

Comparing the Effects of Newspaper, TV News, and the Internet News on the Evaluation of a Major Political Candidate: Latent Growth Modeling with Longitudinal Panel Data from the 2007 Presidential Campaign in South Korea

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Abstract

The present article argues that the reasons of the theoretical predicaments regarding the relationship between news media and public opinions are: (a) news media might not be a single entity—the different types of news media (newspaper, TV news, and the Internet news) might have different effects on political behaviors; and (b) while effects of media on political behaviors should be probed through longitudinal data, most studies so far have exclusively relied on cross-sectional single wave data. Through the latent growth modeling with a set of longitudinal data, the present study revealed that TV news use (the increase rates as well as the amount of use) had positive influences on the evaluation of the candidate's morality. In contrast, the Internet news use (the increase rates as well as the amount of use) showed negative effects.

Although many political scientists and communication scholars have demonstrated that news media use is tightly associated with political behaviors, the theoretical models explaining the associations of news media and political behaviors are so diverse that we may call the situation as a jungle of theories. A line of studies has reported that news media use is an effective enhancer of political behaviors in general (Kim & Kim, 2008). A host of empirical evidence and theoretical reasoning supports that news media use brings about more positive and active consequences of political behaviors and participation (Benoit, McKinney, & Holbert, 2001; Domke, Shah, & Wackman, 1998; Iyengar & Kinder, 1987; Kim, Wyatt, & Katz, 1999; Moy, McCluskey, McCoy, & Spratt, 2004; Norris, 1996; Sheafer & Weimann, 2005; Weaver & Drew, 1995).

On the contrary, another line of studies has demonstrated that the news media tend to reduce political interest and increase political cynicism, and as a result, produce passive spectators rather than active participants (Leshner & McKean, 1997; Pinkleton, Austin, & Fortman, 1998). For example, Pinkleton and Austin (2001) investigated the association between general news media use and political cynicism using cross-sectional survey. They found that citizens who considered newspapers their most important source of information tended to be less cynical than others, whereas a slightly positive, but insignificant, association was found between cynicism and television news dependency. Elenbaas and de Vreese (2008) also found that media use increased the political cynicism using a survey and media content analysis. Experimental research has also demonstrated that subjects prove more cynical as a result of strategic news exposure (Cappella & Jamieson, 1997; de Vreese, 2004).

The other line of studies considers news media use as a dependent, rather than independent variable (Kaye & Johnson, 2002); these studies have elaborated the ways in which political interest and engagement enhance news media use. Since the uses and gratification model, scholars have attempted to identify the factors that may increase news media use (McLeod & Becker, 1981). For example, Neuman (1986) suggested that having knowledge of politics made individuals more likely to seek further information. Luskin (1990), too, assumed that political sophistication influenced political newspaper reading through political interest. Similarly, Scheufele (2002) argued that the impact of media messages on a citizen's participatory behavior should be highest if the person exposes him/herself to information in mass media. Therefore, as effects of news media on participation seem to be moderated by political interest.

By and large, the field still lacks a general consensus regarding the nature of the relationship between news media use and political behaviors. The theoretical predicaments, we would argue, stem from at least two reasons: First, news media use might not be a single entity. By "news media" some studies (Donsbach, 1991; Dunn, 2009; Kepplinger, 2002) refer to newspaper only, while others newspaper and TV news (Bromley & Curtice, 2004; Giglioli, 1996; Kleinnijenhuis & de Ridder, 1998; Kwak, Williams, Wang, & Lee, 2005); and recently, some studies (Eveland, Hayes, Shah, & Kwak, 2005; Shah, Cho, Eveland, & Kwak, 2005; Shah et al., 2007; Woo, Kim, & Kim, 2010) simply add the Internet news in the conceptual category of news media. The authors of the present paper suspect that the effect of the various types of news media might have different impacts on political behaviors: One type of news media, for example, may increase political interest, while other types of news media induce political cynicism. Scholars of political communication should spend more attention to the types of news media that they are dealing with. The present article; thus, carefully considers and compares the effects of

each of the three different types of media (newspaper, TV news, and Internet news) on political opinion. Second, in order to capture the effect of news media use on political behaviors, one must focus on the changes of political opinions and other behaviors. To detect such changes, analyses of longitudinal data are prerequisite. Most studies in the field of political communication, however, have relied on content analyses and cross-sectional analyses, which have limitations in specifying the changes of political behaviors for a given time period. It is somewhat of a surprise to find that so few studies are based on a set of longitudinal data, much less on latent growth modeling. The purpose of this study is two-fold: (a) To consider the effects of the various types of news media—newspaper, TV news and the Internet news—respectively; and (b) To look into the structural relationship between news media use and political behaviors¹ across time using a latent growth modeling with longitudinal data.

The authors of the present article found that the longitudinal panel data collected from the South Korean 2007 presidential campaign (August through December) would serve the purpose of this article well. During the campaign, news media, including newspaper, TV, and the Internet portal news services covered the leading candidate Lee's financial fraud scandal with a lot of time and space. For example, TV news covered the issues more than regularly scheduled news program time (Kim, 2008). The present study assumes that voters' attitude (evaluation of Lee's morality) had fluctuated along with the media coverage of Lee's financial fraud issue, which provided a window through which we may investigate the dynamic interplays between news media use and political behaviors during the campaign period.

From the beginning of the campaign, the presidential candidate, Mr Lee Myung-Bak, overwhelmingly took the lead over the other contenders: The typical poll, for example, showed that 45% of the people supported Mr. Lee, while 17% and 13% supported the other two major contenders ("Lee widens lead," 2007). Lee's morality, however, had been a central issue during the whole 2007 presidential campaign because of the alleged financial fraud scandal. The poll fluctuated along with the media coverage of fraud scandal issue, and the news media showed a strong impact especially through that specific issue: The South Korean 2007 presidential campaign provides with a quasi-experimental situation.

¹Milbrath and Goel (1977) defined political behavior as two-fold: (a) it is individuals' willingness to participate in politics, such as voting, attending campaign meetings, contributing to political organizations, writing letters to officials, and signing petitions, and (b) it is individual psychological traits reflected in a citizen's concern about a particular election outcome and associated with a sense of citizen duty, such as evaluation of political candidates. Based on Milbrath and Goel's (1977) definition, the present study defined evaluation of political candidates as a political behavior.

Political Behaviors and News Media Use

The theoretical models that explain the associations of political behaviors and news media use are so diverse, sometimes even contradictory. We would argue that these diverse theoretical models regarding the relationship between news media use and political behaviors suggest that the different types of news media might have different effects on political behaviors. Specific type of news media may positively affect political behaviors, while certain types of news media negatively affect political behaviors. For example, newspaper reading has been found positively related to various political factors such as political efficacy and political participation (Kim, Wyatt, & Katz, 1999; McLeod & McDonald, 1985; Miller & Reese, 1982). On the other hand, those who watch TV more have been found to exert lower level of social and civic participation (Norris, 1996; Robinson, 1976). Similarly, previous research found that reading newspapers rather than watching TV news is a strong factor in political engagement (Chaffee, Zhao, & Leshner, 1994; Garramone & Atkin, 1986).

While newspapers have more positive effects on political behaviors and TV news has more negative effects, the Internet news seems to have a mixed effect. Many scholars found that the Internet news media enhanced citizens' political knowledge, which in turn, increased political participation (Abramson, Arterton, & Orren, 1988; Delli Carpini & Keeter, 1996; Shah et al., 2005, 2007). Putnam (2000), however, argued that those who had access to news through the Internet tended to be engaged in less civic activities than those who gained news information from traditional mass media such as newspapers, radios, and TV. Thus, political communication scholars should pay more careful attention to the effects of the different types of media on political behaviors.

Based on the findings in the literature, the present study assumed that traditional news media (i.e., newspaper and TV news) and the Internet news would have different effects on the evaluation of Lee Myung-Bak's morality. In South Korea, the three largest and oldest major newspapers; Chosun daily, Dong-A daily, and Joongang Daily, and the largest television broadcaster, KBS (Korean Broadcasting System), are much more conservative than those small online media which exist only in the Internet. As such, the traditional news media in South Korea (newspapers and TV news) gave more sympathetic coverage to the conservative candidate, Lee Myung-Bak. Thus, the present study assumed that the use of newspaper and TV news would lead people to have more positive evaluation toward Lee Myung-Bak's morality. Indeed, one study (Min, 2008) has confirmed that newspaper reading contributed positively to the images of Lee Myung-Bak's personal traits, such as morality, integrity, trustworthiness, and compassion. Similarly, Ku (2008) also found that TV news networks carried more favorable coverage for candidate Lee Myung-Bak.

Compared to traditional media, various online news media were more liberal, and carried more negative and critical coverage toward the leading candidate Lee Myung-Bak. In addition, users of online news media could express their opinions by posting comments to the electronic bulletin boards attached to the news articles. Some of the electronic bulletin boards functioned as a sphere of deliberation where news media users exchange their opinions and information. Thus, the present study assumed that the use of the Internet news would have negative effects on the evaluation of Lee Myung-Bak's morality in comparison with traditional news media. Min (2008), for example, reported that Internet news sites negatively influenced voters' images of Lee Myung-Bak during the campaign.

Besides looking into the effects of the three types of news media (newspaper, TV news, and the Internet news) separately, the present article also maintains that the effects should be analyzed through a set of longitudinal data. For the analysis of the data, the present study employed latent growth modeling (LGM), which allows to analyze not only the strength of the association between the independent and dependent variables, but also the effects of the change rate (slope) of the independent variables on the change rate of the dependent variables. Latent growth modeling, a statistical technique based on structural equation modeling, allows capturing individual differences in individual's developmental trajectories (Duncan, Duncan, Strycker, Li, & Alpert, 1999).

With the theoretical and the methodological considerations in mind, the present study hypothesized:

H1-1. The amount of newspapers and TV news use will positively affect the overall evaluation of the leading candidate's morality during the campaign period.

H1-2. As the voters increase the amount of newspapers and TV news use, the growing rate of positive evaluation toward the leading candidate's morality will also increase during the campaign period.

H1-3. The growing rate of the amount of newspapers and TV news use will also increase the growing rate of positive evaluation toward the leading candidate's morality during the campaign period.

H2-1. The amount of the Internet use will positively affect the overall evaluation of the leading candidate's morality during the campaign period.

H2-2. As the voters increase the amount of the Internet use, the growing rate of positive evaluation toward the leading candidate's morality will also increase during the campaign period.

H2-3. The growing rate of the amount of the Internet use will also increase the growing rate of negative evaluation toward the leading candidate's morality during the campaign period.

Methods

Data Source

The present study employed a set of longitudinal data collected from the 2007 Presidential Election Panel (PEP) survey conducted by Korea Survey Research Associates for the East Asia Institution (EAI) and Seoul Broadcasting System (SBS). The Presidential Election Panel tracked the campaign dynamics over the 2007 presidential campaign using a panel design. 3,500 Adult Koreans were surveyed on a daily basis regarding topics related to the campaign and also to respondents' political attitudes and behaviors. In total, the final 2007 panel dataset contained information on 1,800 respondents, for the 51% response rate. The survey ran from March 25, 2007 through December 10, 2007. Data on a variety of demographic, social, and familial variables, including a set of items related to polling behavior, were also collected.

Sample Used for the Present Study

Since evaluation of candidates' morality was not included in the first wave (March 25, 2007; $n = 1,800$) only four waves—August 10, 2007 ($n = 1,650$, 91.7% response rate), October 17, 2007 ($n = 1,449$, 80.5% response rate), November 25, 2007 ($n = 1,368$, 76.0% response rate), December 10, 2007 ($n = 1,313$, 72.9% response rate)—of data were analyzed for the present study. A total of 1,313 citizens [649 females (49.4%), 664 males (50.6%), $M_{\text{age}} = 42.84$, $SD_{\text{age}} = 13.23$] were assessed for the present study.

Measures

The variables drawn from the EAI data set for this study included items on news media use (i.e., TV, newspaper, and Internet) and evaluation of Lee Myung-Bak's morality. The measures are as follows: News media use was measured by a single item, "How often during the last week have you gotten news about the 2007 presidential election on Newspapers (TV and Internet)?" All responses were measured on a 4-point scale ranging from 1 (*never*) to 4 (*every day*). Evaluation of candidate's morality was measured by a single item, "What is your evaluation about Lee Myung-Bak's morality?" All responses were measured on a 10-point scale ranging from 1 (*very immoral*) to 10 (*very moral*).

Statistical Analysis

First, analyses were done through latent growth modeling (LGM). When dealing with issues of quantitative change or heterogeneity in growth of some outcome variables, LGM is one of the most appropriate models.

LGM not only describes each individual's developmental trajectory, but also captures individual differences in these trajectories over time (McArdle & Epstein, 1987; Meredith & Tisak, 1990). If, for example, these trajectories produce a collection of straight lines for a group, LGM reflects individual differences in the slopes and intercepts of those lines (Duncan & Duncan, 1995). In the model of linear change, LGM can be expressed as

$$y_{it} = \alpha_i + \lambda_t \beta_i + \varepsilon_{it} \quad (1)$$

$$\alpha_i = \mu_\alpha + \zeta_{\alpha i} \quad (2)$$

$$\beta_i = \mu_\beta + \zeta_{\beta i} \quad (3)$$

Where y_{it} is the value of trajectory variable y for individual i at time t and α_i is the random intercept for individual i and β_i is the random slope for individual i . The latent growth model allows each individual i to have a distinct intercept and slope to describe the path of a variable over time t . There is captured by indexing the intercept α_i and slope β_i by individual i to show that they can differ across individuals in the sample. The λ_t is a constant, which allows the intercorporation of linear trajectories (Bollen & Curran, 2006).

The Equation (1) represents individual change over time, whereas the Equations (2) and (3) represents inter-individual differences in change. Specifically, α_i and β_i represent the mean intercept and mean slope across all individuals in the sample. The Equation (2) represents the individual intercept α_i as a function of the mean of the intercepts for all individuals μ_α and a disturbance $\zeta_{\alpha i}$. Similarly, the Equation (3) represents the individual slope β_i as a function of the mean of the slopes for all individuals μ_β and a disturbance $\zeta_{\beta i}$. The $\zeta_{\alpha i}$ and $\zeta_{\beta i}$ are disturbances with means of zero and assumed to be uncorrelated with (see Bollen & Curran, 2006, p. 20). The three equations above are typical unconditional latent growth model.

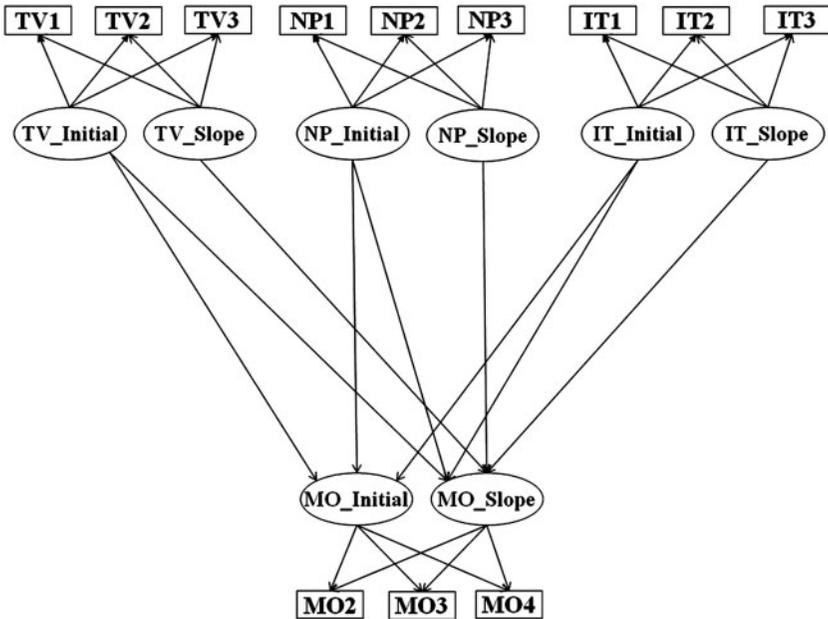
For the present study, a linear latent growth model was developed in which news media use (i.e., newspaper, TV, and Internet) and evaluation of Lee Myung-Bak's morality were modeled in the latent variable with repeatedly measured indicators. Since this model did not include any predictors, it was referred to as an unconditional linear model. Second, by incorporating the dimensions of news media use as independent variable and evaluation of Lee Myung-Bak's morality as dependent variable into the unconditional model, a conditional model was developed (Figure 1).

Missing Data

As with most longitudinal data studies, some participants were unavailable during one or more data collection periods for the EAI and SBS data.

Figure 1

The conditional (hypothetical) model. Note: TV, TV news use; NP, newspaper news use; IT, Internet news use; MO, evaluation of Lee Myung-Bak's morality



Since listwise-deletion and pairwise-deletion can result in biased parameter estimates due to nonrandom attrition (Arbuckle, 1996), the present study employed the full-information maximum-likelihood (FIML) estimation, which has been found to be very efficient for incomplete data (Schafer & Olsen, 1998). However, to employ the FIML, the normality assumptions of the data must satisfy (Arbuckle, 2007). With regard to of the FIML estimation, we investigated the normality of each variable in terms of its kurtosis and skewness. According to the guideline of normality (i.e., skewness < 2; kurtosis < 4) proposed by West, Finch, and Curran (1995), results may be distorted when the assumption of normality is severely violated. The normality assumption, however, was well met for all the variables used in our model. Descriptive statistics of indicators are presented in Table I.

Results

To test whether latent variables had the same interpretation at each time point, the present study developed Model 1, in which factor loadings of measured variables over time were constrained to be equal (Figure 2). We also developed an unconditional latent growth model (Model 2) to identify the functional form of each variable's growth. In this model, the first indicator

Table I
Overall Descriptive Statistics

	<i>M (SD)</i>	Skew	Kurtosis
TV ₁	3.158 (0.953)	-.779	-.552
TV ₂	3.248 (0.907)	-.860	-.433
TV ₃	3.378 (0.861)	-1.183	.363
NP ₁	2.617 (1.273)	-.160	-1.652
NP ₂	2.615 (1.263)	-.160	-1.633
NP ₃	2.684 (1.284)	-.246	-1.642
IT ₁	2.213 (1.222)	.391	-1.453
IT ₂	2.365 (1.274)	.191	-1.643
IT ₃	2.466 (1.289)	.049	-1.699
MO ₂	4.990 (2.450)	.199	-.330
MO ₃	5.271 (2.453)	.061	-.339
MO ₄	5.395 (2.550)	-.080	-.519

Note. TV, TV news use; NP, newspaper news use; IT, Internet news use; MO, evaluation of Lee Myung-Bak's morality.

(i.e., measured in the second-wave survey) was selected as the reference indicator, and its loading was fixed to 1 at each time point to scale the achievement latent variable. The loadings of the intercept factor were set to 1, which represents the starting point of the growth curve at Time 1, and the loadings of the slope factor were set to 0, 1, and 2 for three time points, which represent the linear growth function (Figure 3).

The present study compared Model 1 and Model 2 using the model-fit indexes of RMSEA and TLI. In terms of TLI and RMSEA, each aspect of Model 2 fit better, indicating that the equality constraints of factor loadings over time were not valid. Results are summarized in Table II. The results indicated that news media use and evaluation of Lee Myung-Bak's morality were growing linearly during the 2007 Korea presidential campaign.

After identifying the unconditional latent growth model (Model 2) for each latent variable, the present study developed a conditional model to test the potential effects of the three dimensions of news media use (i.e., TV news use, newspaper use, and Internet news use) on evaluation of Lee Myung-Bak's morality (both initial status and growth). The fit of the hypothesized conditional model was acceptable [$\chi^2(43, n = 1,199) = 303.134, p < .001, TLI = .932, RMSEA = .068$].

For effects of the initial level of TV news use, both the path to the initial amount of evaluation of Lee Myung-Bak's morality ($\beta = .126, p < .01$) and the path to the slope value of evaluation of Lee Myung-Bak's morality ($\beta = .238, p < .001$) were significant. For effects of the slope value of TV news use, the path to the slope value of evaluation of Lee Myung-Bak's morality was not significant ($\beta = -.139, p = .195$). For effects of the initial level of newspaper

Figure 2
Latent non-growth model

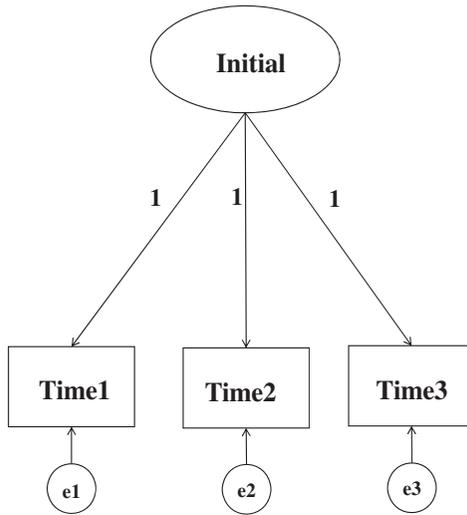
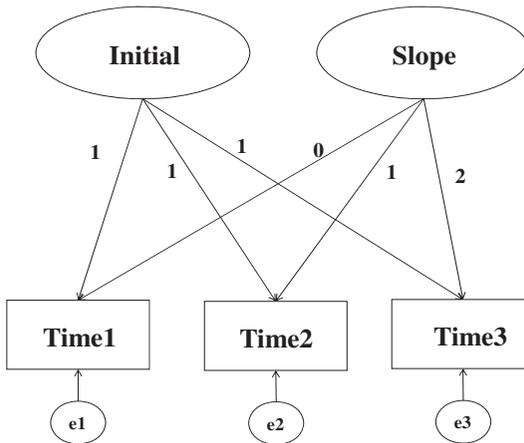


Figure 3
Latent growth model



news use, both the path to the initial amount of evaluation of Lee Myung-Bak's morality ($\beta = .027$, $p = .461$) and the slope value of evaluation of Lee Myung-Bak's morality ($\beta = 0.081$, $p = .194$) were not significant. For effects of the slope value of newspaper news use, the path to the slope value of evaluation of Lee Myung-Bak's morality was also not significant ($\beta = .03$, $p = .717$). For effects of the initial level of Internet news use, the path to

Table II

Comparisons of Fit Indices for Non-Growth (Model 1) and Growth (Model 2) Models

Latent variable	χ^2	df	p	TLI	RMSEA	Initial		Slope	
						Mean	Variance	Mean	Variance
TV									
Model 1	96.083	4	.000	.934	.132	3.274***	.435***		
Model 2	.972	1	.324	1.000	.000	3.151***	.533***	.112***	.076***
NP									
Model 1	37.024	4	.000	.976	.079	2.639***	1.167***		
Model 2	2.460	1	.117	.996	.033	2.602***	1.092***	.037**	.089**
IT									
Model 1	111.046	4	.000	.912	.143	2.356***	1.084***		
Model 2	1.257	1	.262	.999	.014	2.222***	1.072***	.123***	.137***
MO									
Model 1	66.808	4	.000	.939	.109	5.236***	3.933***		
Model 2	2.463	1	.117	.994	.033	5.023***	3.573***	.197***	.268***

Note. TV, TV news use; NP, newspaper news use; IT, Internet news use; MO, evaluation of Lee Myung-Bak's morality. * $p < .05$; ** $p < .01$; *** $p < .001$.

the initial amount of evaluation of Lee Myung-Bak's morality was significant ($\beta = -.252$, $p < .001$), but the path to the slope value of evaluation of Lee Myung-Bak's morality was not significant ($\beta = -.058$, $p = .340$). For effects of the slope value of Internet news use, the path to the slope value of evaluation of Lee Myung-Bak's morality was significant ($\beta = -.163$, $p < .05$). The results are summarized in Table III.

Discussion

The theoretical models explaining the associations of news media use and political behaviors are so diverse. The present paper argued that the reasons of the theoretical predicaments are: (a) the different types of news media might have different effects on political behaviors; (b) the effects of news media use on political behaviors should be examined through longitudinal data. The primary aim of this study is to consider the effects of the various types of news media and to look into the structural relationship between news media use and political behaviors across time using a latent growth modeling with longitudinal data. For the present study, we separately analyzed the effects of different types of news media on the evaluation of the leading candidate Lee Myung-Bak's morality using latent growth modeling with longitudinal data. The findings are summarized below:

First, newspaper use (the increase as well as the amount of use) did not show a powerful effect on the evaluation of the leading candidate's morality.

Table III
Standardized Path Coefficients of the Hypothetical Model

Parameters	Path coefficient
TV news use Initial → Evaluation of Lee Myung-Bak's morality Initial	.126**
TV news use Initial → Evaluation of Lee Myung-Bak's morality Slope	.238***
TV news use Slope → Evaluation of Lee Myung-Bak's morality Slope	-.139
Newspaper news use Initial → Evaluation of Lee Myung-Bak's morality Initial	.027
Newspaper news use Initial → Evaluation of Lee Myung-Bak's morality Slope	.081
Newspaper news use Slope → Evaluation of Lee Myung-Bak's morality Slope	.030
Internet news use Initial → Evaluation of Lee Myung-Bak's morality Initial	-.252***
Internet news use Initial → Evaluation of Lee Myung-Bak's morality Slope	-.058
Internet news use Slope → Evaluation of Lee Myung-Bak's morality Slope	-.163*

Note. TV, TV news use; NP, newspaper news use; IT, Internet news use; MO, evaluation of Lee Myung-Bak's morality. * $p < .05$; ** $p < .01$; *** $p < .001$.

Contrary to the previous studies by Norris (1996) and Putnam (1995), people who read more newspapers were not more actively involved with civic activities. Previous studies also suggested that reading newspapers were a strong factor in political behavior (Chaffee et al., 1994; Garramone & Atkin, 1986; McLeod & McDonald, 1985; Miller & Reese, 1982). Shah, McLeod, and Yoon (2001), for instance, observed the positive influence of newspapers on civic participation.

Second, TV news use (the increase as well as the amount of use) had positive influences on the evaluation of the leading candidate's morality. Norris (1996) reported that those who watch TV more have been found to exert lower level of social and civic participation. It was also argued that television promotes political apathy and cynicism (Robinson, 1976). In the same vein, Putnam (1995) suggested that TV watching is the culprit of lowered political behavior, as those who TV watching more shows lower level of social activities and civic engagement. Similarly, Patterson and McClure (1976) concluded that TV news coverage of presidential campaigns had virtually no political impact. A host studies, on the contrary, found that TV watching could positively relate to knowledge of public issues, political

efficacy, and participation (McLeod & McDonald, 1985; Scheufele & Shah, 2000; Woo & Kim, 2010).

Third, the Internet news use (the increase as well as the amount) showed more negative effects on the evaluation of the leading candidate's morality. Many scholars found that the Internet news media enhanced citizens' political knowledge, which in turn, increased political participation (Abramson et al., 1988; Delli Carpini & Keeter, 1996; Shah et al., 2005; Shah et al., 2007). Norris and Jones (1998), for instance, reported that informational use of the Internet encouraged community involvement and promoted civic participation. Woo and Kim (2010), too, found that the Internet news use increased political participation.

In conclusion, newspaper use has less impact to the evaluation of the leading candidate's morality, while TV news use has a positive effects and the Internet news has a more negative effects. The present study infers the difference between the newspapers and other two types of news media from the subscription of newspaper. Because of subscription, it is not easy to change the amount of use for the newspaper. On the other hand, the amount of use for TV news and the Internet news is easier to change the amount of news media use. During the campaign period, voters tended to increase the amount of news media use, however, for the newspapers, it is relatively harder to increase than other types of news media.

Consequently, the findings suggest that the effects of different types of news media should be analyzed separately and that longitudinal data should be employed along with an appropriate statistical analysis such as latent growth modeling. The significance of the present study is that through the latent growth modeling, the different increase rates of the amount of news media use were identified and the effects increase rates were also detected.

Several limitations of the current study serve to direct future research. First, this study looked at only a few variables related to political behavior, especially the evaluation of Lee Myung-Bak's morality; this limitation can be overcome by adding more variables in future research. Second, the study encompassed a narrow cultural range. Future studies empirically examining cultural differences from an advanced theoretical perspective could lead to a better understanding of news media use and political behavior. Third, the present study cannot prove the causal relation between news media use and political behavior. Therefore, it is recommended to identify the causal direction between news media use and political behavior for more sophisticated theory and research designs, such as auto regressive cross-lagged model (ARCL). ARCL, the approach to evaluate causal sequence based on structural equation modeling, allows researchers to identify causal constructs. Fourth, the present study overlooked the unstable characteristics of the evaluation of Lee Myung-Bak's morality, although we identified the change of the

evaluation of Lee Myung-Bak's morality during the Korean 2007 presidential campaign. Therefore, future studies should consider the complex of real-time change of the evaluation of political candidates for more advanced research designs, such as continuous time model.

Appendix A

Items for news media use and the evaluation of the presidential candidate Lee Myung-Bak's morality

	Items
News Media Use	<ol style="list-style-type: none"> 1. How often during the last week did you read the news stories about the 2007 presidential election on Newspapers? 2. How often during the last week did you watch news stories about the 2007 presidential election on TV? 3. How often during the last week did you read news stories about the 2007 presidential election on the Internet?
Morality	What is your evaluation of Lee Myung-Bak's morality?

Source: The 2007 Korean Presidential Election Panel (PEP) survey conducted by Korea Survey Research Associates for the East Asia Institution (EAI) and Seoul Broadcasting System (SBS)

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