

Original Article

Social Media Dependency and Civic Engagement Among Older Urban Adults in Korea

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ABSTRACT

This study examines the relationship between social media use among older adults in South Korea and civic engagement both at the national level (national political interest, political efficacy, and national political participation) and at the local level (local interest, collective efficacy, and local participation). This study was guided by communication infrastructure theory and the social media dependency model. We focused on Kakao Talk, one of the most popular social media in South Korea, for this study. We modified the existing concept of social media dependency to address the dependency relationships of older adults with Kakao Talk. Using interviews with respondents aged 65 years or older ($N = 280$), we found that their social media dependency (measured as Kakao Talk dependency) was associated with local interest, collective efficacy, local participation, national political interest, and political efficacy. However, social media dependency was not associated with national political participation. We then compared the difference in effect sizes for interest, efficacy, and participation at the local and national levels. The results showed that the differences in effect sizes between the local and national levels were not significant for interest and efficacy, but the difference in effect sizes was significant for participation.

KEYWORDS

social media, social media dependency, civic engagement, older adults, communication infrastructure theory

Social media has been found to impact civic engagement significantly (Gil de Zúñiga et al., 2012; Y. C. Kim & Shin, 2013; Y. C. Kim & Shin, 2016; Y. C. Kim et al., 2019; Zhang et al., 2010). However, there has been little focus on how social media use affects civic engagement among older adults, despite such usage for this population having grown significantly in recent years, both in Korea (Korea National Information Society Agency, 2022) and elsewhere (CBS, 2018; Cotten et al., 2022; Ofcom, 2017; Ortiz-Ospina, 2019). Many older adults in Korea, defined here as those older than 65, are active users of social media platforms, such as Kakao Talk or Band, both of which offer group chat

functions and are the most common messenger services in Korea. Through such platforms, this demographic often shares postings on civic and political topics at both the local and national levels (Choi, 2017; Y. Min, 2019). Recently, older adults in Korea have been among the most active participants in street rallies on national political issues (Ahn & Lee, 2019; D. I. Kim, 2017). They are also more active participants in local community engagement (Kang, 2013; S. H. Lee, 2014) than their younger counterparts (Bae & Park, 2016; Y. Lee, 2016).

Even with increasing social media use and the intensification of political and civic engagement among older adults, there have not been many systematic investigations of the relationship between their social media use and civic engagement. Numerous studies on social media and civic engagement have included individuals aged 65 and older as part of their research samples. However, due to the unique generational experiences that older adults in Korea have had in terms of their use of social media and participation in civic and political activities, it is prudent to conduct a study that focuses exclusively on this specific demographic. In a rapidly aging society, exploring the relationship between seniors' adoption of social media and their participation in civic affairs requires a comprehensive examination of the political, social, and economic contexts that shape their lives. It also requires a thorough understanding of the changes in their physical, cognitive, and social capacities. Therefore, separate studies focusing exclusively on older adults are essential for a more nuanced understanding of these dynamics in older adults.

Using communication infrastructure theory (CIT, Ball-Rokeach et al., 2001; Y. C. Kim & Ball-Rokeach, 2006a) and the social media dependency (SMD) model (Ball-Rokeach, 1998; Y. C. Kim & Jung, 2017; Y. C. Kim et al., 2019), this study hypothesizes that social media dependency (i.e., the degree to which social media use is central to achieving everyday goals) positively affects civic

and political engagement among older adults. Among many social media services available in Korea, we focus on Kakao Talk, as it is the most common among older adults. We consider civic engagement on both the national and local levels. Previous studies on social media's impact on civic engagement have not clearly differentiated these levels. Whether civic engagement is at the national or local level will determine the type of resources needed (Trounstein, 2009). Given the political, economic, and social context, and physical, cognitive, and social conditions and capacities of older adults, it is necessary to distinguish whether civic engagement is at the national or local level. The distinction between these levels is particularly important because the amount of communication resources and social capital older people have for different levels (e.g., national, and local levels) may affect the relationship between their social media use and civic engagement. Particular for the current study, it remains unclear whether SMD is more closely related to national-level civic engagement (e.g., showing interest in and expressing opinions about national issues, participating in protests on national issues, and so on) or to local-level civic engagement (e.g., being interested in local issues, engaging in local organizations, participating in local activities, and so on). By differentiating the levels of civic engagement, we can develop a better understanding of social media's impact on civic engagement among older adults.

Social Media Use and Civic Engagement among Older Adults

Few studies have focused on social media use among older adults and its influence on their civic and political participation. Rooted in the literature on the relationship between internet use and civic engagement (McLeod et al., 1999; Norris, 1996; Pasek et al., 2006) and taking cues from cases of urban protest that have been at least partially facilitated by social media (DeLuca et

al., 2012; Tufukci & Wilson, 2012; Valenzuela et al., 2012; Wolfsfeld et al., 2013), social media use has been examined in terms of whether and how it affects political, civic, and community engagement (Campbell & Kwak, 2010; Ellison et al., 2007; Jun, 2018; T. Kim et al., 2016; Zhang et al., 2010). However, few studies have closely investigated a sample of older adults to determine whether and how social media use is related to their civic engagement. That is, respondents in most previous studies were younger than 65 years old and even when older respondents were included, they comprised a small proportion of the total. This is due to at least two reasons: first, until recently, there have been relatively few older-adult social media users, and this is especially true for the earlier studies cited; second, many of these studies focused on types of political and civic engagement that tend to be more common among younger people than the older population (e.g., urban protests rather than voting).

There are at least two new important trends in Korea that should be noted regarding the relationship between older adults' social media use and civic engagement: a significant increase in social media use, and an intensification of active political engagement, including street protests, among older adult citizens. First, social media use among this group has increased dramatically in recent years. This should be seen as contradicting the traditional view, namely, that older adults are considered to fall on the wrong side of the digital divide (Millward, 2003; Niehaves & Plattfaut, 2014; Paul & Stegbauer, 2005). For instance, they have been less likely to both access new information and communication technologies and possess the necessary skills for using them than their younger counterparts (Czaja et al., 2006; Kiel, 2005). Recently, however, it seems that Korean older adults have caught up with their younger counterparts regarding smartphone and social media use. According to a report by the Korea National Information Society Agency (2022), 96.8% of Koreans in their 60s and 67.9%

of those in their 70s were smartphone users in 2021. Even among those in their 70s, the number of smartphone users has increased more than 10-fold over the last five years. Moreover, instant messaging services were reported to be used by 97.0% of smartphone users in their 60s and by 89.1% of those in their 70s and older.

The second notable trend is that of the changing patterns in political and civic participation, at both the national and local neighborhood levels, among older adults in Korea. At the national level, there has been a general pattern among the older demographic to take a greater part in institutionalized civic engagement, such as voting, and to participate less in non-institutional action, such as street protests (J.W. Kim & Hur, 2018; Y. Min, 2019). However, this pattern has recently changed (Y. Min, 2019). A higher proportion of older citizens have begun participating in directly expressive actions than before, especially after the 2016 impeachment of former President Park Geun-hye, who had been supported by the majority of older adults in Korea. At the time, the impeachment prompted conservative senior citizens to express their political frustration and humiliation more actively and directly, and many times over, in street protests (J. W. Kim & Hur, 2018). At the local level, older citizens are more likely to be involved in local issues and to participate in local activities than younger residents (DeSantis & Hill, 2004; I. S. Kim & Jang, 2004; Kwak, 2005). In fact, recent data collected in Korea have shown that this remains the case in major Korean cities (Bae & Park, 2016; S. Y. Min & Lee, 2014; D. S. Park & Nam, 2015).

In this study, we differentiate and address issues of older adults' civic engagement at the national and local levels. Previous studies on social media use and civic engagement (which have focused mostly on younger populations) have not clearly considered the difference between these levels; some have addressed the impact of social media on civic or political engagement only at the national level (Bennet & Segerberg, 2012; Gil de

Zúñiga et al., 2012; Loader et al., 2014; J. S. Min, 2012; Song et al., 2016), while others have placed attention solely on the local level (Chen et al., 2012; Ellison et al., 2007; Firmstone & Coleman, 2014; Haro-de-Rosario et al., 2018; Kang, 2016; Y. C. Kim & Ball-Rokeach, 2006b; Y. C. Kim et al., 2019; Mosconi et al., 2017). We develop two parallel research questions to guide our inquiry into the impact of social media on civic engagement at the local and national levels among Korean older citizens.

At the national level, we analyze the relationship between social media use and civic engagement among older adults, including active political participation. As indicated before, only a few studies have directly evaluated the issue with an older adult sample (Y. C. Kim et al., 2019; K. J. Lee & Lee, 2018). One of these few studies, K. J. Lee and Lee (2018), showed that the use of instant messaging services like Kakao Talk by over-70 female seniors was positively related to their participation in public discussion of important, national-level political issues. E. J. Kim (2019) also demonstrated that Korean older adults actively used Kakao Talk to discuss political issues. However, as already mentioned, the relationship between this group's social media use and their national-level political participation remains largely understudied. Furthermore, how older adults' social media use is related to their civic engagement at the local level has received even less attention. Many previous studies that sample younger demographics have found that social media use positively impacts local-level civic engagement (Gil de Zúñiga et al., 2012; Y. C. Kim et al., 2019; S. H. Lee, 2014). However, it is unclear whether these results can be extrapolated for older adults.

Communication Infrastructure Theory and the Social Media Dependency Model

The present study on the impact of social media use on national- and local-level civic engagement among older adults is theoretically guided by,

and been built on, the SMD model (Y. C. Kim & Jung, 2017) and CIT (Y. C. Kim & Ball-Rokeach, 2006a). The SMD model was developed to explain cognitive, affective, and behavioral effects of social media dependency. In the SMD model, social media dependency was defined as the extent to which an individual considers social media as important resources for achieving critical everyday goals (e.g., understanding, orientation or play). It should be understood as the structural, power-dependency relationship that individuals have with social media in their everyday lives. If social media dominate the information and social resources that individuals need to fulfill everyday goals, individuals would be more likely to be dependent on social media and the power of social media would increase in affecting cognitive, affective, and behavioral aspects (Ball-Rokeach, 1998). Social media dependency is not fixed but dynamic and fluid. As a dynamic structural relationship between individuals and social media, social media dependency should not be confused with addiction or pathological overuse of social media. It is possible for one to have a high level of social media dependency without much social media use.

One of the SMD model's theoretical propositions is that social media dependency positively affects post-exposure behaviors (i.e., behaviors after exposure to the messages on social media), including civic actions for both national- and local-level issues (Y. C. Kim & Jung, 2017). This proposition is based on the original MSD theory (Ball-Rokeach, 1998) that explained the connection between media system dependency and access to resources needed to achieve various critical goals. Central to MSD theory is the concept of examining the dynamics of various components within a system by examining the "relationship" between components (W. K. Park, 2013). An approach posits that higher media system dependency would be not only a channel for the power of mass media over individuals, but also a channel for individuals to having access to resources for various life goals including taking

collective actions for collective goals. Following this proposition, the SMD model suggests that if levels of social media dependency increase among older adults, their civic engagement for both local and national issues would also grow, based on the recent trend of social media becoming important channels that older citizens rely on to obtain information on national politics (Allcott & Genzkow, 2017; Bode, 2016; Ceron, 2015; Gil de Zúñiga et al., 2012; Tang & Lee, 2013) and local issues (Elareshi et al., 2014; McCollough et al., 2017; Rosengard et al., 2014; Sutton et al., 2008).

Next, our conceptualization of civic engagement is guided by CIT. Previous studies using CIT have presented multi-dimensional approaches to civic engagement that include an assessment of motivation (interest in issues or a perceived sense of belonging), efficacy (political or collective), and action (institutional or non-institutional; formal or informal). For example, Y. C. Kim and Ball-Rokeach (2006a, 2006b) described civic engagement as being comprised of three dimensions: neighborhood belonging, collective efficacy, and civic participation. Studies based on CIT posit that an individual's access to community storytelling resources, including those that can be accessed via social media (Y. C. Kim & Shin, 2016), can increase opportunities for civic engagement (Y. C. Kim et al., 2019).

The current study is most directly influenced by Y. C. Kim et al.'s (2019) work. Combining SMD and CIT to assess a sample of Seoul residents, Y. C. Kim et al. (2019) found that SMD levels significantly affect civic engagement at the local community level (i.e., community engagement). Following CIT, they examined four outcomes of community engagement: neighborhood belonging, two collective efficacy variables (informal social control and social cohesion), and community participation. They found that SMD was positively associated with all community engagement variables. In particular, they identified that closed social media (e.g., Kakao Talk) were more likely to promote community engagement

than open platforms (e.g., Facebook). Generally, following this work, we also assessed multi-dimensional civic engagement, including the dimensions of motivation (interest in national politics or local community issues), efficacy (national-level political efficacy or local-level collective efficacy), and action (institutional and non-institutional actions, at both national and local levels). Combined with the theoretical proposition of social media dependency model as explained earlier, we can hypothesize that SMD would help older adults have better access to resources for motivation, efficacy, and action for civic engagement.

The type of resources varies depending on whether civic engagement occurs at the national or local level. Given the complex interplay of political, economic, and social contexts for older adults, as well as the physical, cognitive, and social characteristics of them, it is crucial to distinguish the levels of civic engagement. This distinction between national and local engagement is of particular importance because of its potential influence on the relationship between older people's use of social media and their civic engagement. While Y. C. Kim et al. (2019) focused only on local-level civic engagement, we included national-level political participation as well. In addition, while the sample used by Y. C. Kim et al. (2019) was limited to only those younger than 60, we examined SMD's impact among older adults (people older than 65) on both national- and local-level civic engagement; we then compared the two levels of SMD effects. The following two hypotheses and one research question were derived from the discussion presented above.

H1: SMD among older adults is positively associated with national-level civic engagement.

H2: SMD among older adults is positively associated with local-level civic engagement.

RQ1: Does SMD among older adults impact national- and local-level civic engagement differently?

METHOD

Data Collection

We conducted in-person survey interviews of 330 Kakao Talk users aged 65 or older living in Korea, between August 3 and September 5, 2019. Our cutoff age was 65 because this group is legally defined as ‘older adult citizens’ in Korea, according to the Senior Citizen’s Welfare Act. This act made those over 65 eligible to receive social welfare benefits, including a national pension, free public transportation, and access to welfare centers. The United Nations also uses 65 as its cutoff age for defining the older adult population. Because this study tests the effects of Kakao Talk, the most popular instant messenger service among Korean older adults, only Kakao Talk users were included as participants.

We recruited respondents from four welfare centers and four older adult citizen communities located in two major cities in Korea: Seoul and Daejeon. Both Seoul and Daejeon are politically mixed: neither conservative parties nor liberal ones can claim ownership of the cities. To recruit respondents, we first contacted welfare centers and older adult citizen centers in these two cities by telephone, followed up by letters requesting their cooperation. Among 36 of centers contacted, 8 showed a willingness to collaborate with us. We then set up a booth in the participating centers and invited older adults to participate in the study. Those who participated in the survey were offered small gifts, which were allowed by the center’s regulations and preferences. We also gave detailed instructions for taking the survey to those willing to participate. They were informed of the potential benefits and harms of participation and their right to quit at any time. A copy of the survey

questionnaire was handed out to each participant. Respondents were then asked to fill out the questionnaire themselves at their respective centers. While they filled out the survey, we stayed with them. When a participant had a problem with reading or understanding a questionnaire item, either due to illiteracy or vision problems, we read the questions out loud for him or her. Each interview took about 10 minutes, on average.

A total of 330 people participated in the survey. After we excluded the cases that did not meet the selection criteria (e.g., respondents who were younger than 65 or those who do not use Kakao Talk) and those with answers that were incomplete or inappropriate, we had 280 valid responses; among these, 148 (52.9%) respondents were women, and 132 (47.1%) were men. The average age was 75.14 ($SD = 5.73$) and the age range was 65 to 93, broken down as follows: 65 to 69 (15.7%), 70 to 74 (32.9%), 75 to 79 (31.8%), 80 to 84 (12.1%), and 85 and older (7.5%).

MEASURES

Independent Variables

Social Media Dependency. We developed a Kakao Talk dependency measure as service-specific SMD by modifying an existing SMD scale (Y. C. Kim & Jung, 2017). The number of items in the scale was reduced from 21 (with three in each of the seven dimensions) in the original SMD scale to 14 (two items for each of the same seven dimensions) to reduce participants’ cognitive burden. When selecting the smaller list of items, we referred to the inter-item correlation results from previous research. Responses to all items in our study used a 5-point Likert scale, as follows: 1 = *Not useful at all*, 2 = *Not useful*, 3 = *Neutral*, 4 = *Useful*, and 5 = *Very useful*. The mean value of the 14 items was calculated and used for analysis (Cronbach’s $\alpha = .82$, $M = 3.69$, $SD = .69$).

Civic Engagement at the National Level

National Political Interest. Our measure of interest in national politics was developed for this study based on the scale used in J. S. Min (2012). Our measure included three items that described respondents' interest in national politics and policies, lawmakers' political activities, and presidential and general elections. Each item was measured on a 5-point Likert scale, where 1 = *Not at all interested* to 5 = *Extremely interested*. The average score of the three items was calculated and used for the analyses (Cronbach's $\alpha = .82$, $M = 3.55$, $SD = .96$).

National Political Efficacy. To measure political efficacy at the national level, we used the two items: "My vote has a significant impact on election results" and "I understand important political issues" (Jung et al., 2011; Kenski & Stroud, 2006; Y. Min, 2019). The respondents assessed these items on a 5-point Likert scale, where 1 = *Absolutely disagree* to 5 = *Absolutely agree*. The average score of the two items was calculated and used for the analysis ($r = .40$, $M = 3.94$, $SD = .76$).

National Political Participation. A measure for participation in national-level political activities was developed by modifying previous studies (Y. C. Kim & Ball-Rokeach, 2006b). It included items describing participating in gatherings and meetings related to national politics, volunteering, signing petitions, commenting on issues (both online and offline), fundraising for groups and gatherings related to national politics, and voting in national elections. A total of six activities were presented, we counted the number of such activities in which each respondent participated ($M = 2.00$, $SD = 1.80$).

Civic Engagement at the Local Level

Local Community Interest. We measured local community interest by modifying the scale used in J. S. Min's (2012) study. We included three items covering interest in local issues, policies, and events. Each item was measured on a 5-point

Likert scale, in which 1 = *Not interested* to 5 = *Very interested*. The mean value of the three items was calculated and used for the analyses (Cronbach's $\alpha = .82$, $M = 3.59$, $SD = .88$).

Collective Efficacy for Local Community Issues.

In relation to local community issues, collective efficacy can be defined as the individual's belief that other people living locally would be willing to participate in solving local problems (Y. C. Kim & Ball-Rokeach, 2006a). Previous CIT studies (e.g., Y. C. Kim & Ball-Rokeach, 2006b; Y. C. Kim et al., 2019) used Sampson and colleagues' two-dimensional measure of collective efficacy: informal social control and social cohesion (Sampson et al., 1997). We adopted them in this study as well. The measure we used for informal social control consisted of five items (Y. C. Kim et al., 2019), including "If there is a safety issue that makes people worry about walking at night in your neighborhood, how many of your neighbors participate in activities to solve this problem?" and "When a factory that may emit harmful substances is about to be built in your neighborhood, how many of your neighbors would participate in activities to solve this problem?" The responses to each item were measured using a 6-point scale, where 1 = *No one would participate*, 2 = *Few people would participate*, 3 = *Less than half would participate*, 4 = *More than a half would participate*, 5 = *Nearly everyone would participate*, and 6 = *Everyone would participate*. The average of the five items was calculated and used for the analyses (Cronbach's $\alpha = .88$, $M = 4.37$, $SD = 1.02$).

Local Community Participation. We measured local community participation by asking respondents whether they had participated in any of the following local community activities: attending neighborhood meetings, volunteering, signing a local petition, discussing local issues with others (both online and offline), donating to local causes, and voting in local elections (Y. C. Kim & Ball-Rokeach, 2006b; Y. C. Kim et al., 2019). Respondents answered yes or no for each. A total of six activities were presented, we counted

Table 1. Result of Hierarchical Regression Analyses

	National political interest	National political efficacy	Local community interest	Local community efficacy
Step 1. Control variable				
Age	0.01 (0.01)	-0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Gender (male)	0.13 (0.12)	0.07 (0.09)	-0.11 (0.10)	0.48 (0.12)**
Education level	0.13 (0.06)*	0.07 (0.05)	-0.02 (0.05)	0.02 (0.06)
Monthly income	0.03 (0.04)	0.06 (0.03)	0.14 (0.04)***	0.02 (0.05)
Politics orientation	-0.09 (0.03)*	-0.06(0.02)**	-0.01 (0.03)	0.02 (0.03)
Social media use frequency	-0.05 (0.05)	-0.01 (0.04)	-0.01 (0.05)	0.06 (0.05)
Active group chat room	0.14 (0.05)*	0.03 (.04)	0.06 (0.05)	0.02 (0.06)
R ²	.10	.09	.06	.09
Step 2. Social media dependency				
Social media dependency	0.26 (0.09)**	0.35(0.07)***	0.29 (0.08)*	0.45(0.10)***
ΔR ²	.03	.08	.07	.07
Total R ²	.13	.17	.10	.16

Note. Table values are unstandardized ordinary least squares regression coefficients. Standard errors are given in parentheses. N = 280. *p < .05. **p < .01. ***p < .001.

the number of activities in which each respondent participated ($M = 2.25$, $SD = 1.90$)

Control Variables

We added several socio-demographic factors, such as gender, age, education, income, and residential location as control variables in all the analyses we conducted. The political orientation was measured also as a control variable on a conventional 5-point scale (1 = *Extremely conservative*, 5 = *Very liberal*). Its mean was 2.44, which means that our sample is somewhat conservative). This variable was also statistically controlled. We also used two other variables related to Kakao Talk use as control variables: Kakao Talk use frequency and the number of Kakao Talk group chat rooms joined.

RESULTS

The first hypothesis proposed that SMD would be positively associated with national-level civic engagement variables, such as political interest,

political efficacy, and political participation. As shown in Table 1, social media dependency was positively associated with both national-level political interest, $b(SE) = 0.26(0.09)$, $p = .001$, and national-level political efficacy, $b(SE) = 0.35(0.07)$, $p < .001$.

However, as shown in Table 2, social media dependency was not significantly associated with national-level political participation. Thus, Hypothesis 1 was confirmed for national-level political interest and political efficacy, but not for national-level political participation.

The second hypothesis concerns the association between social media dependency and local-level civic engagement variables (local community interest, local community collective efficacy, and local community participation). The results presented in Tables 1 and 2 show positive associations for all of the local-level civic engagement variables: community interest, $b(SE) = 0.29(0.08)$, $p = .038$, collective efficacy, $b(SE) = 0.45(0.10)$, $p < .001$, and community participation, $b(SE) = 0.51(0.18)$, $p = .005$. Hypothesis 2 was therefore confirmed for all of local-level community

Table 2. Results of Generalized Ordinal Logistic Regression Analyses

	National political participation		Local community participation	
	<i>b</i> (SE)	Wald χ^2	<i>b</i> (SE)	Wald χ^2
Age	0.02 (0.02)	0.83	0.01 (0.02)	0.35
Gender (male)	0.08 (0.22)	0.12	-0.15 (0.22)	0.46
Education level	0.07 (0.11)	0.35	0.02 (0.11)	0.04
Monthly income	0.06 (0.09)	0.46	0.15 (0.09)	2.66
Politics orientation	-0.07 (0.06)	1.46	-0.05 (0.06)	0.85
Social media use frequency	-0.16 (0.10)	2.20	-0.26 (0.11)*	5.63
Active group chat room	0.23 (0.10)*	5.15	0.15 (0.10)	
Social media dependency	0.15 (0.17)	0.75	0.51 (0.18)**	7.87

Note. Standard errors are in parentheses. *N* = 280. **p* < .05. ***p* < .01. ****p* < .001.

engagement variables.

Our research question investigated whether national-level civic engagement or local-level civic engagement would be more strongly associated with social media dependency among older adults. To answer this, we compared the regression coefficients of social media dependency for the parallel dependent variables between local community interest and national political interest, between local community collective efficacy and national political efficacy, and between local-level civic participation and national-level political participation. We did not find any significant differences between the regression coefficients for local community interest and national political interest or between those for local community collective efficacy and national political efficacy. However, we did find a significant difference between the regression coefficients for local-level civic participation and national-level political participation. Social media dependency was significantly related only to local-level civic participation but not to national-level political participation, and their differences were statistically significant ($z = 5.87, p < .001$).

DISCUSSION

This study investigated whether SMD (measured as Kakao Talk dependency) among older adults in Korea would affect civic engagement differently at the local and national levels. In survey interviews with respondents aged 65 and older, we found that SMD was associated with all of the civic engagement variables at both the local- and national-levels, except for national-level political participation. There were no significant differences in the degree of SMD influence between national-level political interest and local-level community interest or between national-level political efficacy and local-level collective efficacy. However, we did find a significant difference between national-level political participation and local-level civic participation, in terms of the degree to which they were influenced by SMD. Additionally, SMD was significantly and positively associated with local-level civic participation but not with national-level political participation. A summary of these results is presented in Table 3.

These results have several theoretical and practical implications. First, the current study's findings support the SMD model (Y. C. Kim & Jung, 2017). Y. C. Kim and Jung (2017) suggested

Table 3. *Summary of Results*

	Interest		Efficacy		Participation	
	NP	LC	NP	LC	NP	LC
Social media dependency effects	Significant	Significant	Significant	Significant	Not Significant	Significant
Coefficient comparison	Not significantly different		Not significantly different		Significantly different	

Note. Coefficient comparison tests were conducted with the following formula:

$$Z = (b_1 - b_2) / \sqrt{(SEb_1^2 + SEb_2^2)}. \text{ See Paternoster et al. (1998).}$$

that SMD would be positively associated with online and offline storytelling actions for issues relevant to social media users. Similarly, Y. C. Kim et al. (2019) found that SMD positively impacts storytelling about community issues and civic engagement (neighborhood-level collective efficacy and civic participation). By demonstrating the significant positive relationship between SMD and political participation for both national- and neighborhood-level issues among older Korean adults, the current study largely echoes Y. C. Kim et al.'s (2019) work and other previous works (Bakker & Dekker, 2012; Ellison et al., 2007; Enjolras et al., 2013; Gil de Zúñiga, 2012; Hargittai & Sahw, 2013; Skoric et al., 2016; Tsai & Men, 2013; Valenzuela et al., 2009). The results of the present study suggest that, in the current media environment, SMD can be a useful tool for older adults' active civic engagement, not only at the local level but also at the national level. However, several issues remain that need to be explored to understand the process more fully: for example, we have yet to investigate the real mechanisms (e.g., providing information, action plans, or social networks) through which SMD affects civic engagement at both local and national levels. Moreover, it needs to be assessed whether there are specific types of civic engagement activities that are more closely related to SMD than others, and whether issue specific SMD or general SMD (used in this study) is more suitable for theorizing the relationship between SMD and civic engagement.

Second, our outcomes are generally consistent with those of previous studies, which have found

that media use positively effects civic engagement (Enjolras et al., 2013; Pasek et al., 2006). As with previous work on adolescents (Farnham et al., 2012; Lenzi et al., 2015) and younger adults (Gil de Zúñiga et al., 2012; Jiang & Li, 2018; Y. Kim et al., 2013; S.H. Lee, 2014; Loader et al., 2014), we demonstrated that SMD appears to promote older adults' civic engagement in relation to both national-level (Goerres, 2009; Y. Min, 2019) and local-level issues (DeSantis & Hill, 2004; Kang, 2013). Our results suggest that older adults in Korea receive and share information on national and local topics through Kakao Talk; its use seems to increase interest levels in national and local issues among them, in similar ways to its effect on their younger counterparts (M. Lee et al., 2017; Seol, 2018). The study's outcomes also show that social media use does more than simply increase older adults' interest in national or local issues; it also strengthens their perceived efficacy to change the situation. In other words, our results indicate that sharing news and information regarding national and local issues through Kakao Talk boosts the political and collective efficacy of older adults at the national and local levels. Older adults' social media use could bolster their confidence in being agents of change in both national and local contexts.

It is important to grasp the generational experiences shared among older adults in Korea to understand the findings about the relationship between SMD and civic engagement. This demographic has often been marginalized in Korean public life, at both the national and local levels, and their social role and status have

likewise dramatically diminished, at least in part because of the decline in importance of traditional Confucianism as Korean society has modernized, thus ceasing to emphasize respect for older adults. Koreans who are now 65 and older share a history of early-life adversity, having witnessed Japanese colonial rule, the Korean War, and the severe poverty of the 1950s, as well as the successful rapid industrialization and economic development of the country between 1960s and 1980s. Many older Korean adults complain that the younger generation does not appreciate their sacrifice, hard work, and achievements. These sentiments are often accompanied by feelings of disappointment and frustration, which were often shared face-to-face in small peer groups before social media were used. As SMD has increased, older adults have become better connected to one another in new ways and can now share their common feelings much more easily. In addition, thanks to social media, they have often developed confidence or a sense of self-efficacy that they can work together and do something for their national and local communities.

The third point worth highlighting is that SMD influences local-level participation more strongly and consistently than national-level political participation. This may be relatively easy to understand: local communities are geographically closer to older adults, and local issues, events, or meetings are more familiar and more relevant to them than national ones. Therefore, it is less difficult for this demographic, including those with physical challenges and limitations, to participate in local activities than to in national-level political activities. Furthermore, it may not always be easy for older adults to participate in national-level activities, such as street protests. Indeed, the results of the current study affirm that SMD may be insufficient for facilitating national-level political participation. Other conditions should also be satisfied for older adults' participation in national-level political activities, such as organized mobilizing efforts (Leighley,

1996), institutional membership (i.e., party membership, Allern & Pedersen, 2007; Djupe & Grant, 2001), systemic social support (Hays & Kogl, 2007; McClurg, 2003), and individual-level physical health and motivation (Burden et al., 2017). Previous studies on social media use and political participation (e.g., Skoric et al., 2016) has not been able to make this point with clarity and sophistication, primarily because they have not differentiated levels of participation (national vs. local) and have not focused on older adults, which we attempted to do in this study.

Fourth, our results suggest that social media has the potential for being used as localized ICTs (Y. C. Kim & Shin, 2016; Y. C. Kim et al., 2019) in urban neighborhoods, even among older adults. Described in CIT terms, social media platforms, such as Kakao Talk, can be developed into a resource for older adults' participation in local storytelling. Previous studies have shown that older age is a positive factor in local civic engagement. This age group has traditionally played a crucial role in maintaining local knowledge, local memories, local ties, and place-based communities, even in the fast-changing urban neighborhoods of metropolitan cities like Seoul and Daejeon. This study shows that Korea's older adults may be able to continue to play the roles of local storytellers with the help of new digital tools, such as social media platforms.

However, several questions remain unanswered regarding older adults' social media use as a facilitating factor in local community participation. For example, one question could be: what would be good strategies for using social media to effectively increase the awareness of local issues among older adults?; in a polarized online media environment, what would be helpful ways to meet and discuss neighborhood issues on social media platforms (potentially as part of the community public sphere) for those with different political orientations and opinions?; what would be effective strategies for connecting older and younger residents through social

media; and how could social media platforms be designed better to help older adults meet others with different opinions, orientations, lifestyles, and digital literacy levels to work together for their neighborhoods?

In addition to its contribution to the established literature, this study has some limitations. First, we recruited people aged 65 and older and treated them as one homogenous group. However, even within this demographic, there may be significantly different age cohorts, both in terms of technology use and civic engagement. Although we controlled for age in each of the analyses, future studies may need to investigate possible cohort effects, even among older adults regarding SMD effects on civic engagement, both at the national and local levels. Second, the data were collected through convenience sampling with the help of institutions for seniors located in Seoul and Daejeon. These results cannot be generalized: it remains to be asked whether similar results could be obtained for older adults who do not attend senior facilities, and for those who live in other cities, either inside or outside Korea including other Asian countries. This inquiry could be especially important for countries with different levels of ICT infrastructure and use patterns (the level of ICT infrastructure and ICT use in Korea are at the forefront, worldwide) and the traditions, opportunities, and restrictions on civic engagement. Even if one were to take the generalization question as resolved, the findings of this study could be taken as the basis for a future investigation of social media use and civic engagement among urban older adults. Finally, we did not address the possibility that national- and local-level civic engagement may influence each other. No overwhelming correlations between national-level civic engagement variables and local-level ones were found in our data, but there may still be some overlap or interaction between the two participation levels (e.g., in locally organized anti-government events or discussions of national issues through a local

church's Kakao Talk group). Future studies may need to consider how these two levels of civic engagement influence each other in older people's lives and how social media may impact the ways in which different civic engagement activities at varying levels interact with each other. Finally, comparative studies focused on older adults from different social contexts and of diverse age groups could increase the external validity of this study.

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Appendix

Social media (Kakao Talk) dependency items

Goals	Items
Self-understanding	To look back on my behaviors
	To know how others reacted when they were in situations similar to mine
Social understanding	To know what is going on in the world
	To know the major current issues in my country
Action orientation	To decide where to get particular services
	To get information on purchasing goods
Interaction orientation	To know how to interact with other people
	To know how to react to others
Solitary play	To find things to do when I am alone
	To have quiet time on my own
Social play	To have fun with my family or friends
	To find things to do with my friends
Expression	To share my thoughts or feelings with others
	To share with others what I know