Active Citizen E-Participation in Local Governance: Do Individual Social Capital and E-Participation Management Matter?

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Abstract

While a growing body of literature has touted e-participation as a means of facilitating greater citizen participation in policy decision-making processes, little is known about the driving forces behind active citizen e-participation. Based on a literature review of social capital and citizen participation, the study develops a model of active e-participation. In this model, this study argues that three dimensions of social capital and citizen participation management are positively associated with active e-participation. To test several hypotheses, the study uses the 2009 E-Participation Survey data collected from 1,076 participants of the Cheon Man Sang Sang Oasis, an e-participation program administered by the Seoul Metropolitan Government in South Korea. Using ordered logistic regression analysis, the study finds that active e-participation is positively affected by citizens' trust in government, their volunteer experiences, weak offline social ties, and perceived quality responsiveness during the e-participation process.

1. Introduction

As government has widely adopted electronic government (e-government) [14, 39], a growing body of literature has paid attention to e-government as a means of fostering citizen participation in the government agency policy decision-making processes [27, 29, 57]. All levels of government agencies have used various Web technologies to offer various forms of electronic participation (e-participation) applications ranging from simple online voting to online policy forums (e.g. regulation.gov).

However, little is known about the driving forces of citizens' use of e-participation. Why do some citizens more actively use e-participation than others? This is a crucial question because the full potential of e-participation cannot be achieved unless it is actively used by citizens. As discussed later, for analytical purposes, this research examines the e-participation domain as citizen-initiated participation in the phase of policy agenda settings where citizens post their input and views as well as comment on the input of others and government responses.

Citizen participation literature in public administration has offered meaningful insight on why citizens actively use e-participation to engage in policy decision making process. Some focused mainly on the effects demographics and psychological factors of citizen participation [56] while others examined the relationship between citizen participation management and citizens' satisfaction [20]. Although prior studies have developed normative arguments on the importance of citizen participation design principles such as fairness in the participation process [61, 42], a few have systematically examined the role of design principles in affecting citizen participation. Moreover, as discussed later, given the fact that one feature of citizen-initiated e-participation is online community, this research argues that social capital literature can provide a useful theoretical framework to better understand e-participant's behavior.

To fill the research gap, this study develops a model of active e-participation by focusing on the role of individual social capital and e-participation management. To test the research hypotheses, the study uses the 2009 E-Participation Survey data collected from 1,076 e-participants of an e-participation program called Cheon Man Sang Sang Oasis (hereinafter Oasis) run by the Seoul Metropolitan Government (SMG) in South Korea since 2006. The Oasis provides various e-participation services including online polling, online surveying, and online policy forums. This research focuses on one particular type of e-participation service, the online policy forum, which has served as an online community for citizens to participate in policy decision-making processes, especially policy agenda setting processes.

2. E-Participation: Definition and Scope

Scholars in public administration have attempted to define citizen participation and classify it in order to systematically understand its characteristics [1, 30, 37]. First, this research views e-participation as a special type of e-government service in that e-participation is available at government websites or as part of e-government services run by government agencies.

Second, Macintosh [37] refers to e-participation as the use of web technologies to provide information and to support "top-down" engagement, or to foster "ground-up" efforts to empower citizens to gain their support. In this research, we focus on "ground-up" e-participation, which

emphasizes participation initiated by citizens, as opposed to participation initiated by government (e.g. online polls and surveys). The nature of citizen participation varies depending on who takes the initiative of selecting and suggesting a policy agenda discussed during citizen participation processes [67, 57]. Oasis provides both government-initiated and citizen-initiated e-participation services. Government initiated e-participation includes, but is not limited to, online polls, online surveys, and agenda-specific online discussion boards (e.g. regulation.gov). Meanwhile, citizen-initiated e-participation services range from email contact [67] to online policy forums. This research focuses on citizen-initiated e-participation, specifically online policy forums designed to provide citizens with an opportunity to initiate inputs about SMG's public policy and day-to-day operations.

Third, public administration literature has characterized citizen participation as part of policy decision-making processes including policy agenda setting, policy formation, policy implementation, and policy evaluation phases [1, 30]. This research focuses on citizen participation in the policy agenda setting phase because it reflects authentic participation, arguing that participation should be sought, at least in the early stage of the decision-making process, before any decisions are finalized [30].

Lastly, White [62] refers to e-participation as "the use of information technologies to engage in discourse among citizens and between citizens and elected or appointed officials over public policy issues (p. 110)." This definition broadens our understanding about e-participation by incorporating discourse among citizens. That is, e-participation serves not only as a communication channel which e-participants express themselves, but also plays as an online community. Citizen-initiated e-participation often involves a deliberative communication mode in which citizens enjoy many-to-many communications. This implies that e-participants not only communicate with public administrators, but that they also observe, make comments on the input of others as well as respond to the comments of others. Through ongoing and repeated interactions, e-participants, as members of an online community, can build online networks which serve as opportunities or constraints for e-participants to create social ties with others online.

For analytical purposes, this study defines e-participation as e-government applications designed to promote citizen-initiated participation in policy agenda setting and to build online community providing citizens with an opportunity to discuss policy agendas with others and with government agencies. The scope of this research is limited to the online policy forums of Oasis as e-participation run by SMG in South Korea where citizens are allowed to initiate discussion about SMG policy agenda by posting their ideas and making comments to the ideas of others.

3. Theoretical Framework and Hypotheses

Citizen participation has been considered as mechanisms for creating democratic values and instrument values [41]. Considering the working definition of e-participation discussed above, this research reviews and discusses core components of citizen participation in order to develop a model of active e-participation. One stream of citizen participation studies concerns itself with the relationship between citizens' socio-economic background (e.g. race, gender, age, income, education) and their participation in public administration [56, 6]. The importance of individual demographics has received attention by early studies on citizen participation in urban planning and government budgeting process. Some scholars have paid more attention to the role of socio-economic status in citizen-initiated contact [56]. Recently, this stream of research has stretched its focus to understand how socio-economic variables affect e-government visiting as a form of citizen-initiated contact [57].

Another stream of research has focused on individual citizens' psychological factors [16]. The psychological factors include different types of self-efficacy (e.g. political efficacy, internet efficacy), prosocial behavior, needs, and personality. For example, early research on citizen-initiated contact found perceived citizen needs, political efficacy, and social involvement influence citizens' contact of government bureaucrats [56]. In a similar vein, the Technology Acceptance Model (TAM) [15] has been widely applied to understand individual's use of new technologies such as e-participation [27]. Since e-participation relies on web-based applications as a technological platform, the use of e-participation can be understood as a technology adoption by citizens. The essence of TAM is that individual adoption of IT application depends of his or her intention to use that application, their perceived usefulness, and the ease of use of that IT application [15].

The social capital stream of studies was also reviewed. Scholars in social science have mainly studied social capital in the context of local and urban communities [47]. Given the fact that e-participation is viewed as online community, social capital literature helps us identify what factors influence citizens to engage in e-participation. Social capital studies argue that the success of community often depends on the degree of community's social capital (e.g. trust, social networks, and civic norms). Empirical studies have supported that social capital is a crucial asset for all levels of government to implement policies effectively, to provide high quality services, and to make governments' innovation efforts more feasible and legitimate [31, 47, 48, 50]. This line of thought implies that certain characteristics of social capital are related to active e-participation. However, little

is known about the role of individual social capital built in an offline community in promoting citizens' e-participation as a means of shaping online community.

Lastly, the design and management of citizen participation programs has long been discussed among scholars in public administration [42, 61]. Several principles have been identified as critical factors in facilitating citizen participation and managing programs. For example, Webler and Tuler [61] applied Habermas's theory of discourse to understand two broader principles of citizen participation process - fairness and competence – in the context of citizen participation in public policy decisions on forest use in northeastern states. However, a few have systematically and empirically examined the role of design principles in affecting citizen participation.

By focusing on the role of social capital and citizen participation design, this research suggests a model of citizens' active e-participation. Our study asserts that three dimensions of individual social capital (i.e. trust in government, strength of offline social ties, civic norms) are associated with their active use of e-participation. Also, we argue that three components of e-participation management (i.e. perceived fairness of the participation process, access to information, responsiveness) are related to active e-participation.

3.1. Individual Social Capital

Scholars in public administration have often considered social capital as a collective concept. This research, however, discusses social capital at the individual level because it ultimately belongs to individuals [7] and because it views social capital as an antecedent of individual behaviors such as citizen participation [19]. Although there is no clear agreement on the definition of social capital in the literature, many scholars [12, 48] agree that social capital consists of at least three key dimensions: trust, social networks, and civic norms.

3.1.1. Trust in Government

The definition of trust in government varies. Here, trust in government is broadly defined as the extent to which citizens believe that government works in their best interest [10]. When citizens do not trust in government, they are likely to perceive that government policies are harmful, to distance themselves from government, to resist government policies and programs, and to lower their expectations of how government will treat them in the future [28]. Such cynicism toward government tends to decrease citizens' interests in participation in public administration [28, 4].

Meanwhile, citizen's trust in government signals that government will be responsive to their needs and care for their best interests. Also, trust in government reflects citizens' willingness to comply, cooperate, adopt, and support government policies and innovative programs [13, 3]. For example, research found that citizens' trust in government increases the possibility of adopting innovative e-government services [3]. Moreover, when citizens trust government, they are likely to show greater interest in government. Thus, given the fact that citizen-initiated e-participation often requires citizens' commitment to participation in public affairs, their willingness and interest can be expressed as a form of active participation in policy decision-making processes.

Competing arguments are possible. That is, it is likely that trust in government reduces the citizens' demands for monitoring government, which in turn, weakens the strong incentives of citizen participation. This perspective, however, may underestimate various motivations driving citizen participation. As discussed later, citizens are motivated by not only a sense of ownership, but also by social norms of cooperation and prosocial behavior. One may argue that there may be an inverse relationship between trust and participation. That is, it is likely that citizens who actively participate in government put greater trust in government [49]. However, citizen participation may not directly increase trust in government because active participation does not necessarily represent that citizens are supportive toward government. Rather, it is reported that citizen participation negatively affects trust in government [35]. Also, a recent empirical study reveals that there is no direct relationship between e-government use and trust in government, which implies that citizen participation affects trust through the management of citizen participation process [29].

Hypothesis1: E-participants' trust in government is positively related to their active e-participation.

3.1.2. Strength of Social Ties

Social network literature considers social networks as resources in that people can access information, gain social support, and receive recognition through their social networks [21]. In particular, the strength of ties has been discussed to understand the characteristics of social ties [21, 33]. Strength of ties is a multidimensional concept [21]. This study defines tie strength as the extent to which individuals frequently interact with other social groups. Advocates of strong social ties argue that people embedded in strong social networks enjoy benefits in terms of accessing information, exchanging social support, and receiving recognition easily and promptly [33]. However, people connected through strong ties tend to share similar information, face higher dependency, and spend more resources to maintain strong ties [9]. Proponents of strength in weak ties emphasize that weak social ties provide people with an opportunity to access diverse social groups thereby helping them gain nonredundant and new information, to enjoy autonomy, and to manage them with a lower cost [21, 9].

Considering that e-participation serves as online community, this research asserts that e-participants' offline social ties affect e-participation use because offline social ties act as incentives to build online social

ties. E-participants are limited to developing and sustaining strong online ties with others unless they actively engage in online community. Meanwhile, active e-participation offers citizens the opportunity to increase the visibility of their contributions, recognition, reputation, and status [46]. That is, e-participants are seen as active when they post more ideas and comments to others. E-participants receive different forms of social rewards including attention, recognition, and support from peer e-participants, but only when they are actively engaged in e-participation. Frequent exchange of ideas, comments, and responses with other e-participants and government officials helps e-participants build strong online ties.

How does the strength of offline ties affect citizens' use of e-participation? This study argues that strong offline social ties are negatively related to active e-participation. In other words, weak offline ties are positively associated with active e-participation. When people are connected through strong ties in an offline setting, it is likely that they have a limited opportunity to actively use e-participation applications. Early studies found that people tend to spend less time socializing face-to-face when they spend more time online [34, 43]. This finding implies that people who frequently meet in social groups face-to-face may not allocate extra time and energy to commit to e-participation. Meanwhile, weak social ties serve as an incentive to use e-participation actively because weak ties increase the possibility that people will spend less time socializing face-to-face, but more time socializing online. But, spending more time online does not necessarily motivate people to use e-participation actively. It is likely that weak ties offer an incentive to actively use e-participation because active e-participation enables e-participants to build strong online ties. Moreover, e-participants who enjoy the benefits derived from strong offline ties may consider e-participation as a complementary means of gaining added value by building weak online ties. When people are weakly tied with social groups in an offline setting they are likely to reap benefits such as access to new and nonredundant information and lower maintenance cost [21, 9]. Active e-participation, however, provides an opportunity to build strong online ties, which enables e-participants to gain complementary resources (e.g. prompt access to information and social support).

Hypothesis2: E-participants' strong offline ties are negatively related to their active e-participation.

3.1.3. Civic norms of volunteering

Civic norms can be broadly defined as group-held beliefs about how members in civic society should behave in public affairs. This research considers civic norms as socially cooperative behavior (e.g. volunteerism) associated with a more general interest rather than a specific interest associated with a partisan group of people [31]. They can be characterized by a willingness or desire to help others and can be captured by the degree which individuals have affective motives such as volunteerism [16]. As a specific form of civic norms, this research focuses on citizens' volunteering experience. The literature reported a positive relationship between citizens' volunteer experience and political participation [5, 63, 66]. For example, Wilson [63] addresses positive impacts of volunteering on community participation, civic engagement, and opportunities for professional development. Youniss et al [66] also found a positive relation between youth participation in service programs in high school and their engagement in community organizations as adults. Flanagan et al [17] found that high school students who volunteer are more likely to be engaged in a political campaign. Furthermore, Smith [52] finds that participation in extracurricular activities in one's youth is one of significant predictors of greater political and civic involvement in young adulthood.

Scholars address several factors that may facilitate this relationship including the sharing of information [32], the opportunity to develop "civic skills" such as the ability to organize a meeting [60] and the fostering of generalized trust [54]. Moreover, this study argues that citizens' volunteer experience often represents their trait of extraversion, a person's tendency to be social [16], which affects their engagement in online community including e-participation.

Hypothesis3: E-participants' volunteering experience is positively associated with their active e-participation.

3.2. Management of the E-participation Process

Scholars in public administration have paid attention to the importance of design and management of the citizen participation process and asserted that poor design and management of e-participation processes obstructs citizen participation. [30, 61, 23]. For example, Halvorsen [23] found that participants who perceive high quality participation program management assess that the agency in charge of managing the participation program was responsive to public concerns.

3.2.1. Fairness in E-participation Process

Scholars address fairness as one of design criteria measuring the quality and effectiveness of citizen participation programs [61, 42, 11, 24]. For example, based on Habermas's theory of communicative action [22], Webler and Tuler [61] propose fairness and competence as core dimensions of developing criteria of desirable process of public participation. Following their study, this study defines fairness as "the opportunity for all interested or affected parties to assume any legitimate role in decision-making process" [61; p.568]. They offered three dimensions of fairness in the process of citizen participation discourse including fair attendance, fair participation in agenda setting and rule making, and fairness in discussion and debate [61].

Scholars have also analyzed a positive relationship between process fairness and outcome satisfaction and acceptance [2, 25, 51]. Research findings show the

positive impacts of procedural fairness on the institutional legitimacy of governmental authorities [2] as well as increased levels of trust in political systems [51]. Other scholars analyzed the impact of fairness of the citizen participation process on citizen support for government decisions [25] and the impact of the use of fair processes on public trust in public officials [58]. Herian et al [25] finds that the inclusion of public input by local governments can increase perceptions of fairness and that the perceptions of fairness have stronger relationships with overall governmental assessments for those who are relatively uncertain about a governmental institution. Van Ryzin [58] found that the use of fair processes by public servants increased the public's trust in those officials.

The study proposes a positive relation between perceived fairness of e-participation process and citizens' active e-participation. In order to explore the relationship between perceived fairness of e-participation management and citizens' active e-participation, three aspects of fairness in e-participation process are developed in this study— including availability of diverse participation programs, the equal opportunity for stakeholders and citizens to e-participation, the fair process of e-participation decision making.

*Hypothesis 4***:** *E-participants' perceived fairness in e-participation process is positively associated with active e-participation.*

3.2.2. Access to information

One normative argument about the design of the citizen participation process highlights that limited access to government information and its interpretation prohibits citizens from understanding existing government activities such as public policies and day-to-day operations and thus, citizen participation should be designed to grant citizens access to relevant information and its interpretations about government activities in participation process [61, 42]. In a similar vein, advocates of TAM and other scholars imply that the design of e-participation applications must be effective and easy-to-use because the design affects citizens' access to information about the participation procedure as well as government responsiveness [29, 45], which motivates citizens' active engagement in e-participation.

According to the principal-agent model, the relationship between citizens and government is one of information asymmetry [64]. As the principal, ordinary citizens are often less knowledgeable with regard to government activities than government employees as the citizens' agent. When an e-participation process is designed and managed to enhance citizens' ability to access information of government activities, it is likely that citizens are better informed of what and how government agencies perform. Thus, increased access to information minimizes information asymmetry, which reduces uncertainty and ambiguity about government policy and programs. The decreased information

asymmetry can strengthen citizens' capability of understanding government agencies. Knowledgeable citizens are likely to offer useful and helpful suggestions for government agencies to make better informed policy decisions. Thus, it is likely that they make meaningful contributions including posting policy inputs and suggesting ideas about problem identification and solving, and/or innovative proposals. Also, informed citizens are better able to monitor government agencies increasing both the government's commitment to openness and honesty as well as the likelihood that any government deception will be uncovered [65].

*Hypothesis 5***:** *E-participants' perceived easier access to policy information is positively related to active e-participation.*

3.2.3. Responsiveness

During the public participation process, government responsiveness has played a crucial role in shaping citizens' perception and behavior toward participation [30, 36]. For example, research found that citizens' satisfaction with participation programs is determined by government employees' responsiveness to their needs and the quality of feedback for their inputs [23, 36]. As part of management quality, public officials' interpersonal, discourse and facilitation skills have been emphasized as a means of implementing authentic participation programs [30], which require citizens' active participation.

Although e-participation is promising, in some ways, it limits the ability of both government and e-participants to interact with each other interpersonally, to engage in verbal communication, and to facilitate discussion in the e-participation process, compared to conventional citizen participation setting. In this regard, management of e-participation processes plays a crucial role in shaping active e-participation. In the context of e-participation, government responsiveness can be captured by the extent to which public officials provide quality feedback to e-participants' input (e.g. idea submissions) and inquiries. As the nature of citizen participation does not bind government decisions, government bureaucrats have no strong incentives to respond to citizens' input and inquiries in a sincere manner. Insincere responses or no responses from government concerning e-participants' input is likely to decrease their interest in e-participation and their willingness to commit to the community through e-participation. As a result, this lack of interest and willingness to participate discourages e-participants from e-participation actively.

Meanwhile, it is likely that sincere responses from e-participation management reinforces e-participants' interests in e-participation and their willingness to engage in e-participation by facilitating their commitment. That is, e-participation management's quality responses promote e-participants' self-esteem by enhancing the sense of importance within and identification with the community [55]. Increased identification often creates a sense of civic

duty by motivating the participant to take more interest in community issues. Also, e-participants who receive quality feedback from government officials are likely to perceive that they gain useful policy information that helps them better understand community issues and in turn, contribute to community building. Moreover, online community literature found that quality responsiveness often motivates e-participants to stay longer and to participate in the online community frequently [38].

*Hypothesis 6***:** *Perceived government responsiveness via e-participation programs is positively associated with e-participants' active e-participation.*

4. Data and Measurement

To test research hypotheses, this study used the 2009 E-participation Survey data collected from the citizen members of the Oasis. As of June 2009, 34,792 citizens had joined Oasis. From this population a sample frame of 10,136 citizen members of Oasis who have posted at least one suggestion over the last three years was created. A web-based survey was administered for four weeks in May and June in 2009.

Of 10,136 members, 1,076 participants responded to the survey (response rate of 10.6 percent). Because of low response rates, non-response bias test was performed to see if there is difference in demographics between respondents and non-respondents [40]. The results show that the respondents and non-respondents were not significantly different in terms of age, gender, and education.

4.1. Dependent variable

Active e-participation. As a measure of active e-participation, this research employed the number of suggestions posted on the Oasis as a measure of active e-participation. The survey participants were asked to indicate the extent to which they posted their suggestions on Oasis using five ordered categories ranging from "1-2 suggestions" (1) to "More than 10 suggestions" (5).

4.2. Independent variables

Trust in government. The measure of citizen trust in government was derived from prior research [29, 26]. Trust in government is measured by a single survey item rated on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5); "To what extent do you trust that SMG works in your best interests?" Although the single item is limited to capturing various dimensions of citizen trust in government, it allows us to broadly understand the respondents' level of trust in government.

Tie strength. To capture e-participants' strength of social ties, this study used respondents' self-reporting on the frequency of going out with people for socialization. Respondents were asked to indicate how often they go out with five different groups of people (i.e. family members, neighbors, friends, co-workers, and members of social groups) for socialization (e.g. having lunch). Five items were designed with a 7-point Likert-type scale ranging

from "Every Day" (1) to "Once a Year" (7). The average scores of the five items were used in the analysis (Cronbach's α=.67).

Social norms. The respondents' volunteer experience is used to measure social norms [8]. The respondents were requested to indicate how often, on average, they have been involved in volunteer work for the past three years. This item was rated on a 7-point Likert-type scale ranging from "Never" (1) to "Every Day" (7).

Fairness in e-participation process. This research used four survey items to measure respondents' perception of fairness in e-participation processes [61, 25]. The participants were asked to indicate the extent to which they agree with the four survey items using a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The mean scores of the four items were used in the analysis (Cronbach's α =.76).

Access to information: The measure of access to information was adapted from citizen participation literature [61, 25]. To measure e-participants' perception of access to information, this study used four survey items with 5-point Likert scale (Cronbach's α =.83). These items were summed and averaged into an index.

Responsiveness. Responsiveness is measured using the three items representing the respondents' perception of quality feedback offered by SMG. The mean scores of the items were used (Cronbach's α =.82) in the analysis.

4.3. Control variables

TAM variables. Two TAM related variables - intention to use and perceived usefulness - were included as control variables [15]. The intention to use and perceived usefulness are found to be associated with acceptance of new IT applications [59]. By modifying Davis's TAM scale [15], we used one item to measure citizens' intention to use e-participation and seven items to capture respondents' perceived usefulness. The seven items for perceived usefulness were summed and averaged into an index (Cronbach's α =.89).

Psychological factors. To control the effect of e-participants' psychological factors, three variables were included. Political efficacy refers to e-participants' perceptions of influence on governmental decision making. As a political reward, political efficacy serves as incentives for active participation in public affairs [30]. To measure political efficacy, we used the four items using a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The average scores were used in the analysis (Cronbach's α =.83). This research used the length of Oasis membership as a proxy for capturing Internet self-efficacy. It is assumed that e-participants who joined the Oasis since 2006 might be equipped with greater Internet skills necessary to use the Oasis. The item was scaled from 4 years (1) to less than 1 year (4). To capture respondents' needs of e-participation, this study used a frequency of visiting Oasis sites as a

proxy. This item was scaled from less than every six month (1) to more than five times per week (7).

Political Participation. Citizen-initiated contact literature has suggested political participation as one key factor [56, 67]. This research used two types of political participation. Respondents were asked to indicate whether or not they voted on four most recent elections. This research combined their responses to four elections and created an index. Also, to control the effects of respondents' *involvement in interest group* on e-participation, three proxies were added to political participation category. As proxies, respondents' volunteer activities sponsored by nongovernmental organizations (NGO), unions, and political parties were included to measure the extent to which citizens as volunteers were indirectly involved in interest groups.

Socio-economic variables. Respondents' socio-economic status has been identified as a barrier for to citizen participation [30]. We included *gender* as a dummy variable (male=1). *Age* was measured on a continuous scale. As a dummy variable, e*ducation* was included as a dummy variable (college graduation or higher=1). *Income* was measured by households' monthly income with six categories ranging from 1 (less than $1,667 monthly income) to 6 (more than $5,000 monthly income). Six income categories were coded as a series of dummy variable where the lowest income level is used as the base dummy.

5. Analysis and Findings

Descriptive statistics and the correlation matrix show that five independent variables are significantly correlated with active e-participation. However, strength of social ties is not significantly correlated to active e-participation. The results of multicollinearity tests show the VIF did not exceed 3.0 in this model [44], which implies that multicollinearity is not a serious issue. Because the scale of a survey item for measuring active e-participation consists of five ordered categories, an ordered logistic regression model is employed to estimate the effects of independent variables.

Table 1 shows the results of the regression analysis. Three social capital hypotheses are supported by the data. Consistent with H1, the results demonstrate a positive and significant association between trust in government and active e-participation (β= .24, p < .05). That is, e-participants with greater trust in government tend to post a greater number of suggestions on Oasis. As expected, H2 is supported by the data (β= -.17, p < .05). That is, e-participants who maintain strong offline social ties tend to post a smaller number of suggestions on Oasis. In other words, weak offline social ties are positively associated with active e-participation. The data support H3 as well (β=.08, p < .05). Citizens are likely to post more suggestions when they have been frequently involved in volunteer activities.

Independent Variables		Coefficient	S.E
Individual Social Capital	Trust in government	.24**	.11
	Strength of social ties	-.17**	.08
	Social norms	.08**	.05
E-participation Management	Perceived Fairness	-.24	.18
	Information Access	-.12	.14
	Perceived Responsiveness	.28**	.14
Control Variables			
TAM Factors	Perceived Usefulness	.04	.17
	Intention to Use	.93***	.16
Psychological Factors	Political Efficacy	.08	.17
	Internet Self-Efficacy	.44***	.07
	E-participation Needs	.83***	.06
Political Participation	Voting Participation	.14**	.05
	NGO	.08	.22
	Labor unions	.06	.53
	Political parties	-1.04	.88
Gender (Male=1)		.28	.19
Age		.03***	.01
Education level (College or higher=1)		.57**	.23
Income level 6		1.00***	.31
Income level 5		.52	.33
Income level 4		.56**	.28
Income level 3		.63**	.26
Income level 2		.67***	.26
R^2		.41	
Max-rescaled R^2		.44	
Score test for the proportional Odds assumption		χ^2= 67.89; d.f=69; p=.51	

Note: For two-tail tests; ** p < .05; *** p < .01

Table 1. Ordered logistic regression results

Unlike the significant effects of individual social capital, three e-participation management hypotheses are partially supported by the data. The data does not support H4 and H5. The findings may imply that fairness in the participation process and information access do not facilitate e-participants' motivation to actively engage in e-participation. However, as expected, H6 is supported by the data (β= .28, p < .05). That is, e-participants tend to post a greater number of policy and management suggestions on Oasis when they receive sincere and useful feedback or they observe other participants receiving quality feedback from SMG employees.

Several control variables reveal significant relationships with active e-participation. Of the two TAM variables, intention to use is positively associated with active e-participation (β= .93, p < .01) while perceived usefulness is not. Among the three psychological variables, Internet self-efficacy (β= .44, p < .01) and need of e-participation (β= .83, p < .01) are statistically significant and positive, but political efficacy is not significant. Of the two political participation variables, voting participation is significant (β= .14, p < .05), but the

three dummy variables related to involvement in interest groups are not significant. Age ($\beta= .03$, $p < .05$), education ($\beta= .57$, $p < .05$), and most income variables are significant while gender is not significant.

6. Discussion and Implications

The study results suggest that all three dimensions of individual social capital play crucial roles in shaping active e-participation. As discussed earlier, one could argue that when citizens have greater trust in government, they are less likely to engage in government-initiated citizen participation (e.g., citizen participation in planning and budgeting process) because trust in government decreases their motivation to monitor government actively. However, these findings suggest that trust in government facilitates citizens to actively engage in citizen-initiated e-participation because trust in government encourages citizens to have a sense of cooperation with government and in turn, take appropriate actions.

Another important finding implies that weak offline social ties, rather than strong ones, promote active e-participation. This finding implies that weak offline social networks can serve as an incentive because active e-participation provides an opportunity to build online social networks as a complementary means for mobilizing resources. Thus, when e-participants embedded in weak offline social networks actively engage in e-participation, they are likely to gain the complementary benefits from online social networks (e.g. no redundant and new information, autonomy, lower maintenance cost), which serves their interests by reinforcing their resources.

Results of the study also suggest that there is a positive relation between volunteering and citizens' active e-participation. The finding supports prior studies on a positive relationship between citizens' volunteer experience and political participation [5, 63, 66]. The result implies that citizens' volunteering experience matter for their active citizenship behavior of participation in local community concerns.

Concerning the design and management of e-participation programs, this study's findings show that fairness and access to information in participation process are not related to active e-participation, which is not consistent with citizen participation literature emphasizing the design principles of citizen participation [61]. The inconsistency might be related to the nature of the citizen participation initiation and channel. Citizen participation literature has mainly been constructed on the basis of government-initiated citizen participation in an offline setting, which creates, by its nature, some barriers to citizen participation. When citizen participation is initiated by government, it is likely that citizens face information asymmetric circumstances because the government, as an agent, has more information than the citizens who lack information related to key issues of the purpose of participation (e.g. participation in budgeting and planning process).

E-participation has been touted as a means of lowering the physical and psychological barriers of conventional citizen participation [57]. Because of much lower cost for both entering and leaving e-participation sites, there is no strong economic incentive for e-participants to remain with the site. It is much easier for e-participants to leave e-participation. For example, consider a town hall meeting as a type of offline citizen participation. When citizens participate in the town hall meeting, it is not cheap for them to attend, continually pay attention, and commit to the meeting. Because of high opportunity and transaction cost, they might be more concerned about how government fairly treats them and provides the necessary information. However, e-participants may not be concerned about fairness in the participation process and information access because of the lower opportunity and transaction cost for them to engage in e-participation.

Lastly, the findings imply that government responsiveness–quality feedback–matters for facilitating active e-participation. The importance of quality feedback as a facilitator of e-participation is consistent with both conventional citizen participation literature [30, 36] and online community studies [38]. Also, this finding supports a normative argument of the role of "listening bureaucrat" in enhancing responsiveness in public administration [53].

7. Conclusion

While web-based e-participation programs have been championed as a crucial tool for e-government to facilitate citizen participation, there have been limited efforts to analyze the driving forces of active e-participation from e-participants' perspectives. Active e-participation in local governance could matter for effective and transparent decision making and problem solving in local governance. This study proposed a model of active e-participation and tested the model using the survey data collected from the residents of Seoul who have hands-on experience with e-participation run by SMG. This exploratory study contributes to e-participation literature by uncovering both social capital and e-participation management factors affecting citizens' active e-participation. Also, the study findings suggest that local governments pay more attention to the role of government in facilitating individual social capital as a facilitator of active e-participation and in building effective design and management systems of e-participation enhancing government responsiveness to citizens' input.

At least, three limitations should be noted: external validity, cross-sectional research design, and online social networks. The results of this study could be outcomes of unique citizen engagement evolution that are affected by South Korea's historical, political, and cultural contexts. Accordingly, more in-depth case studies in various regions and countries are needed to advance active e-participation models in local governance. Also, we

suggest longitudinal research in order to better understand the factors affecting the sustainability of active e-participation. Since this study analyzed the role of offline tie strength on active e-participation, it is limited to understanding how online social networks affect e-participation behavior. Therefore, future studies are needed to extend the study model by incorporating the role of online tie strength.

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