additional provision of essential information to senior citizens. The younger generations with the high accessibility to ICT more quickly acquire the important information necessary to living through mobile internet and social media while senior citizens with relatively less experiences in using smart devices are excluded from such information. Thus, on top of the government-level measures for additionally supporting the high-quality information essential for improving the quality of life to senior citizens, it would be necessary to continuously expand the government subsidiary policies such as the support of silver phones for senior citizens.

Thirdly, it would be necessary to expand the infrastructure for senior citizens' participation in economic activities based on smart technologies. It would be needed to establish the system for their participation in economic activities based on smart technologies for the second lives of retired senior citizens, and also to enforce the social-integrated digital divide solution policies that could expand the social infrastructure such as education for actively leading senior citizens.

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