

## **The Internet and Inequality in Democratic Engagements: Panel Evidence from South Korea**

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This article examines how Internet use for political information affects citizens' interest in politics. Moreover, we explore how the Internet's effect on political interest among the citizenry depends on a variety of group attributes. Despite scholarly interest in the potential for the Internet to facilitate participation and ameliorate political inequality, studies on the relationship between Internet use for political information and political interest have been rare. Most empirical studies analyzing cross-sectional data tend to suffer from establishing causal relationships between the Internet and political interest. Using the 2007 Korean Presidential Election Panel Study, we found that use of the Internet for political news has a positive effect on citizens' interest in politics. Moreover, we found that the Internet has a moderating effect that reduces the gap in political interest between older people and younger people, but not the gap between different income groups or different groups of educational attainment.

*Keywords: Internet; political interest; socioeconomic status*

Does Internet use increase citizens' interest in politics? Does Internet use exacerbate or ameliorate the gap in political interest among diverse social groups? This article examines how Internet use for political information affects citizens' interest in politics over time in South Korea ("Korea" hereafter). Moreover, we explore how the Internet effect on political interest among the citizenry depends on a variety of group attributes. Political interest refers to a citizen's willingness to pay attention to political phenomena at the possible expense of other topics (Lupia & Philpot, 2005, p. 1122). Interest in politics among the citizenry is considered critically important for a well-functioning democracy. As Prior (2010) states, "political interest is typically the most powerful predictor of political behavior that makes

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democracy work" (p. 747). In this article, we pay attention to a stylized fact that interest in politics is a prerequisite for political participation of the mass public.

While the existing literature has suggested a strong association between political interest and media usage (Delli Carpini, 2004; Strömbäck & Shehata, 2010), we know very little about whether Internet use for political information is associated with more interest in politics over time. This is primarily because causal direction is ambiguous in the literature. It is not clear whether citizens selectively use the media because they are interested in politics or if the level of their political interest increases due to the effect of the media use. Related is that most studies have relied on analysis of cross-section data, making most findings ambiguous about causal direction between Internet use and political interest.

Studies of Internet use and political participation suggest how we should think about the relationship between Internet use and citizens' interest in politics. Citizens who are interested in politics, follow politics, care about what happens, and are concerned with who wins or loses are more politically active than those who are less interested in politics (Verba, Schlozman & Brady, 1995, p. 345). Clearly, interest in politics drives political participation. Some scholars have mentioned that the Internet would ameliorate political inequality by lowering the threshold for political participation (Morris & Morris, 2013; Negroponete, 1995; Nisbet, Stoycheff, & Pearce, 2012; Vaccari, 2008, 2010). The cost for becoming politically informed has drastically decreased. Moreover, unlike in the past, when only elite groups, broadcasting corporations, and power authorities monopolized political voice, the mass public now has its own outlet. In contrast, skeptical views have maintained that the Internet does not necessarily lead to increases in political participation. Furthermore, it has been proposed that those who are already advantaged regarding non-Internet parameters, such as those who are more educated, male, richer, and more participatory, are more active than their counterparts in using the Internet (Davis, 1999; Norris, 2001).

The empirical evidence from studies that test these conflicting views is, at best, mixed (Bimber, 2000; Boulianne, 2009; Hindman, 2009; Scheufele & Nisbet, 2002; Schlozman, Verba, & Brady, 2010). Importantly, Boulianne (2009, 2011) has suggested two critical findings. By conducting a meta-analysis of 38 studies that examined media use and political participation, she has found a positive effect for the media use for political information upon participation (Boulianne, 2009). More importantly, for the purpose of this study, she has suggested that when we do not take political interest into account, the results are likely to overstate the relationship between media use for political information and participation. This finding remained robust when she analyzed a panel data (Boulianne, 2011).

Taking Boulianne's findings into account, this article examines the Internet's effect on citizens' interest in politics. We argue that the Internet has an influence on increasing political interest when citizens use it as a source for political information. Because the Internet remarkably reduces the cost of information acquisition, rational individuals have incentives to become interested in politics and public affairs. When one uses the Internet for political information, the Internet effect on political interest is likely to be more pronounced. Furthermore, we explore whether political Internet usage reduces inequalities in political interest. To do this, we examine the heterogeneous effects of the Internet while varying factors related to socioeconomic status such as age, education, and income.

To examine the effect of Internet use for political information on interest in politics over time, we make use of the 2007 Korean Presidential Election Panel Study. The case of Korea provides interesting

observations for the purpose of analyzing the relationship between Internet use and political interest. First, while the information technology has been dramatically developed and has become widely available, there is a huge variation in levels of political interest among Korean citizens. This provides a useful context in which we examine how Internet use for political information makes citizens more interested in politics. Second, the literature on the political consequences of Internet use in Korea has revolved around the debates between the mobilization thesis and the reinforcement thesis. While some studies have found supporting evidence for the mobilization thesis by suggesting that Internet use is associated with an increase in political participation (Kim, S., 2010; Kim & Yoon, 2004; Min, 2009), other studies have found supporting evidence for the reinforcement thesis by suggesting that Internet use is not associated with an increase in participation among the poor, younger, and less educated (Hwang, 2001). However, these studies are limited in large part due to the fact that they analyzed cross-sectional data. That is, it is hard to determine whether citizens use the Internet for political information only because they are highly interested in politics or if Internet usage increases citizens' interest in politics (see Lee, 2002, p. 322, fn. 9; Choi, Hur, & Kwon, 2011).

One strong advantage of analyzing panel data is that one can guard against the potential reversed causality problem typically found in cross-sectional studies. By making use of panel data, we could overcome such potential problems and more reasonably infer about the effect of the Internet on citizens' interest in politics. Our empirical analysis of the 2007 Korean Presidential Election Panel Study finds that the use of the Internet for political news has a positive effect on citizens' interest in politics—taking into account an individual's baseline interest in politics. Moreover, we find that the Internet has a moderating effect that reduces the gap in political interest between older and younger people but not the gap between different income and educational groups.

In the next section, we review the relevant literature concerning the Internet and democratic politics. We then introduce our theoretical framework on the effect of the Internet on citizens' interest in politics and draw our hypotheses, followed by data and variables, with discussions about the results of the empirical analysis. The last section concludes the article and provides some implications.

### **The Internet Effect and Democratic Engagements**

Studies on the effect of the development of communications technology on political processes can be classified based on whether they accept or deny Marshall McLuhan's classical thesis that "media is message." Some studies have argued that the pre-Internet mass media exerted negative influences on democracy in various ways. For instance, Putnam (1995) argued that television brought about a critical erosion of social capital and civic engagement in American society. Against this logic of "media malaise," some scholars have pointed out that the media content matters more than the form of the media per se. According to them, the content in which citizens are interested might lead to either an increase or a decrease in political involvement (Aarts & Semetko, 2003; Moy et al., 2012; Newton, 1999; Norris, 1996).

There have been similar debates regarding Internet information technology. Initially, these debates focused on the transformative potential of the Internet. Manuel Castells (2001) mentioned that Internet information technology parallels electricity development during the industrialization period. Borrowing from McLuhan, he stated that the "network is the message" (Castells, 2001, p. 2). More importantly, the Internet "is viewed as a vehicle for educating individuals, stimulating citizen participation,

measuring public opinion, easing citizen access to government officials, offering a public forum, simplifying voter registration, and even facilitating actual voting" (Davis, 1999, p. 21). Unlike the traditional media, it is difficult or even impossible to "gate-keep" information transmission on the Internet. This is because it is not possible to control the sites and content from which Internet users obtain information. Not only do the users consume information but, more importantly, they express and spread their views and opinions (Shah et al., 2005). Some have suggested that Internet users participate in wider social circles and maintain active social connections due in large part to the mutualism that the Internet environment provides to citizens (Nisbet, Stoycheff, & Pearce, 2012; Uslaner, 2004).

In contrast, other scholars have had skeptical views concerning the effect of Internet communications. Bimber (1998, 2000) is cautious in projecting expectations of the changes that the Internet is likely to bring about. While the Internet will certainly change the information environment of individuals, this does not necessarily lead to an interest in politics and public affairs. What is important is not media per se but media content, and it is not reasonable to think that the Internet necessarily guarantees the improvement of communicative content. That is, information availability is one thing while the use of information is another. According to Nie (2001), "Internet users do not become more sociable. Rather, they already display a higher degree of social connectivity and participation due to the fact that they are better educated, better off financially, and less likely to be among the elderly" (p. 429).

What is important is whether the use of the Internet decreases or increases the knowledge gap and participation gap found in the offline world. Norris (2001) has termed the former view—that the Internet decreases the knowledge/participation gap—as the "mobilization hypothesis," while the latter view—that the Internet will increase the knowledge/participation gap—has been termed the "reinforcement hypothesis." Norris (2001) writes,

[t]he mobilization hypothesis holds that the Internet may serve to inform, organize, and engage those who are currently marginalized from the existing political system—such as the younger generation, people living in isolated peripheral communities, for fringe political minorities disaffected by the traditional system—so that these groups will gradually become drawn into public life and civic communities. (p. 218)

In contrast, a more skeptical perspective suggests that online resources will be used primarily for reinforcement by citizens who are already active and well connected via traditional channels, such as journalists, lobbyists, party members, and grassroots activists. Many empirical studies have examined participatory patterns. Although many studies found that the Internet does not dramatically contribute to reducing political inequality, empirical evidence is, at best, inconclusive (Bimber, 2001; Bimber & Copeland, 2013; Boulianne, 2011; Hindman, 2009; Johnson & Kaye, 2003; Krueger, 2002; Kruikeimeier et al., 2013a, 2013b; Norris, 2001; Schlozman, Verba, & Brady, 2010; Tolbert & McNeal, 2003).

### **The Internet, Political Information, and Political Interest**

In this study we examine the Internet's effect on citizens' interest in politics. We propose that the Internet has an influence on increasing political interest when citizens use it as a source for political information. Furthermore, we explore whether political Internet usage reduces inequalities in political interest. To do this, we examine the heterogeneous effects of the Internet while varying factors related to socioeconomic status such as age, education, and income.

### ***How Internet Use Increases Interest in Politics***

Interest in politics drives political participation. Citizens who are interested in politics, follow politics, care about what happens, and are concerned with who wins or loses are more politically active than those who are less interested in politics (Verba, Scholzman, & Brady, 1995, p. 345). It has been well documented that there is a strong correlation between political interest and media usage for acquiring political information (Boulianne, 2011; Delli Carpini, 2004, Strömbäck & Shehata, 2010). However, causal direction is ambiguous. In other words, it is not clear whether citizens selectively use the media because they are interested in politics or if the level of their political interest has become higher due to the effect of media use.

We posit that Internet use for political information purposes would increase political interest because the Internet requires only minimal costs of acquiring and posting information and because it facilitates communication flows beyond geographical boundaries. But when one considers the Internet as a monolith only for communication, it is reasonable to expect that the positive and negative effects of Internet use on political interest would cancel each other out. This may be one of the reasons for inconclusive findings. Therefore, it is important to consider for what purpose individuals use the Internet.

It is widely accepted that to study media effects, it is important to focus on media content rather than media usage per se (Newton, 1999). When one conflates general exposure to the media and the informational use of the media, the actual effect can be blurred. Shah and his associates argued that informational use of the Internet increases political engagement and expands social capital (Shah, McLeod, & Yoon, 2001; Shah, Kwak, & Holbert, 2001). Some studies have suggested that the media effect on political participation can be found when one considers particular policy areas (Baum, 2002) or particular sites (Lupia & Philpot, 2005). In a similar vein, several studies have reported a participation-inducing effect of the Internet (Boulianne, 2011; Farnsworth & Owen, 2004; Kaye & Johnson, 2002; Kruike-meier et al., 2013). Prior (2005) showed that Internet use increases political participation only when citizens use it as a news source but not as a source of entertainment.

Following Prior (2005), we argue that the Internet usage for political information would increase citizens' interest in politics. The reason behind this argument is that the Internet reduces the cost of information acquisition so as to provide Internet users with incentives to be informed about politics and public affairs. Decreases in the cost of information increase the level of political interest and, subsequently, the likelihood of political participation. According to Downs (1957), the electorate invests in acquiring information to the extent that the marginal return of information exceeds the marginal cost. This implies that the likelihood of becoming interested in politics and voting participation increases as the marginal cost of information becomes smaller. Using Downs' framework, one could argue that citizens are "rationally ignorant" because the utility of information acquisition rarely exceeds the cost of such activities. However, when the cost of participation or the cost of information gathering is not as high as the utility of information gathering and participation, citizens' incentives and behaviors would change. Therefore, the reduced cost of information gathering induced by the Internet would make "rationally ignorant" citizens become more interested and informed citizens.

How would informed citizens become more interested in politics? First, Internet use for political information leads to the acquisition of political information, which can help people understand political information better. When people's ability to understand news information improves, they are more likely

to find politics interesting. Second, even without acquiring much factual information, the consumption of political information familiarizes a person with names and images from the political world. Third, news consumption through the Internet can lead to interpersonal discussion about the topics and issues covered in the news, and the experience of discussing politics with friends and colleagues may heighten a person's own interests in politics. Accordingly, we expect that Internet use for political information is likely to increase such political interest. From the above discussions, we draw the following testable hypothesis.

*Hypothesis 1: Individuals who extensively use the Internet for political information are likely to become more interested in elections.*

### **Heterogeneous Effects of the Internet on Political Interest**

Although the Internet may lower the cost of information and increase a user's political interest, this does not necessarily imply that the Internet functions as an "equalizer." New communication environments provided by the Internet can be utilized to varying degrees depending on the user's resources and abilities. This may lead to changes in inequalities of political interest. Which groups would become more interested in politics? It is well documented in numerous studies that there is variation in political engagement based on socioeconomic status. Individuals who are more educated, richer, and have better social skills tend to be more active in political engagements (Delli Carpini, & Keeter, 1996; Verba, Schlozman, & Brady, 1995). This stylized fact also applies to voter turnout (Lijphart, 1997).

Many studies have been motivated by the question of whether the development of Internet information technology would change this pattern of inequality in democratic engagements. In their analysis of the 1996 and 2000 National Election Studies data, Tolbert and McNeal (2003) found that Internet use exerted a positive effect on voter turnout even after taking socioeconomic status into account. In contrast, by analyzing longitudinal data from 1982 to 1997 in the United States, Jennings and Zeitner (2003) showed that Internet use did not alter the pre-Internet gap in civic engagement and may have even increased it. Schlozman, Verba, and Brady (2010) suggested that political inequality, varying by socioeconomic status, is not ameliorated by Internet usage.

We expect that Internet use for political information is likely to increase citizens' interest in politics. However, there are strong reasons to suspect that the Internet effect on political interest may vary by socioeconomic status (Xenos & Moy, 2007). Accordingly, we further expect that the Internet effect is likely to depend on a citizen's socioeconomic status, i.e., age, income, and educational attainment. Through empirical tests of our expectations, we may be able to examine whether Internet use ameliorates or intensifies inequality in political interest and democratic engagements. Following Schlozman, Verba, and Brady (2010), we propose that inequality across socioeconomic status in political engagement, including political interest and participation, is not likely to be ameliorated by Internet use for political information. It is reasonable to think that there are varying effects of the Internet across different socioeconomic groups. If the reinforcement thesis is correct, the political interest-inducing effect of the Internet is likely to be more pronounced among younger citizens versus their older counterparts (Bakker & de Vreese, 2011). More educated citizens tend to engage more in democratic political processes than do the less educated. High-income groups may also be more affected by Internet use than lower-income groups. In

contrast, the mobilization thesis suggests a counterhypothesis that states the political interest-inducing effect of the Internet would be found among citizens across the board. Clearly, the political interest-inducing Internet effect is likely to be conditional upon a citizen's socioeconomic status. Accordingly, we draw the following conditional hypothesis.

*Hypothesis 2: The political interest-inducing Internet effect is more likely to be pronounced among the younger, richer, and more educated groups than their counterparts.*

### **Empirical Analysis**

To examine whether and how Internet use for political information affects citizens' interest in politics, we make use of the 2007 Korean Presidential Election Panel Study, which includes six waves. Wave 1 was conducted in April 2007, and wave 6 was undertaken in December 2007, immediately after the election (EAI, 2008). The Korean Presidential Election Panel Study was conducted by telephone interviews, with the respondents drawn by a multistage area probability sampling method. The panel attrition issue is important to ensure the quality of panel data. Out of 3,503 respondents who participated in wave 1, 2,111 respondents completed all six waves, resulting in 60.2% panel attrition rates. In all of the analysis below, we included panel weight for considering the attrition rates. Unlike cross-sectional survey data, panel data enables us to determine whether Internet use leads to an increase in political interest or, conversely, if politically active citizens use the Internet as a political information source.

The dependent variable in this analysis is Political Interest. To measure political interest, we used the following question from wave 5: "Are you interested in the upcoming presidential election to be held in December?" The responses were coded 1 if very much interested, 2 if more or less interested, 3 if not really interested, and 4 if not at all interested. For the ease of interpretation, we recoded the scale so that 1 refers to "not at all interested" and 4 to "very much interested." It should be noted that our choice of questions from different waves is largely dictated by the data availability. For instance, the question about media use (including TV, newspapers, and Internet) is included in waves 1, 2, 4, and 5. Similarly, the question about political interest is only available from waves 1, 3, and 5. Because wave 5 (conducted in December, immediately before the election) is the last wave before the election, it is reasonable to use wave 5 data for political interest. To take into account individuals' political interest in the previous period, we include political interest from wave 3 (conducted in October, immediately before the campaign period) into the right-hand side of the equation.

To measure Internet use, we use the following question from wave 4: "For the last week, how often have you read news about the presidential election through the Internet?" The responses were coded as 1 through 4, where 4 refers to "every day." The models included both the variable Internet use with the original scale (1-4) and a dummy variable, High Internet use, indicating 1 for "everyday use" and 0 for otherwise. We entertained the idea of including this indicator variable because there might be a distinctive behavioral pattern from those who use the Internet for political news on a daily basis. To test whether citizens' socioeconomic status systematically influences the effect of Internet use, we include interaction terms into our empirical specifications: Age X Internet use, Education X Internet use, and Income X Internet use.

We also include the following variables to account for other factors that might affect citizens' level of political interest. It is reasonable to think that citizens with partisan affiliations are more interested in politics than those without affiliation. Accordingly, we include a dummy variable to indicate nonpartisans (Nonpartisan). Following Verba, Scholzman, and Brady (1995), we also include demographic variables such as Age, Educational attainment, Income, and Female. The literature would lead us to expect that the older, more educated, richer, and male subjects are more likely to have higher levels of political interest than their counterparts (Moy et al., 2012). We include regional (hometown)-specific fixed effects in the model to account for potential omitted variable bias when we did not incorporate the fact that individuals from particular regions might have higher levels of political interest than those from other regions, which is a characteristic in electoral politics in South Korea. All control variables were taken from wave 1.

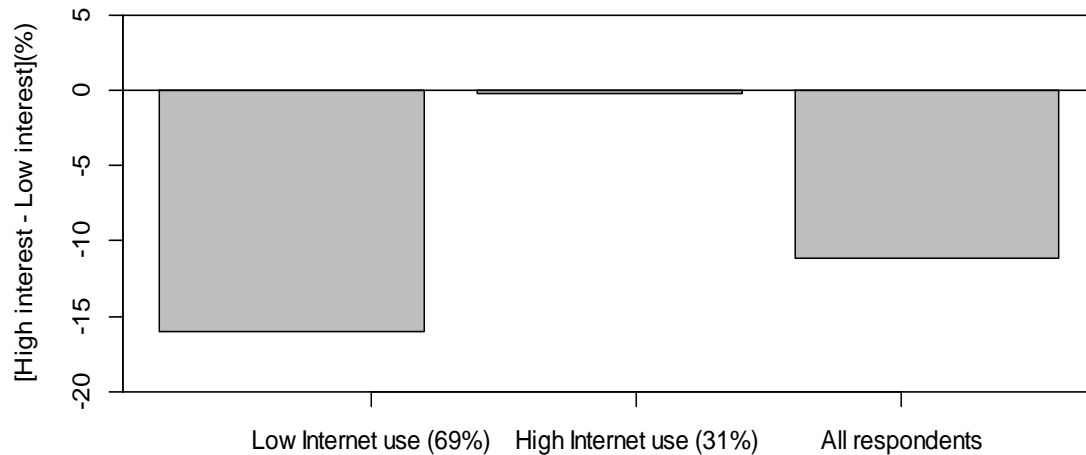
**Table 1. Internet Use for Political Information and Political Interest.**

	Low political interest	High political interest	Total
Low Internet usage	809 (58.0)	586 (42.0)	1,395 (100)
High Internet usage	310 (50.1)	309 (49.9)	619 (100)
Total	1,119 (55.6)	895 (44.4)	2,014 (100)

*Note: Data for Internet use is from wave 4, and data for political interest is from wave 5. Row percentage is in parenthesis. Likelihood-ratio  $\chi^2 = 10.84$  with  $p$ -value 0.001.*

Table 1 shows the association between Internet use and political interest. For the purpose of a comparison, we distinguished between low versus high Internet use and low versus high political interest. High Internet use refers to the case of Internet use for political information on a daily basis, and high political interest refers to people who are very much interested in politics. Approximately 31% of the total respondents answered that they used the Internet for political news on a daily basis. Among these "high Internet users," approximately 50% showed a high level of interest in politics. By contrast, only 42% of "low Internet users" showed a high level of political interest. Perhaps more interestingly, as Figure 1 shows, the difference in the proportion of low and high levels of political interest is 16 percentage points among the low Internet users, whereas the difference is merely 0.2 percentage points among the high Internet users. A cross-tabulation analysis presented in Table 1 suggests that the proportion of individuals who had higher levels of interest in politics was much higher among the "high Internet users."





**Figure 1. Internet use and political interest.**

Table 2 shows demographic characteristics classified by Internet use (A) and levels of political interest (B). Comparing demographic and socioeconomic characteristics by levels of Internet use, we observe that citizens who used the Internet for political news on a daily basis ("high Internet users") were more interested in politics, younger, more educated, richer, and less likely to be female than citizens who did not use the Internet for political news every day. The t-test results show that the differences in the attributes between the two groups (high versus low Internet users) are statistically significant, at 99% confidence level. Demographic characteristics by levels of political interest suggest that citizens with higher levels of political interest use the Internet for political news more frequently, that they are older, less educated, and poorer. Women tend to be less interested in politics than men. But only the difference in age and gender turned out to be statistically significant.

How does Internet use affect a citizen's level of political interest? To systematically test our hypotheses, we now turn to empirical analysis.

**Table 2a. Demographic Characteristics by Internet Use.**

	Low Internet use	High Internet use	p-value
Political interest (1-4)	3.30	3.42	0.0004
Age	44.8	38.0	0.0000
Education (1-4)	2.47	2.89	0.0000
Income (1-5)	3.49	4.11	0.0000
Female	56.7	29.7	0.0000

*Note: Low Internet use N = 1,395, High Internet use N = 619. p-values are from the test for differences of means between the two groups.*

**Table 2b. Demographic Characteristics by Political Interest.**

	Low political interest	High political interest	p-value
High Internet use	2.33	2.42	0.1133
Age	39.4	46.8	0.0000
Education (1-4)	2.62	2.58	0.2320
Income (1-5)	3.71	3.64	0.2488
Female	55.5	39.6	0.0000

*Note: Low political interest N = 1,119, High political interest N = 895. p-values are from the test for differences of means between the two groups.*

### **Estimation Results**

Since the dependent variable, *Political Interest*, is a qualitative, ordered categorical variable on a four-point scale, we estimate the following form of an ordered probit model.

$$\text{Probit}[\text{Pr}(y_i > s)] = X_i^T \gamma - \kappa s$$

where  $X_i$  is a vector of independent variables for an individual  $i$ ,  $\gamma$  is a vector of coefficients to be estimated, and  $s$  refers to cut points.

Our empirical analysis adopts the following two treatments. First, we include the lagged dependent variable (Political interest (t-1)) on the right-hand side of the equation to account for an individual's baseline level of political interest. Second, to guard against potentially omitted variable bias, and to account for heteroskedasticity, which is typically found in this type of clustered data, we include region-specific fixed effects in the model.

**Table 3. The Effects of Internet Use for Political Information on Political Interest.**

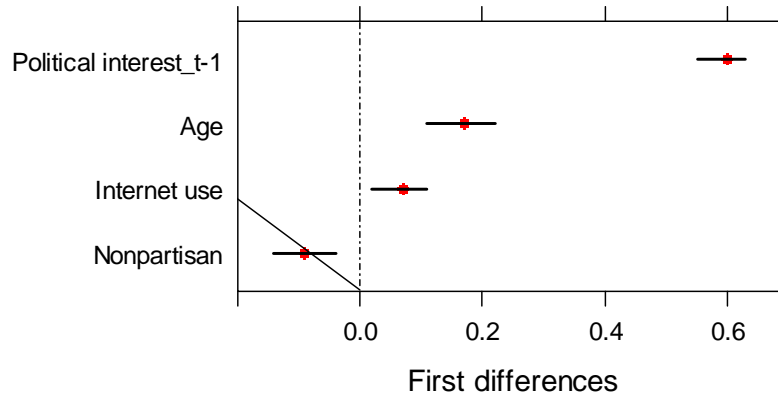
Covariates	[1]	[2]	[3]	[4]
Political interest (t-1)	1.18** (0.05)	1.18** (0.05)	1.18** (0.05)	1.18** (0.05)
Internet use	0.06* (0.03)		0.48** (0.16)	
High Internet use		0.19** (0.07)		1.16** (0.44)
Nonpartisan	-0.23** (0.07)	-0.24** (0.07)	-0.24** (0.07)	-0.25** (0.07)
Age	0.02** (0.003)	0.02** (0.003)	0.04** (0.01)	0.02** (0.003)
Education	0.09* (0.04)	0.10** (0.05)	0.07 (0.10)	0.11* (0.06)
Income	0.01 (0.03)	0.01 (0.03)	0.09 (0.05)	0.03 (0.03)
Female	-0.08 (0.06)	-0.08 (0.06)	-0.07 (0.06)	-0.09 (0.06)
Age x Internet use			-0.008** (0.002)	
Education x Internet use			0.02 (0.04)	
Income x Internet use			-0.03 (0.02)	
Age x High Internet use				-0.02** (0.006)
Education x High Internet use				0.002 (0.11)
Income x High Internet use				0.06 (0.06)
Region fixed effects	Yes	Yes	Yes	Yes
Pseudo R2	0.26	0.26	0.26	0.26
N	2,014	2,014	2,014	2,014

*Note: Entries are ordered probit model parameter estimates and standard errors in parentheses. The dependent variable is Political Interest, 1–4 ordinal measure. Cut points for ordered probit models are omitted for the interest of space. Data for political interest (t-1) is from wave 3, Internet use are from wave 4, data for other covariates are from wave 1, and data for political interest (t) is from wave 5. \*  $p < 0.05$ , \*\*  $p < 0.01$  (two-tailed).*

Table 3 shows the results of the Internet effect on political interest. The results show that Internet use for political information is associated with higher levels of political interest, taking into account an individual's political interest in the previous period. More specifically, consistent with Hypothesis 1, we can infer that Internet use for gathering information about elections is associated with higher levels of interest in politics. Given that we analyzed panel data, this inference is more compelling than the ones from a usual cross-sectional analysis. The effect of Internet use was statistically significant at the  $\alpha = .05$  level or higher for all models [1]–[4]. Individuals who used the Internet every day for political information were more likely to have high levels of political interest than individuals who did not use the Internet for political information every day.

This result suggests a positive effect of Internet use for political information on increasing the citizen's interest in politics. Consistent with our argument that the reduced cost of information has been brought about by the Internet, the result clearly suggests that the Internet provides incentives for citizens to be interested in politics. This finding refutes Putnam's argument that the Internet would bring about a negative impact on citizens' democratic engagements (Putnam, 1995). What matters seems to be how and for what purpose citizens use the Internet, not the development of the Internet, per se.

Consistent with the previous studies, our results showed that nonpartisans were less likely than partisans to have higher levels of political interest. Also, the older respondents were found to have higher levels of political interest than their younger counterparts. Higher education levels were associated with higher levels of interest in politics. However, we found no evidence showing an effect of income level and gender on political interest.



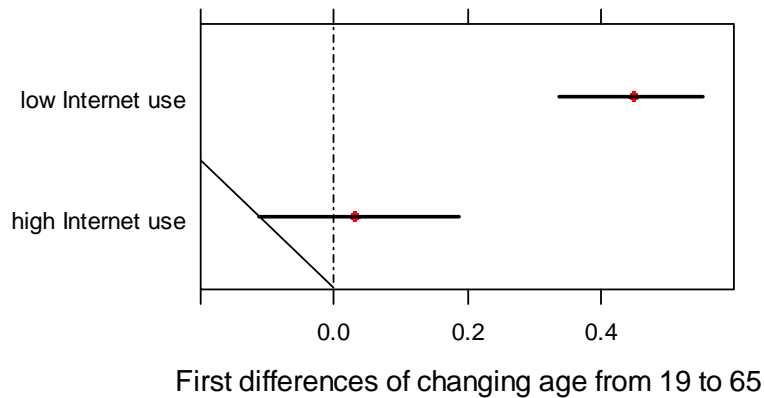
**Figure 2. First differences for the change in the probability of "very much interested in politics."**

*Note: Only those coefficients that were statistically significant at 95% level are presented. Lines denote 95% confidence interval. Simulations were based on estimation results in Model [1] in Table 3. The figure shows the changes in predicted probability of answering "very much interested in politics" when each continuous variable's value is changed from one standard deviation below the mean to one standard deviation above the mean and each discrete variable  $s$  from 0 to 1, while setting all other variables at their mean.*

To examine the substantive effects of covariates, we performed simulations of the changes in predicted probability of answering "very much interested in politics" when each continuous variable's value is changed from one standard deviation below the mean to one standard deviation above the mean and each discrete variables from 0 to 1, while setting all other variables at their mean. Figure 2 presents the predicted probability and 95% confidence interval for only the covariates that turned out to be statistically significant. As Figure 2 shows, the first differences for change to "very much interested in politics" of the variable Internet use were estimated to be 0.07 (95% confidence interval [0.02, 0.11]). Obviously, the first differences of the political interest in the previous period from one standard deviation from the mean to one standard deviation above the mean were estimated to lead to a 60% point increase (95% confidence interval [0.55, 0.63]) in the probability of being "very much interested in politics." Figure 2 also shows that nonpartisanship is 0.09 points less likely, and age is 0.17 points more likely to change to "very much interested in politics."

How does the Internet effect vary by socioeconomic status? Does the Internet mobilize citizens with diverse socioeconomic statuses so that political interest of the citizenry can be increased across the board, or does the Internet merely reinforce the gap in political interest across variables of socioeconomic status? To empirically test these claims, we estimated interaction models. The models [3] and [4] in Table 3 present the results with interaction terms. These results suggest that the Internet effect is conditional upon the citizen's age. That is, as age increases, the Internet effect on political interest diminishes. In the same vein, the effect of age on political interest indicates that the individuals who did not use the Internet

for political news every day would become more politically interested as they age. The results clearly suggest that the Internet effect is stronger among young citizens and that, as an individual becomes older, the Internet effect diminishes. Put differently, the gap in political interest between the older and the younger was much smaller among the citizens who read political news through the Internet than among those who did not. Other interaction terms between socioeconomic status and the Internet usage were not statistically significant. Neither the interaction between educational attainment and Internet use nor the interaction between income and Internet use registered statistical significance. These results suggest that the Internet effect does not vary by an individual's educational attainment and income scale. The results for control variables, including nonpartisan, age, income, and female, showed the same pattern as those presented in Models [1] and [2] in Table 3.



**Figure 3. First differences for the change in the probability of "very much interested in politics."**

*Note: High Internet use refers to the case of using the Internet for political news every day. Lines denote a 95% confidence interval. Simulations were based on estimation results in Model [3] in Table 3. The figure shows the changes in predicted probability of answering "very much interested in politics" when each continuous variable's value is changed from one standard deviation below the mean to one standard deviation above the mean and each discrete variables from 0 to 1, while setting all other variables at their mean.*

The substantive conditional effects can be estimated by simulations. Figure 3 presents the predicted probability and 95% confidence interval for the case of low Internet use (a score of 1 on a four-point scale) and high Internet use (a score of 4). Figure 3 shows that the first differences for change to "very much interested in politics" from ages 19 to 65 were estimated to be 0.45 (95% confidence interval [0.34, 0.54]) for low Internet users, showing a pronounced age effect. In contrast, for high Internet users, the first differences for change to "very much interested in politics" from ages 19 to 65 were estimated to be 0.03, with a 95% confidence interval, including for zero.

### ***Robustness Check***

To check the robustness of the results and to ensure that the findings of analysis are not sensitive to our choice of measurements and specifications, we performed several sensitivity analyses. Many empirical studies have juxtaposed the effects of media use by including television and newspapers along with the Internet (Boulianne, 2009). To examine whether the Internet effect on political interest remains the same when we include other media use, we estimated our models, including the frequency of television watching and newspaper reading for political information. The results (not reported here in the interest of space) show that the use of all three media is positively associated with political interest and statistically significant, at 95% confidence level or higher. The Internet effect remains statistically significant even after taking into account other media use. The magnitude of the TV effect was higher than for newspaper reading and the Internet. The magnitude of the effects of the latter two turned out to be more or less the same. (The results are available upon request.)

Second, to ensure that the findings presented above are not sensitive to particular estimation models, we estimated our models by logistic regression after recoding the political interest variable into a dichotomous measure. Here, the dependent variable is a dichotomous variable: high political interest versus low political interest. The results of logistic regression were not qualitatively different from the results of the ordered probit model. (The results are available upon request.)

### **Conclusion**

This article has shown that Internet use for political news is associated with increases in a citizen's interest in politics. Citizens' use of the Internet to read news concerning elections was found to have a positive effect on enhancing their political interest. This key finding from our analysis is in line with the mobilization theory, which has argued that Internet usage would lead to heightened levels of political information, interest, and participation when people utilize it for political information. Furthermore, we have found that Internet use for political news reduces the gap of political interest between older and younger individuals. The gap in political interest between the older and the younger was much smaller among the citizens who read political news through the Internet than for those who did not. The finding from our analysis suggests that the Internet has an effect on reducing the gap between the older and younger. This finding confirms the results from numerous empirical studies that have shown the age gap-reducing effect of the Internet (Delli Carpini, 2000; Norris, 2001; Shah, Kwak, & Holbert, 2001). However, we did not find any heterogeneous effect of the Internet that varies by other measures of socioeconomic status regarding educational attainment and income.

The findings of this analysis suggest several implications for democratic politics. First, as Lijphart (1997) mentioned, unequal participation has become one of the most critical obstacles for democracy. Our finding suggests that unequal participation is closely related to unequal interest in politics, and that how one uses the Internet—for political information or entertainment—is associated with citizens' political interest. When the development of information and telecommunication technology goes hand in hand with increases in levels of political information and political interest, it is likely to contribute to making democracy work. Second, the link between Internet use for political information and interest in politics this analysis unearths has an important implication for newer democracies like Korea. In new democracies,

political cynicism and disinterest in politics among the citizenry has become a worrisome obstacle for sustainable democracy. In part, this has to do with political corruption and lower levels of trust in political institutions. At the same time, there is a generational gap in levels of interest in politics: The younger tend to be less interested in politics than their older counterparts. Our finding that Internet use for political information makes citizens more interested in politics suggests that active social networks that disseminate and discuss political information may be one way to get citizens, particularly younger citizens, more interested in politics, thereby leading to higher levels of democratic engagements.

There are several interesting and important venues for future research. Gilens (2001) suggested that the type of information that matters is not only general political knowledge, interest, or cognitive capacity, but also the specific facts germane to particular political issues (p. 391). Policy-specific facts can have an important influence on political judgment as well. This influence is not adequately captured by measures of general political knowledge. In this sense, it might be interesting to determine whether and how the Internet affects not only citizens' general interest in politics but also their specific interest in policy issues. Second, perhaps what matters for the political consequences of the media is not only the amount of usage of particular media, but also the credibility of the media. As Johnson and Kaye (1998) stated, "reliance is a stronger indicator of credibility than amount of use" (p. 335). The manner in which the Internet influences democratic politics may be a function of not only the amount of use but also the Internet's credibility and the extent to which the citizens trust it (Johnson & Kaye, 2000, 2004). It is reasonable to think that the political consequences of the Internet would vary by the development of information technology and the increase in distribution and consumption of IT technology (Hindman, 2009). Studies on the effect of the Internet upon democratic politics have important and interesting research venues to pursue.



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