

Differentiated impacts of SNSs on Participatory Social Capital in Korea

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Abstract

This study investigates whether different SNS with different characteristics have different impacts on participatory social capital in Korea. At least in Korea, SNS are categorized into five types (community, blog, micro-blog, profile-based service and instant message service), and participatory social capital is specified by three types (off-line political participation, on-line political participation, on-line civic engagement). Using Nielsen KoreanClick's web-based survey data, our regression analysis shows that SNS which are more open and focused on information sharing contribute more to participatory social capital.

Keywords: *Participatory social capital, Social Network Sites (SNSs), Community, Blog, Micro-blog, Profile-based service, Instant message service*

1. INTRODUCCION

Social network sites (SNSs) such as Facebook, Twitter, Blog, Kakaostory have been integrated into our daily lives. According to 2015 annual survey from Korean Internet Security Agency (KISA), in Korea, out of the Internet users above age 6, 64.9% have used SNSs in the last 1 year. Out of the SNS users, 90.1% access SNSs at least once a week (51.8% at least once a day) for personal purpose. Boyd and Ellen (2007) define SNSs as web-based services that allow individuals to make public profiles within certain web sites and form and maintain relationships with other users who access their list of connections.

Because of the very nature of SNSs, to support to form and maintain social connections between individuals with lower communication cost, there has been a rising interest in SNSs' implication on social capital. The concept of social capital refer to resources derived from social relationships and interactions: resources such as emotional support, exposure to diverse ideas, access to necessary information and construction of informal norm that promotes cooperation between individuals [1,2]. Social capital, embedded in the structure of social network, is by-products of social connections [3,1]. A person can maintain or extent their social connections using SNSs [4,7,8]. His investments on social networks can create more opportunities and information necessary to solve the collective social problems. Since SNS participants are required to uncover their education, job, and friends to a certain extent, this openness reduces negative

consequences such as abusive and irresponsible communication. As a result, it enhances social capital which represents trust and reciprocal relations among people in a society [5,8]. According to Putnam (2000), social capital can support an efficient democracy by inducing a strong civil society and increasing responsibilities of public sectors [10].

Previous scholarship has addressed relation between SNSs and social capital, typically dealing with a specific site or SNSs as a whole. There is little empirical research that explores whether different SNSs with different characteristics have different impacts on social capital. There are hundreds of SNSs with various tools and interfaces. With diverse technological communication features, the cultures that emerge around SNSs are varied [11]. Using KoreanClick survey data, this study investigates differentiated effects of five types of SNSs on social capital measured by online and offline civic and political engagement.

2. BASIC CONCEPTS

2.1 SNS Types and Attributes

We begin by explaining different types of SNSs. SNSs are a service that helps communications and sharing information through various human network tools on the Web. In a broader sense, SNS include social phenomenon of connectivity based on the web [11]. In Korea, with a rapid evolution of information communications technologies (ICT), there are diverse types of SNS such as community, blog, micro-blog, instant message service and profile-based service¹. Table 1 below lists the five types of SNS and their attributes.

Previous scholarships have compared traditional media with SNSs on several aspects, such as participation, sharing information, openness, communication, interactive relationship, and community. While traditional media relies on the broadcasting, which is a one-way communication for unspecified groups of audience, SNSs can reach broader audience with specific interests. In addition, traditional media has relatively clear separation between content consumers and content producers whereas in SNSs, the two participants are linked together in a way that they are interchangeable. SNS users can be contents consumers, content producers and content distributors at the same time. These multiple roles of SNS users make them a kind of collective and diverse members in social networks.

Table 1. Types of SNS

Type	Attributes
Community (internet café or club)	Group of Internet users who have common interests or similar hobbies to share information and to make relations with each other
Blog	Similar to mini-homepage, but more open to other users. Relatively specialized or objective contents are posted
Micro-blog	A kind of blog. People share thoughts and feelings using a short sentence, like Twitter.
Profile-based service	Services that people can make relations using a profile including open personal information and posted contents, like Facebook , Myspace, and Kakaostory.
Instant message service	Sending real-time text messages, photos, videos bi-directionally between specified known users

¹ These categories are based on the annual survey from the Korea Internet Security Agency (KISA) which has investigated the Internet usage pattern of people in Korea.

2.2 SNS and Internet Collective Action

Mancur Olson (1971) explained the logic behind collective action, which is the famous theory in studies of public sector[13]. He pointed out that a motivation of collective action is in the center of his theory and understood that participants' motivation lies largely on their rational and economic consideration on benefits and costs in collective actions. When the benefit generated by a participant's activity is expected to be greater than the cost, then (s)he is more motivated to participate in. In cases of a grand scale collective action that benefits the society as a whole, there is a lack of motivation due to the probability of free riding. Thus, to decrease chances of free riding, Mancur Olson proposed the concept of a selective incentive, which can only be provided to participants.

Based on his logic, scholars have tried to study theoretical and practical possibility of Internet collective actions of recent political participations using digital equipment and networks on the Web. There are some benefits generated by Internet collective actions, like low transactional costs, bigger chances of voluntary association or community-construction and civic involvement. On the other hand there can be a danger from anonymity and irresponsibility.

In most SNS, including Micro-blogs, a person who wants to link with other users is required to disclose his identity to prevent irresponsible behaviors from anonymity. Moreover, most relationships in SNS are originated from friendships more than shared interests in specific issues; so relationships tend to last longer. In short, SNS are useful tools to solve the dilemma of collective actions when compared to the traditional ones; for example, it has increased efficiency of grouping and stability of relationships.

2.3 Social Capital

Social capital is generated and acquired from social relations. Social capital grows as social trust, collaborative activity, reciprocity, and social norms are accumulated in social interactions[14-16]. Concerning that studies on social capital have focused on 'relations' or 'networks', it is advised to examine interpersonal communications in social capital accumulation. Development and expansion of digital media technology facilitate more flexible and horizontal communications and interactions among SNS users. Thus it is important to investigate the relationship between variation of communications method and social capital.

Studies, which use a network analysis method, put their emphases on 'individual.' Researchers have tried to understand how an individual pursues and maximizes his interest through networking. In this approach, social capital is a kind of outcome made from each individual's efforts to keep relationships within a network, and the social capital can be used as an instrument to maximize personal interests. Criticizing that there is confusion on trust, which has been used as a representative social capital by some scholars, and social norm, Lin et al.(2001) considers social capital as a resources which can be mobilized by people who expect a reward from investments to social relations[17]. On the other hand, other studies take collective action process to understand social capital accumulation. Putnam (1995) argued that social capital entails organizational characteristic, which facilitates coordination and cooperation for mutual interests[18]. Thus a function of social capital is not to simply maximize an individual interest but to promote common interests in a community.

2.4 SNS and Participatory Social Capital

Earlier studies found a positive impact of Internet on social capital and focused on bridging social capital and weak ties [19]. In comparison with bonding social capital, bridging social capital is composed of weak

ties among people from different social background. Many recent studies on social capital are treating SNSs as significant instruments for building relationship among users and providing efficient communication functions which can contribute to greater social capital [4, 19-23]. SNSs are useful in bridging weak ties, because it facilitates forming the extended network [18, 21, 22]. Empirically, prior studies found that some SNSs, like Friendstar and Facebook, can encourage bridging social capital, and some scholar think a recommendation system like 'people you may know' in Facebook and follower list function in Twitter may have to do with bridging. [21, 26].

An individual with better understanding of social issues can participate in discussions and express own opinions on issues. Such deliberate activities are necessary to produce social capital. For example, twitter, which is very popular among young people, emerged recently as an important instrument of communication on social issues, and substantial political participations are often encouraged and led by heavy users. In addition, easy registration process and following-followers system help individuals spread their opinion quickly, form shared public opinions and promote active political participations. Twitter users can send instant messages to their followers in anytime from anywhere. The messages spread through Twitter can have big political and social influence on audience. Hence, SNS, like twitter, play a significant role in generating social capital.

3. LITERATURE REVIEW

Even though a concrete theoretical base is not established, several empirical studies emerged like a trend. Before SNS become popular, Ellison et al. (2007) studied the impacts of Facebook on social capital by measuring students' usage of Facebook in the Michigan State University. They measured the number of users, the amount of time students spent, the number of Facebook friends, etc. They developed indexes to indicate Facebook usage levels and divide social capital into three groups: bridging type, bonding type, and maintained type. According to their result, the higher the Facebook usage level, the greater the social capital (especially bridging social capital) [19]. An interesting point is that students with lower self-esteem and daily satisfaction make better use of Facebook, and these results are closely related to bridging social capital.

Similar to Ellison et al. (2007), Steinfield et al. (2008) studied the relationship between social capital and Facebook usage. They used, however, different research framework; cross-lagged correlation analysis and lagged regression using two-year surveys[4]. The result of research was similar with that of Ellison et al. (2007), and they concluded that using Facebook was helpful to overcome some psychological disorders, which people who were more introverted or had low self-esteem may face when they feel a sense of disconnection from others.

Valenzuela et al. (2009) that examined the relationship between Facebook and social capital conducted a survey on students in Texas in 2007. They divided social capital into three categories: life satisfaction, social trust, and civil and political participation. They also found that there was a positive relationship between Facebook usage and the three types of social capital. The measured influence of Facebook usage, however, was not significant enough to say that Facebook was an effective instrument to increase social capital [5]. Nevertheless, their results contradict the time displacement hypothesis by Putnam (2001), which suggested cyber-pessimism and negative effect of television on social capital.

4. METHOD

4.1 Data

This study uses data from Nielsen KoreanClick's web-based survey, 'Survey on behavior of Internet users on public sector'. The survey was conducted between 31st August 2015 and 15th September 2015. The survey was done under the quota sampling method that considers gender and age of the Internet population. The number of effective survey respondents is 1,617. The survey includes questionnaires on personal identities, SNS usage level, political participation, and civic engagement.

4.2 Measurement

Dependent variable

The dependent variable of this study is participatory social capital, which is composed of on-line civic engagement, on-line political participation, and off-line political participation. To measure the levels of on-line political participation and on-line civic engagement, we sum responses to 4 questions respectively about how often respondents had engaged in the following activities on Table.2 using the internet during past 1 year, using a five-point scale: from '1' meaning 'never participate' to '5' meaning 'frequently participate'. Off-line political participation is measured by adding up responses of 8 questions about experience and willingness to participation in future in stated political activities during the same period, using a four-point scale: '1' meaning 'I have neither experience nor intention to participate in future.'; '2' meaning 'no experience, but having intentions to participate in future.'; '3' meaning 'I have experience, but no intention to participate in future'; and '4' meaning 'I have both'.

Table 2. Statements on questionnaires to measure dependent variables

Variable	Statements
On-line political participation (standard Cronbach's α : 0.86)	① participating in a public opinion poll or a vote on the internet ② participating in on-line discussion about social issues and policies ③ posting opinions (including writing comments), photos or videos about social or political issues on the internet ④ Participating in collective action for social problem solving or public interests (for example, banner for commemoration, campaigns, posting opinions, etc.)
On-line civic engagement (standard Cronbach's α : 0.86)	① Declaring obscene contents (for example, pornography, spam, abusive comments, illegal downloading, etc.) ② Posting valuable information on blogs, homepages, or communities, and answering to a posted question. ③ participating in voluntary activities from Internet ④ donation through Internet (for example, points, mileage, or money)
Off-line participation (standard Cronbach's α : 0.85)	① signing a petition ② participating in a boycott ③ participating in an election campaign ④ participating in a political rally, demonstration, protests or marches ⑤ attempting to meet politicians or officers to solve private or social problems ⑥ participating in donation or fund-raising for a political purpose ⑦ visit or appear on the media ⑧ attending a public hearing or policy debate

Independent variables

This study has five types of independent variables: SNS usage level; personal identity; political and social participation; utilization of the media; digital literacy; socio-economic variables. The usage level is measured by a five-point scale; from '1' meaning 'never use' to '5' meaning 'use every day'.

Table 3. Research Framework and explanations on variables

Variable		Definition and Measurement	
Dependent variable	Participatory social capital	On-line political participation / On-line civic engagement five-point scale	
		Off-line political participation four-point scale	
Independent variable	SNS usage level	Usage levels of SNS in the past year five-point scale	
Control variable	Political orientation	Supporting party	Dummy
		Political leaning	Five-point scale Five-point scale (1 = 'very progressive - 5 ='very conservative')
		Political interest	Five-point scale
		Internal political efficacy ²	Five-point scale
		External political efficacy ³	Five-point scale
		Public service motivation	Five-point scale
		Trust in public sectors	Do you trust in central government, local government, president, congressman, top officers? Five-point scale
		Social trust	Score your trust level on the society out of 100
	Political-social participation behavior	Discussion on political issues	How often do you discuss with friends, colleagues, and family members government and political issues? Five-point scale
		Discussion on community issues	How often do you discuss with friends, colleagues, and family members local community issues? Five-point scale
		Participation in organizations	Five-point scale
		Voting at the local and national elections	Frequency to vote since 2007 presidential election (range 0 to 6)

² Statements in the questionnaire are: ① I am qualified to participate in politics ② I understand political issues enough ③ I think I can do a job of public services as others ④ I think I know about politics or government more than others

³ Statements in the questionnaire are: ① government officers do not reflect citizen's opinion like me ② congressman disregard citizens after being elected ③ political party are interested in only an election, not in citizen's opinions

Control variable	Media usage	Hours spent on Internet	
		Hours spent on TV watching	
	Digital literacy	Internet literacy	Five-point scale
		Usage level of public App.	How often do you use app related to primary government departments? Five-point scale
	Socio-economy variable	Gender	Dummy (0 = female)
		Age	Continuous variable
		education	Under high-school graduate, high-school graduate, undergraduate and graduate student, college graduate (baseline)
		Monthly income	Less than 1 million won (baseline) / 1 million won ~ 3 million won / 3 million won ~ 5 million won / more than 5 million won
		Region	Honam area (baseline), middle area, Younghan area, metropolitan area
		Job	Jobless (baseline), housewife, student, blue-collar, white-collar, self-employed
Marriage	Married(=0), single		

5. RESULTS AND CONCLUSION

Our regression results are reported in table 4. First of all, table 4 indicates that different types of SNS have differences in their impacts on participatory social capital. In the case of online civic participation and online political participation, ‘Micro-blog’ and ‘Blog’ coefficients are larger than the other SNS types’ coefficients except ‘Instant message service’ with negative coefficient.

Table 4. Regression Results

Variables	(1) Online civic participation	(2) Online political participation	(3) Offline political participation
Community	0.0935* (0.0514)	0.0600 (0.0497)	-0.00833 (0.104)
Blog	0.314*** (0.0618)	0.176*** (0.0598)	-0.0797 (0.124)
Micro-blog	0.303*** (0.0710)	0.320*** (0.0687)	0.342** (0.143)
Profile-based service	0.140*** (0.0488)	0.0550 (0.0472)	0.000431 (0.0984)
Instant message service	-0.186*** (0.0497)	-0.184*** (0.0481)	-0.0816 (0.100)
Interest on politic	0.186** (0.0917)	0.355*** (0.0887)	0.840*** (0.185)
Political leaning	-0.101 (0.0801)	-0.255*** (0.0775)	-0.522*** (0.162)
Internal political efficacy	0.00605 (0.0227)	0.0818*** (0.0219)	0.191*** (0.0457)

External political efficacy	-0.0365 (0.0277)	-0.0710*** (0.0268)	-0.0503 (0.0557)
Public service motivation	0.0989*** (0.0227)	0.0718*** (0.0220)	0.196*** (0.0458)
Trust on public sectors	0.0200* (0.0109)	0.000626 (0.0105)	0.00684 (0.0219)
Social trust	-0.00578 (0.00381)	-0.00740** (0.00369)	-0.0162** (0.00769)
Discussion on government	-0.0597 (0.0936)	0.167* (0.0906)	0.217 (0.189)
Discussion on local problems	0.269*** (0.0925)	0.191** (0.0895)	0.607*** (0.186)
Participation in organization	0.124*** (0.0180)	0.102*** (0.0174)	0.524*** (0.0362)
Voting experience	0.0641 (0.0392)	0.0314 (0.0379)	0.175** (0.0789)
Time spending on Internet	0.000513 (0.000400)	0.000198 (0.000387)	-0.000852 (0.000807)
Time spending on watching TV	-0.000293 (0.000588)	-0.000197 (0.000568)	-0.000305 (0.00118)
Internet literacy	0.273*** (0.0293)	0.260*** (0.0283)	0.213*** (0.0590)
Public App. usage	0.133*** (0.0225)	0.148*** (0.0218)	0.0485 (0.0453)
Age	-0.0171** (0.00849)	-0.0151* (0.00821)	-0.00439 (0.0171)
Constant	-0.490 (0.930)	0.975 (0.900)	0.312 (1.875)
Socio-economy dummies	included	included	included
Observations	1,617	1,617	1,617
R-squared	0.448	0.473	0.413

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The result that 'Micro-blog' has a strong relation with online participatory social capital may be due to its attributes: an open system to make relations, wide spreading messages in a short period time through a re-twit function, the accessibility using mobile instruments, and the convenience from using short sentences. 'Micro-blog' has ability to quickly attract the public's attention and amplify information through mobile media. These simplicity and immediacy make it possible easy to produce networked community and to extend communication boundaries. These attributes may encourage users to participate in offline political participation.

On the other hand, 'Profile-based service', such as Facebook and Myspace, turns out to have significant impact only on online civic participation. This seems to be related to Profile-based service' attributes: relatively closed system based on pre-existing personal network, not general users. The case of 'Community', such as internet café, Naverband shows similar results. 'Community' has a relatively closed system, typically based on strong tie between members. Facebook or Community users share more personal experiences rather than civic and political issues.

The impacts of 'Blog' lie between those of 'Micro-blog' and 'Profile-based service'. 'Blog' has similar attributes of 'Micro-blog' in an aspect of openness, which means no permission needed to make connections. However, 'Micro-blog' is more convenient to have short and instant communications while 'Blog' is usually used to post lengthy and reflective contents. 'Blog' now facilitate active communication between bloggers with common interests [31]. Bloggers' network and communication may enhance online participatory social capital.

The impacts of 'Instant message service' on participatory social capital need more scholarly efforts to figure out media traits driving negative effects. 'Instant message service' is real-time communication tools between two individuals rather than social network exchanging information and thoughts about public issues. Heavy 'Instant message service' users may be distracted from civic and political engagement in online daily life [30].

This study used several control variables. Among them, the level of political interests and the public service motivation have positive and significant coefficients to all dependent variables. The internal political efficacy have positive and significant relations with online and offline political participation. The external political efficacy has negative and significant impacts on online political participation. Indicators of the external political efficacy variable are composed of negative statements on politicians and government officers. Hence, low external political efficacy leads low online political participation. One interesting result is that the social trust variable has a negative and significant coefficient on online political participation. Internet users who score high in social trust may have little interest in public issues.

Besides, the level of discussion on local problems and the level of the participation in organizations have positive and significant coefficients on participatory social capital variables. Lastly, the Internet literacy and the public App usage level are also significant to all participatory social capital variables.

Note that our empirical results indicate not causality but correlations between SNS usage and participatory social capital. In order to control possible endogeneity problem, it is necessary to have appropriate instrument variables.

NOTE

Using the latest data, this paper is developed version of "DO DIFFERENT TYPES OF SNS HAVE DIFFERENT IMPACTS ON PARTICIPATORY SOCIAL CAPITAL?" presented in 2012' DEXA conference.

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