

Political Use of Twitter among Korean Assembly Members

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DEDICATION

This is thesis dedicated to my great parents and lovely family.

You have my unending gratitude.

(이 논문을 사랑하는 부모님과 동생 가족에게 바칩니다.)

ABSTRACT

The present research explores the differences in personal characteristics related to Korean Assembly members and constituency characteristics related to the digital divide between Korean Congresspeople using twitter and those not using twitter, and the effects of those characteristics on Korean politicians' communication activity on twitter.

The results are inconsistent with previous research about political adoption of web technologies. Among five variables employed in most previous research (age, party status, party type, race competitiveness, and experience in politics), only the mean for age is significantly different between groups. The mean for new variable added in the present research, the number of appearances in television news, which implies the popularity of Assembly members, however, is significantly different. Among constituency variables related to the digital divide (the proportion of male voters, the proportion of voters older than fifty, the proportion of voters with higher than college degree, the proportion of office workers, Internet penetration, and Income), the proportion of male voters and those with higher than college degree, the proportion of office workers, and Internet penetration are significantly different between Korean politicians using twitter and those not using twitter.

In terms of the effects of two groups of variables on Korean Assembly members' communication activity on twitter, the linear regression model including personal characteristics related to politicians accounts for more variances in twitter activity than the model consisted of constituency characteristics related to the digital divide. In

specific, the number of appearances in television news has a higher impact on twitter communication than any other variables.

The first implication of the present study is that in a country like South Korea where Internet penetration levels are high and fairly equal across the districts, it is unlikely that access to the Internet is not a detrimental element influencing political use of twitter. The second is that while a lot of the excitement around twitter and other digital communication technologies assumes that it will change everything, the present study goes against the grain of those who predict that twitter or other new technologies will revolutionize or democratize political communication. The last implication of this study is that the diffusion of innovation or the digital divide research is not as useful theoretically in a country like South Korea or at a time when getting access to the Internet is not as expensive.

TABLE OF CONTENTS

LIST of TABLES	vi
CHAPTER ONE: Introduction	1
CHAPTER TWO: Literature Reviews	5
Social Media	5
Social Network Sites	6
Micro Blogs	7
Political Use of Social Media	10
Relative Advantages of Twitter and Political Adoption	12
Digital Divide and Political Adoption of Twitter	17
CHAPTER THREE: Methodology	24
Data	24
Variables	25
Analysis	27
CHAPTER FOUR: Results	28
Description of Data	28
Differences in Personal Characteristics	30
Differences in Constituency Characteristics	32
Personal Characteristics and Twitter Activity	34
Constituency Characteristics and Twitter Activity	36
CHAPTER FIVE: Discussion	39
BIBLIOGRAPHY	47
APPENDICES	55

LIST OF TABLES

<Table 1> Variables and Operational Definitions	25
<Table 2> Descriptive data on the 18 th Assembly members and Adoption of Twitter	28
<Table 3> Descriptive data on Constituencies	29
<Table 4> Degree of Assembly member's communicational activities on Twitter	29
<Table 5> Differences in Personal Characteristics	30
<Table 6> Differences in Constituency Characteristics related to the Digital Divide	33
<Table 7> Effects of Personal Characteristics on Twitter Activities	34
<Table 8> Effects of Constituency Characteristics on Twitter Activities	36
<Table 9> Effects of Personal Characteristics on Twitter Activities (Only for Representatives for Districts, N = 101).....	55
<Table 10> Effects of Personal Characteristics on Twitter Activities (Only for Proportional Representatives, N = 17).....	55

CHAPTER ONE: INTRODUCTION

Needless to say, the rapid development of information technology has been changing the ways in which people communicate with each other. In particular, beyond the traditional one-to-one pattern of online communication, we are living in the many-to-many pattern of online communication. As of March 2011, there are more than 500 million facebook users worldwide (www.facebook.com/press/info.php?statistics) and according to RJMetrics (2010), more than 75 million people were using twitter globally up until the end of 2009.

Social media is an innovation rapidly being diffused in society with the exponential distribution of another innovation, smartphones. Neilson (2010) announced, as of the fourth quarter 2009, 21% of American wireless subscribers is using smartphones and the proportion will increase up to 50% by the end of 2011. In addition, J.D.Power (2011) reported that smartphone owners using their devices to access social media sites tend to feel more satisfaction than those not using social media sites on their devices. Therefore, the diffusion of social media is a social phenomenon not only we have gone through until present but also we will have to experience in the future. It is the thing in the past, in the present, and in the future.

As indicated by brief statistics above, social media has become very popular and one of the essential parts of individual's every communication behavior. The exponential growth of social media has been also increasing its potential for political communication. To illustrate, in the Dutch, candidates incorporated the largest Dutch social network site,

Hyves (hyves.nl), as a part of their campaign strategies for the general election in 2006 (Utz, 2009). More recently, in the U.S presidential election 2008, Barack Obama employed social media much more actively than his counterpart, John McCain (Abroms & Craig, 2009). Many political analysts have said that Barack Obama became aware of the trend of social media diffusion earlier than his counterparts and his online communication strategy for presidential campaign gave him a historical success.

There are few studies about political use of social media. But there are some studies investigating why politicians adopt web technologies based on the theory of the diffusion of innovation. Rogers (1995) suggests that an innovation perceived by an individual as having more relative advantages will be adopted more rapidly than other innovations. Based on such a theoretical suggestion, they show that politicians adopted web technologies as their campaign tools when they perceived innovative web technologies have more relative advantages such as interactivity (Utz, 2009) and a potential to provide significant benefits to minority or marginalized politicians (Park & Kluver, 2009) than traditional forms of media.

The perceived advantages of the Internet vary depending on each politician's characteristics. Some research about political adoption of the Internet focused on politician-related variables such as politician's age, gender, race, years in politics, party affiliation, and fund raising which might influence the relative advantages of the Internet perceived by a politician. On the other hand, other research explored constituency-related variables such as composition of age, gender, education level, income, Internet

penetration of a candidate's district that might also influence political adoption of the Internet.

The present study follows these research traditions. Similar to the studies about political adoption of the Internet conducted about 10 years ago when web technologies were actively distributed, adoption of social media in politics should be studied at present because social media use is exponentially expanding among citizens at a different rate depending on their characteristics including socio-economic status. The diffusion of innovation is still in progress in a similar way of the diffusion of the Internet about 10 years ago. Besides, in order to get more popularity from voters and to be elected from the districts, a politician should try to seek efficient ways to communicate with as many electorates as possible. Accordingly, political adoption of newly emerged communication media is highly affected by the fact of how many people use the specific media in the electoral district.

At the same time, in terms of the equal opportunity to participate in political process, we need to study what factors influence political use of new media from the perspective of the digital divide because, currently, the cycle of the advent of new media technology and its diffusion have been enormously shortened and thus, political opportunities of people who lag behind in adapting themselves to new media might be relatively fewer than those who are familiar with the up-to-date technology. In other words, the digital divide leads to political divide in a society (Keum & Cho, 2010). Therefore, for such reasons, it is very important to examine political use of social media just at present.

In addition, much of previous research about political adoption and use of the Internet have been restricted to the United States (Schweitzer, 2008; Park & Kluver, 2009) even though other regions in the world are also technologically advanced. For example, Internet penetration in South Korea is higher than in the United States. As of 2010, while Internet penetration in South Korea is 81.1%, in the United States is only 77.3% (Internet World Stats, 2010). And only a few of studies about the use of social media in political area have been conducted in the United States (Abrams & Craig, 2009), in South Korea (Keum, 2010; Keum & Cho, 2010), and in Netherlands (Utz, 2009) because the social media has been diffusing recently worldwide.

The present study examines political use of social media, in specific, incumbent Korean Assembly members' adoption and their use of social media, twitter, as a usual communication tool in terms of the diffusion of innovation and the digital divide. By investigating politician- and constituency-related variables influencing political use of twitter, this research shows whether or not political use of social media takes on similar aspects to previous use of the Internet for political purposes.

CHAPTER TWO: LITERATURE REVIEW

Social Media

With the advent of Web 2.0 paradigm of the Internet, social media have come into the spotlight in recent years. They are continuing to gain popularity around the world. Social media are media for social interaction. Through social media, users are able to share information, co-create contents, and express their own opinion under the many-to-many communication environment. Social media perform functions of maintaining or strengthening existing social networks, and in some cases, connect people who are total strangers based on common interests, and political point of views and activities (Keum, 2010; Kim et al, 2011). Social media could be used by people who have heterogeneous backgrounds, and also, employed by homogeneous people in terms of language, race, gender, religion, nationality, and so on (Boyd & Ellison, 2008). Social media have brought many changes in contemporary trend of Internet use. While people utilized the Internet primarily for information seeking, entertainment, and online banking before the emergence of social media, social media users are placing more emphasis on online activities such as self-expression, mutual communication, and relationship (Keum, 2010). In the present research, social media has been divided into two groups, Social Network Sites (SNSs) and Micro-blogs, based on differences in their technological ways of operation.

Social Network Sites (SNSs)

Social network sites are “web-based services that allow individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections and those made by others within the system” (Boyd & Ellison, 2008, p. 211).

Social network sites have successfully combined almost all functions of the Internet such as email, instant messaging, website creation, blogging and multimedia content sharing (Livingstone, 2008). Through social network sites, people can enjoy almost all online activities in a venue. Thanks to the rising popularity of social network sites amongst people, other websites provide users with functions to share online contents with others in social network sites.

Since the launch of the first social network site, SixDegrees.com, in 1997 (Boyd & Ellison, 2008), hundreds of thousands of people in the world have been enjoying social network sites such as facebook, MySpace, and twitter ubiquitously via computers and mobile devices. They integrate social network sites into their daily practices for constructing and maintaining social relationships (Choi et al., 2010). In addition to relational purposes of social network sites, people are using them with various purposes such as seeking social supports from online social network groups (Bender et al., 2011; Kim et al., 2011), participating in political activities by posting a politically oriented status update and becoming a fan of a candidate (Zube et al., 2011), obtaining information (Kim et al., 2011), self-presentation (Ong et al., 2010), consuming leisure

(Arora, 2011), surveillance of intimate partners for controlling them in romantic relationships (Tokunaga, 2011; Burke et al., 2011).

All of such motives for use of social network sites are fundamentally based on the relational aspect of their functions. Therefore, the way of forming relationship is one of the essential characteristics of social media. In particular, the relationship between users in most social network sites can be formed by mutual consent from users who want a relationship. On top of that, technically, most social network sites enable people to enjoy various online activities such as short or long conversation, sharing photos and movie clips with online friends by providing functions emphasizing building and managing a relationship. Another kind of social media such micro-blogging as twitter, however, has technically different features from average social network sites.

Micro Blogs

Micro blogs have also been expanding its role and area as a new type of interactive communication channel since its creation in 2006. Among various micro blogs, twitter is the most representative in the world. Twitter has been growing at the fastest increasing rate, from 1 million unique visitors in June 2008 to 21 million in June 2009 (Nielsen Wire, 2009). Additionally, according to RJMetrics (2010), as of the end of December 2009, the number of twitter users was over 75 millions globally.

Technically, micro blogging provides users with different functionalities than those of average social network sites. Due to its unique functionalities, micro blogs have unique characteristics, which have driven its success (Kaplan & Haenlein, 2011).

First of all, micro blogs are capable of transmitting only less than 140 characters at a time. They allow people to exchange only small elements of content like short sentences, a small piece of image, and a link to website or clips. In general, micro blogging takes up smaller data traffic than social network sites and thus, micro blogs are more suitable for mobile devices. Consequently, micro blog users are able to post short messages regarding their own interests or insignificant daily affairs but not likely to be relevant to others at anytime without burden of data traffic. This technical functionality of micro blog is very closely concerned with the concept of ambient awareness. Kaplan and Haenlein (2011) explain the concept of ambient awareness is “Just as physical proximity allows one’s mood to be interpreted through a series of little behaviors, several tweets together can generate a strong feeling of closeness and intimacy. Due to ambient awareness, applications such as twitter result in relatively high levels of social presence.”

Second, unlike average social network sites, the way of forming a relationship in micro blogs does not need mutual consent from users who want relationships with others. Without other’s compliance with a request to be a friend, the unique relationship in micro blogs can be formed. Through this unique relationship, users are able to opt to follow others and to get various messages about events of others’ casual lives and links to news stories. That is, in micro blogs, users can be a follower of others or someone followed by others at the same time. Therefore, the number of followings and that of followers are not always same. In general, while ordinary twitter users are following a dozen people, celebrities like politicians and opinion leaders have more followers than them (Kaplan & Haenlein, 2011). In addition, as soon as all messages are posted they become public

knowledge. Consequently, this enables micro blogs to be a perfect sphere for virtual exhibitionism and voyeurism (Kaplan & Haenlien, 2011). Schau and Gilly (2003) and Ledbetter (2009) suggest that as people have higher tendency of self-disclosure or self-presentation, they have more inclination to participate in online communication activities. Baruh (2009) identifies media contents holding more voyeuristic elements draw more audiences. The fact that there are more passive users in micro blogs than in social network sites (Kaplan & Haenlien, 2011) also proves the reason indirectly why micro blogs are rapidly growing.

Besides these two unique natures derived from the technical characteristics of micro blogs, mobile-friendly functionality and the unique way of forming a relationship, the exponential growth of the diffusion of mobile devices such as smartphones and tablet PCs has fueled up the rapid increase of the number of micro bloggers. Nielsen (2010) expected that the penetration of smartphones in the United States would make up to 49% of mobile phone subscribers by the end of 2011.

The combination of the unique features of micro blogs and the rapid spread of mobile devices has been increasing the influential power of micro blogs in terms of dissemination of the breaking news. For example, on June 25, 2009, when Michael Jackson died of cardiac arrest in California, twitter played a vital role in spreading the breaking news. Twitter users exchanged numerous messages about his abrupt death at a rate of 100,000 per hour (Kaplan & Haenlien, 2011). Another example showing the potential of micro blog is the 7.0 magnitude earthquake in the Haitian capital of Port-Au-Prince on January 12, 2010. After reports of the earthquake, twitter users posted

questions about relief efforts in Haiti and established dialogue between the organizations and individuals involved in the recovery (Smith, 2010). Most recently, the news Osama Bin Laden was shot dead by the U.S forces in Northern Pakistan leaked out through twitter when the President Barack Obama wrote a script for broadcasting (Stelter, 2011, May 1), and before that, a Pakistani working as an IT consultant broadcasted the raid live in real time via his micro-blog page, twitter (Olson, 2011, May 2).

Political Use of Social Media

Social media has been actively employed for political purposes and has shown its potential for political communication. In the U.S presidential election 2008, the candidate Barack Obama utilized social media more strategically than his counterpart, John McCain. The statistics shows big differences in social media use between them. While McCain had 620,359 facebook friends, Obama had 2,379,102 friends in the same venue. In twitter, 112,474 of citizens followed Obama but McCain had only 4,603 followers (Abroms & Craig, 2009). It is dominant opinion that such big differences in employing social media as a part of campaign strategies between two major candidates resulted in Obama's victory in 2008 presidential election because, by using social media, Obama was very successful in mobilizing supporters systemically to vote for him (Keum & Cho, 2010).

In South Korea, on April 27, 2011, an Assembly by-election was held to fill the vacancy. In the by-election, all candidates who tweet more actively and have more followers than their opposites won the election (Nam, April 28, 2011). Many Korean

political commentators analyzed such results that twitter played a pivotal role in motivating young generation not interested in politics to participate in the election. That is, it means candidates' twitter communication successfully appealed to Korean young generation and increased the voter turnout to 43.5%, which is the highest ever in by-election history in South Korea (Kim, April 27, 2001).

For enthusiasts, social media's potential for political communication is largely based on its technological features for information sharing through dialogic conversation (Grant et al., 2010). In other words, social media has been regarded as vehicles enabling reciprocal, direct and transparent communication between political celebrities and citizens. However, contrary to general expectation about social media, through twitter, U.S Congresspeople are primarily focusing on dispersion of information such as links to news articles about themselves, to their blog posts, and to report on their daily activities (Golbeck et al, 2010). Politicians are reluctant to have dialogic conversation via social media (Macnamara, 2008). Thus, to improve its conversational strengths like reciprocity, transparency, and directness, non-government organizations such as "TweetCongress (www.tweetcongress.org)" are working to guide twitter users to politicians' twitter pages. Theoretically, we are having difficulties in concluding that politician's twitter communication has had a strong impact on the increase of people's attention to politics and their participation in political affairs due to the lack of in-depth research. However, empirically, we can observe a few of examples for the role of social media in political communication in contemporary society.

Relative Advantages of Twitter and Political Adoption

To spread information about their political ideology, policy positions, qualifications, career, and personal achievements to citizens, politicians should employ media as a communication tool actively and strategically. In the rapidly changing communication environment, political decisions about what kinds of media they will use and how they will distribute their limited resources including time and money among various media have become more sophisticated than in the past because contemporary trend of media use among citizens has been differentiated and, in addition, newly emerged media offer novelty that existing media have not provided to politicians.

The Internet has played an essential role in political communication since its commercial advent in 1995. In particular, the World Wide Web (WWW) was initially employed as a new way to reach educated and high-income citizens and to address the electorate directly in election campaign 1996 (Epstein, 1996). Since then, Internet use for political purposes has become a universal phenomenon. Regardless of their positions such as incumbent and challenger, almost all politicians are now utilizing web technologies to spread their political agendas and to improve their communication potential because the Internet's novelty not available in most traditional forms of media offers them a new way of communication (Druckman et al., 2007). As a result, the Internet has deeply permeated in contemporary politics (Foot & Schneider, 2006).

The Internet provides politicians with new technological options for communication and information presentation as well as direct and inexpensive access to people

(Druckman et al., 2007). Consequently, when considering if they embrace new media as one of political communication tools, politicians should assess natures of new media from various points of view. In order to adopt the Internet as a political communication tool, the relative advantages of the Internet perceived by politicians should be greater than those of traditional media. Rogers (1995) defines the relative advantages as “the degree to which an innovation is perceived as better than the idea it supersedes.” It can be estimated in terms of social prestige, convenience, and satisfaction as well as an economic aspect (Rogers, 1995).

Various web technologies have been adopted by politicians as one of political communication tools based on the assessment of relative advantages of it (D’Alessio, 2000; Druckman et al., 2007). When considering whether or not they employ web technologies for campaigns, most politicians analyzed cost and benefit in using given web technologies. D’Alessio (2000) shows more web sites were established in 1998 election than in 1996 because, apart from in 1996, most minor parties decided to give candidates access to their servers in 1998 election and, in turn, it decreased a candidate’s individual cost for a web site. In order to employ a web site as a communication tool, an individual politician should estimate the cost for design and development, Internet server, maintenance, and so on. Therefore, organizational decision of a party on whether providing their member with all conveniences for establishing a web site might be a detrimental element of the adoption of a web site. As shown by previous research, candidates affiliated with major parties have more inclination to adopt a web site as a campaign tool than nominees from minor parties and independent candidates (D’Allesio,

2000; Druckman et al, 2007; Herrson et al., 2007) because, in large part, major parties have more financial resources than minor parties. However, that might not be the same case in twitter because, unlike the use of a web site, a politician is able to use twitter by only opening an account in twitter.com without payment. That is, there is no cost for using twitter for political communication. Therefore, there might be no difference in adopting twitter as a political communication tool between politicians affiliated with major parties and those with minor parties.

In addition, political communication strategies can vary depending on whether the party with which a politician is affiliated seizes current power or not. Assembly members in the ruling party have more advantages to use governmental authority to dilute unfavorable political issues than those in the opposite party and thus, they might be reluctant to communicate with people directly via online channels. On the other hand, Assembly members in the opposite party would put more efforts in forming and stirring up public opinion favorable for their ideology to be against the ruling party's and to formulate their idea into policy for implementation. Therefore, whether Assembly members are affiliated with the ruling party or the opposite might affect their adoption of twitter as a direct communication channel. The present study's expectation is that Congresspeople in the opposite party would perceive more relative advantages of twitter as a political communication tool than those in the ruling party.

Among various innovative features of web technologies, interactivity is the most distinguishable feature of the Internet from traditional forms of political media. In terms of interactivity, the political adoption of web technologies is depending upon the level of

race competitiveness (Druckman et al., 2007). The more competitive a race is, the less likely candidates embrace the interactive functions of the Internet because they think if they incorporate interactive functions into their web sites they would not be able to control information circulated via online sphere. Twitter is one of the most interactive media. Twitter provides people with interactive functions to communicate instantly and massively. Therefore, politicians elected from competitive districts would perceive lower level of relative advantages of twitter and thus less likely to adopt twitter as a political communication tool. In other words, the competitiveness of election would be higher in politicians not using twitter than in those using twitter.

Experience in politics is one of the elements influencing the adoption of the Internet. Herrnson and his colleagues (2007) show that candidates with plenty of political experiences are less likely to adopt web technologies than those with relatively less political experiences. In political campaign, incumbency status affects decision on the adoption of newly emerged technologies (D'Allesio, 2000; Druckman et al., 2007). Challengers have a stronger inclination to adopt web technologies than incumbents because they perceive more relative advantages in reaching more people and in building online presence on the web. Therefore, this study expects that the less experiences Assembly members have, the higher propensity to adopt twitter as a communication tool they have. In line with the effect of political experiences, Assembly member's age might be a detrimental element influencing the political adoption of newly emerged technologies. Because elderly citizens are less likely to depend on new technologies

(Herrnson et al., 2007), it is also reasonable to anticipate that the younger Assembly members are, the more likely they adopt twitter as a political communication tool.

Among the various channels useful for citizens to get information about politics, broadcasting is the most influential channel in increasing not only people's knowledge about political issues, politicians' stance on those issues, and celebrities themselves but also interest in politics (Weaver & Drew, 2001). People have tended to pay more attention to politicians who appear in television news more frequently. As a result, politicians appearing in television news more frequently become familiar with average citizens more easily. Perceived media importance increases political involvement and, in turn, political involvement is positively associated with political efficacy (Pinkleton & Austin, 2001). Citizens with higher political efficacy have more inclination to participate in political communication, and would encourage politicians to launch new and additional communication channels such as twitter. Accordingly, the present study hypothesizes that politicians employing various channels for communication would more frequently appear in broadcasting media.

The present study has interest in exploring the effects of personal characteristics related to Assembly members on twitter activities. The implications of twitter activities are how actively and effectively Assembly members are utilizing twitter as a communication channel and how much communicational power their twitter accounts have. Consequently, the research question is presented as follows.

RQ 1: What effects personal characteristics related to Assembly members have on the activeness, leverage and efficiency of political communication on twitter?

In addition, six primary hypotheses derive from the discussion of the perceived relative advantages of adoption of twitter.

H₁: There would be no difference in adopting twitter as a political communication tool between Assembly members affiliated with major parties and those with minor parties.

H₂: The number of Assembly members who use twitter in the opposite party would be more than that of the ruling party.

H₃: The competitiveness of election would be higher in Assembly members not using twitter than in those using twitter.

H₄: Assembly members using twitter would have less experience in politics than those not using twitter.

H₅: Assembly members using twitter would be younger than those not using twitter.

H₆: Assembly members using twitter would appear more frequently in broadcasting media than those not using twitter.

The Digital Divide and Political Adoption of Twitter

The difference in the pace of diffusion of the Internet results in a social phenomenon, which is called as the digital divide. The concept of digital divide refers to the divide caused by the difference in access to the Internet or other digital media depending on gender, age, income, education, race, region, and so on (Katz & Rice, 2002). Socio-economic status is closely associated with the informational use of the Internet (Wei &

Hindman, 2011). Previous research about the digital divide suggests that most Internet users are male, younger, well educated, and high-income (Greenbrook-Held & Morrison, 2011; Kim & Jeong, 2010; Pan et al., 2011; Reisdorf, 2011). The digital divide due to the socio-economic status raises many problems in equal opportunity to participation in political activity. Norris (2001) defines this kind of digital divide as the demographic divide, which refers to “the difference between those who do, and do not, use the panoply of digital resources to engage, mobilize, and participate in public life.”

The demographic divide due to the difference in access to digital media is very relevant to the distribution of political and economic power in contemporary society (Norris, 2001). Among novelties the Internet provides to public, interactivity is the most distinguishable feature. In addition, there is tons of information in the Internet available to anyone who just can access to the Internet. Consequently, citizens who can afford to use the Internet are more likely to have more opportunities to get useful information and to express their own opinions via online space than those who cannot. As a result, through the democratic processes, the influential power of those who are capable of accessing to digital media on the final decision on community issues would be higher. This circulation would produce another inequality of people’s life. The digital divide is one of the essential issues in digitalized society because individual’s ability to handle digital devices and to access to information in the digital world determines one’s economic success, opportunities for education and civic engagement, and full access to social networks (Norris, 2001).

Political decision on whether to adopt specific media as a communication channel or not is highly affected by characteristics of constituency (Druckman et al., 2007) because, strategically, relevant information should be placed in the electorate-specific media in order to expose them to as many people as possible. Herrnson et al. (2007) demonstrated that candidates from districts with more Internet users are likely to use web technology as their campaign tools. Thus, constituency characteristics related to the digital divide would influence the degree to which politicians incorporate the Internet into their campaign (Herrnson et al., 2007).

In particular, in case of the lately emerged media such as micro-blog, since the diffusion of the newest media is still in progress differently depending on voter's socio-economic status, strategic consideration about whether the most up-to-date media is appropriate to the electoral districts or not is much more affected by characteristics of constituency than other media such as television and radio which are almost fully distributed to the districts.

Typically, most research about the digital divide has mentioned gender, income, education, occupation, and generation as factors for the gap in digital media access. First of all, gender is one of the detrimental elements causing the digital divide. Females are at a disadvantage relative to men when learning about computers (Cooper, 2006), and less intensive Internet user than men (Bimber, 2000). Besides, females tend to use the Internet less frequently than males (Ono & Zavodny, 2003), and to have negative attitude toward new media (Shashaani, 1994). Therefore, the number of male voters in the electoral districts is worth considering when Assembly members embrace newly emerged

media for communication. Thus, it is reasonable to expect that the districts of Assembly members using twitter has more male voters than the districts of those not using twitter.

Household income predicts Internet access more strongly in the United States than any other factors (NTIA, 1999). Economic status has an effect on the ability to afford to personal computer, software, and monthly Internet connection charges (Norris, 2001). Accordingly, income level of the districts is one of the important factors influencing decision to embrace the latest technology for political communication. The higher income level of a district is the higher degree to which candidates from the districts utilize web technologies is (Bimber & Davis, 2003).

Education level is also a detrimental factor affecting the degree to which people access to the Internet. In order to make full use of the newest media, citizens should be familiar with the new type of function media provide by acquiring necessary knowledge. In most countries, schools and colleges are primary venues providing an environment enabling people to enjoy information technologies, and are also the first places where people can be wired to the Internet (Norris, 2001). Thus, the well-educated tend to access to the Internet more frequently and efficiently than people who have not been educated well. Druckman and his colleagues (2007) demonstrate that candidates from the districts with more sophisticated electorate hired the higher level of web technologies (e.g., multimedia functions). Herrnson et al. (2007) also shows that candidates from the districts with more college-educated people are more likely to use web technologies (e.g., email) than those with fewer college-educated voters in their districts.

Occupation has been mentioned as one of the elements related to the digital divide by many researchers. In general, office workers engaged in professional and managerial jobs have more Internet connectivity than manual workers. As of today, most companies are doing their businesses through online channels by employing digital devices such as personal computers, laptops, tablet PCs, or mobile phones. They should provide their employees with digital devices and educate them how to use them proficiently to increase productivity and efficiency of work. On top of that, overall, the white-collar people are paid more than the blue-collar workers. Therefore, office workers are living in better environments for accessing to the Internet than manual workers. In fifteen European countries, managers and professionals are almost twice as likely to be online as those in other white-collar jobs including clerical assistants and service sectors employees, and managers are almost three times as likely to use the Internet as manual workers (Norris, 2001).

The difference in access to the Internet between generations is also one of the causes producing the digital divide. All people have an ability to adapt themselves to the changing environment. However, older people have more difficulty in acquiring computer skills than younger people (Czaja, 1996), and thus, the period of time for the elders to acclimate themselves to digital communication, on the average, is longer than the case of the younger. As a result, early adopters of digital devices are concentrated among the youngest groups, not among senior citizens (Keum & Cho, 2010; Kim & Jeong, 2010).

The researcher examines the effects of constituency variables related to the digital divide on Assembly members' twitter activities. As mentioned in the previous section, the implications of twitter activities are that how actively and effectively Assembly members are utilizing twitter as a communication channel and how much communicational power their twitter accounts have. Consequently, the research question is presented as follows.

RQ 2: What effects constituency characteristics related to the digital divide have on the activeness, leverage and efficiency of political communication on twitter?

In addition, as stated so far, most research about the digital divide have presented that high-income, well educated, white-collar, and younger people have more probability of being online than the opposite group of people. Based on the previous discussion, this study presents six hypotheses regarding constituency characteristics related to the digital divide.

H₇: The districts from where Assembly members using twitter elected have more male voters than the districts of those not using twitter.

H₈: The districts from where Assembly members using twitter elected have higher income than the districts of those not using twitter.

H₉: The districts from where Assembly members using twitter elected have higher internet penetration than the districts of those not using twitter.

H₁₀: The districts from where Assembly members using twitter have more well-educated electorates than the districts of those not using twitter.

H₁₁: The districts from where Assembly members using twitter have more white-collar workers than the districts of those not using twitter.

H₁₂: The districts from where Assembly members using twitter have more younger voters than the districts of those not using twitter.

CHAPTER THREE: METHODOLOGY

Data

The population of this study is the 18th National Assembly members of the Republic of Korea. As of June, 2011, the total number of them is 297. The capacity of the 18th Assembly members is 299. Two members, however, were deprived of their positions due to corruption and illegal campaign. The parliament of the Republic of Korea is composed of Assembly members elected from the local districts and another group of members elected by the percentage of vote for a political party. The number of members elected from the electoral districts is 243 (81.8%), and that of members elected by proportional representation is 54 (18.2%).

The researcher gathered data from various sources such as the official website for National Assembly of the Republic of Korea (www.assembly.go.kr), the National Election Committee (www.nec.go.kr), Korean Statistical Information Service (www.kosis.kr), Korea Communication Committee (www.kcc.go.kr), and Assembly member's individual website and twitter account. In case of data not available from online database, the researcher visited each public institution and acquired relevant data in person. All information, except data about twitter accounts, analyzed in this study is secondary data prepared by Korean government. For twitter information, the researcher identified every Assembly member's twitter account on June 20th, 2011, right before the full analysis, in order to get most updated data because the records for tweets, followings, followers, and listed are very frequently updated.

Variables

In the present study, there are three groups of variables, personal variables related to Assembly members, constituency variables related to the digital divide, and variables related to twitter activities of Assembly members.

<Table 1> Variables and Operational Definitions

Category	Variables	Operational Definition
Personal Variables related to Assembly member	Age	Individual Assembly member's biological age
	Competitiveness	Voter margin in the electoral district
	Political Experience	Number of elected
	Party Type	Major/Minor
	Party Status	Ruling/Opposite
	Appearance in TV	Number of Assembly member's appearances in three nation-wide television networks in recent five years
Constituency Variables related to the digital divide	Age	The percentage of voters older than fifty
	Gender	The percentage of male voters
	Office	The percentage of office workers
	Income	Relative income of an administrative district
	Internet penetration	The percentage of people using Internet
	Education	The percentage of electorates with higher than college degree
Twitter Variables related to communication activity	Activeness	Number of Tweets
		Number of Followings
	Leverage	Number of Followers
		Number of Listed
Efficiency	Number of Followers per Tweet	

For the first group of variables, six variables are prepared. They are 'age,' 'competitiveness,' 'experience in politics,' 'party type,' 'party status,' and 'appearance in television news.' In specific, for the variable of 'competitiveness,' the voter margin between an Assembly member and a candidate in second in the electoral district in 2008 national election for the National Assembly was used. In order to measure 'experience in

politics,’ the research put the number of elected of each Assembly member into the database. ‘Party type’ means a major or minor party. In South Korea, the National Assembly Act defines a party with more than 20 members as a negotiation group. Accordingly, a party registered as a negotiation group was coded as a major party. And ‘party status’ indicates the ruling or the opposite party. Lastly, to measure ‘appearance in television news,’ the researcher counts the number of Assembly member’s appearances in television news broadcasted by three nation-wide television networks (KBS, MBC, and SBS) in recent five years (from June 19th, 2006 to June 19th, 2011).

For the second group of variables, the researcher utilized relevant statistics regarding constituency officially produced by Korean government. They are ‘age,’ ‘gender,’ ‘job,’ ‘income,’ ‘Internet penetration,’ and ‘education’ of constituency. Specifically speaking, the researcher operationalized ‘age’ as the percentage of voters older than fifty, ‘gender’ as the percentage of male voters, ‘job’ as the percentage of office workers and ‘education’ as the percentage of electorates with higher than college degree. And lastly, ‘income’ refers to a relative income of administrative district to average national income, which was set as 100 in 2008.

Finally, for the third group of variables, ‘the number of tweets,’ ‘the number of followings,’ ‘the number of followers,’ and ‘the number of listed’ were recorded. Technically speaking, ‘the number of tweets’ refers to how many messages an Assembly member has posted, ‘the number of followings’ to how many users an Assembly member are following, ‘the number of followers’ to how many users are following an Assembly member, and ‘the number of listed’ to how many users list an Assembly member’s twitter

account as a regular information source. Among them, the first two variables indicate how actively an Assembly member uses twitter, and the last two imply the influential power of twitter account. However, the number of listed are more influential index than the number of followings because user's action of listing an account reflects stronger intention to read the listed page on a regular basis than action of following. On top of that, in order to measure the efficiency of communication on twitter, the researcher created an additional variable by dividing the number of followers by the number of tweets.

Analysis

Independent samples t-test and cross-tabulation were used to examine the differences in mean value and frequency between Assembly members using twitter and those not using twitter. In addition, regression analysis was conducted to explore the effects of personal variables related to Assembly member and constituency variables related to the digital divide on Assembly member's communication activities on twitter. In doing analyses, the researcher did not employ constituency variables for Assembly members elected by proportional representation because they have no electoral districts.

CHAPTER FOUR: RESULTS

Description of data

Among total 297 Assembly members, 170 (57.2%) members are affiliated with the ruling party and 127 (42.8%) Congresspeople are members of the opposite parties. And 256 (86.2%) people are members of the major parties, 41 (13.8%) members are affiliated with the minor parties or independents. The percentage of Assembly members using twitter is 40.1% (119) and those not using twitter are 59.9% (178). Among members elected from the districts, 41.6% (101) of members adopt twitter as a communication tool and 58.4% (142) of them do not use twitter. On the other hand, 33.3% (18) of proportional representatives use twitter and 66.7% (35) of them do not. The mean values of age, the number of elected, voter margin, the number of appearances in television news are 56.79 years old, 1.92 times, 20.13%, 237.70 times respectively.

<Table 2> Descriptive data on the 18th Assembly members and Adoption of Twitter

		Member Type		Party Status		Party Type		Total (%)
		RD ^a	PR ^b	Ruling	Opposite	Major	Minor	
Use of Twitter	Use (%)	101 (58.4)	18 (33.3)	72 (42.4)	47 (37)	105 (41)	14 (34.1)	119 (40.1)
	Non-Use (%)	142 (41.6)	36 (66.7)	98 (57.6)	80 (63)	151 (59)	27 (65.9)	178 (59.9)
Total (%)		243 (81.8)	54 (18.2)	170 (57.2)	127 (42.8)	256 (86.2)	41 (13.8)	297 (100)
		Age		No. of Elected		Voter Margin ^c		No. TV news
Mean (Std.)		56.97 (7.786)		1.92 (1.173)		20.13 % (18.8)		237.70 (252.87)

- a. Representative for District
- b. Proportional Representative
- c. Statistics only for Representatives for the Districts

In terms of constituency variables related to the digital divide, the mean values of the percentage of voters more than fifty, the percentage of male voters, the percentage of office workers, the percentage of voters with higher than college degree, relative income, and Internet penetration are 34.46%, 49.22%, 23.02%, 39.36%, 99.37, and 77.27% respectively.

<Table 3> Descriptive data on Constituencies

	Age 50	Male	Office	College	Income	Internet
Mean	34.46 %	49.22 %	23.02 %	39.36 %	99.39	77.27 %
(Std.)	(5.45)	(1.22)	(5.45)	(11.46)	(11.7)	(5.42)

The last group of variables is concerning the degree to which Assembly members utilize twitter as a communication channel. The mean values of two variables indicating member's activeness of twitter communication, the number of tweets and the number of followings, are 838.24 and 5043.92, respectively. And the means of another two variables telling the leverage of twitter communication, the number of followers and the number of listed, are 7676.64 and 540.90, respectively. The mean of the last variable related to efficiency of political communication on twitter, the number of followers per tweet, is 27.32

<Table 4> Degree of Assembly member's communicational activities on Twitter

	Tweets	Followings	Followers	Listed	F/T
Mean	838.24	5043.92	7676.64	540.90	27.32

Differences in Personal Characteristics

To test research hypotheses from 1 to 6, which are related to Korean Assembly members' personal characteristics, this study conducted independent samples t-test and cross-tabulation.

<Table 5> Differences in Personal Characteristics

	User	Non-User	Statistics
Age	Mean 55.23	Mean 57.84	$t = 2.872, p < .01$
Party Status	Ruling 42.4 %	Opposite 63.0 %	$\chi^2 = .865, p = .402$
Party Type	Major 41 %	Minor 65.9 %	$\chi^2 = .694, p = .493$
Voter Margin ^a	Mean 20.08	Mean 20.17	$t = .038, p = .970$
No. of Elected	Mean 2.01	Mean 1.87	$t = -1.031, p = .303$
No. TV news	Mean 323.85	Mean 180.11	$t = -4.342, p < .001$

a. Only for Representatives for the Districts

As expected, there is no statistical difference in party type, which implies major/minor party, between Assembly members using twitter and those not using twitter. Assembly members who are affiliated with major parties adopt twitter as a communication channel slightly more than those affiliated with minor parties but it is not statistically significant ($\chi^2 = .694, p = .493$). This supports H₁. This result is different from those of previous studies about Congresspeople's adoption of web technologies. They have suggested that politicians affiliated with a major party are more likely to adopt up-to-date web technologies because employing new technologies needs money and a major party has more financial resources in support of its members than a minor party. But, opening a twitter account does not incur any expenses. Therefore, an individual

politician need not depend on assistance from the party any more. In addition to type of political party, party status was examined. Assembly members affiliated with the ruling party are utilizing twitter for political communication more than the opposition, but it is not statistically significant ($\chi^2 = .865, p = .402$).

The third hypothesis is concerning the competitiveness of election in the district. The produced result tells that there is no statistical difference in the competitiveness of 2008 election between the use and the non-use ($t(241) = .038, p = .970$). This result does not support H₃. This result is not consistent with previous research showing that candidates in competitive elections would be less likely to adopt web technologies providing high level of interactivity (Druckman et al., 2007). Therefore, it can be said that incumbent Korean National Assembly members' use of twitter is not associated with the competitiveness of election they went through.

Politicians who adopt twitter have more experience in politics than those who do not use twitter, but it is not statistically significant ($t(295) = -1.031, p = .303$). Although it is not significant, it is against this study's expectation and results of previous research. Other researchers have shown that candidates with less experience in politics are more likely to adopt newly emerged technologies such as the Internet (D'Allesio, 2000; Herrnson et al., 2007) because they are not familiar with average citizens and thus, need to adopt new media more actively to spread information relevant to themselves than experienced politicians. Along with the test for experience in politics, the researcher also tested the difference in age between members using twitter and those not using twitter. Unlike the test for H₄, this produced the result consistent with the expectation. Assembly

members using twitter are younger than those not using twitter ($t(295) = 2.872, p < .01$). In order to examine this inconsistency in detail, the researcher conducted correlation analysis between age and the number of elected but the result showed that age is positively associated with the number of elected ($r = .396, p < .001$).

To supplement such inconsistency of results, the researcher devised an additional variable, the number of Assembly member's appearances in television news in recent five years. This variable indicates popularity of Assembly members among nation or their familiarity with people. As stated in the literature review section, the researcher expected that politicians appearing more frequently in television news would be able to draw more attention from people, and in turn, they would make greater efforts in conversing with voters through twitter. The result shows that Assembly members using twitter have appeared in television news more frequently than members not using twitter ($t(295) = -4.342, p < .001$), which is in support of H_6 .

Differences in Constituency Characteristics

Due to the parliament system of the Republic of Korea, data concerning constituency characteristics related to the digital divide goes only for 243 representatives for the districts.

<Table 6> Differences in Constituency Characteristics related to the Digital Divide

	User	Non-User	Statistics
Men (%)	Mean 49.21	Mean 49.23	$t = .129, p = .897$
Age50 (%)	Mean 33.93	Mean 34.84	$t = 1.324, p = .187$
College (%)	Mean 41.78	Mean 37.64	$t = -2.820, p < .01$
Office (%)	Mean 23.98	Mean 22.33	$t = -2.345, p < .05$
Internet Penetration (%)	Mean 77.98	Mean 76.76	$t = -1.785, p < .10$
Income	Mean 100.86	Mean 98.30	$t = -1.654, p = .100$

To test the hypotheses from 7 to 12, independent samples t-test was conducted.

Firstly, there is no difference in the percentage of male voters in the local districts between Assembly members using twitter and those not using twitter ($t(241) = .129, p = .897$). And the percentage of voters more than fifty years old in the districts of Congresspeople using twitter is lower than that of members not using twitter, but it is not statistically significant ($t(241) = 1.324, p = .187$).

There is statistically significant difference in the percentage of voters with higher than college degree. The result shows that the proportion of electorates with higher than college degree in the districts from where Assembly members using twitter came is higher than that of those not using twitter ($t(241) = -2.820, p < .01$). The percentage of office workers in the electoral districts of the user group is also higher than that of the non-user group ($t(241) = -2.345, p < .05$). And Internet penetration in the region of the user group is slightly higher than that of the non-user group, but the difference is not statistically significant at the significance level of .05 ($t(241) = -1.785, p < .10$). Lastly, income in the region of Assembly members using twitter is slightly higher than that of members not using twitter, the relative regional income, however is not significantly different ($t(241) = -1.654, p = .100$).

Personal Characteristics and Twitter Activity

Table 7 shows the effects of personal characteristics related to Assembly members on their communication activities on twitter. To test the effects, the present research used dummy variables for party status (the ruling = 0 / the opposite = 1) and party type (major = 0 / minor = 1).

<Table 7> Effects of Personal Characteristics on Twitter Activities

	Activeness		Leverage		Efficiency
	Tweets	Followings	Followers	Listed	
Age	-.152	-.063	-.087	-.044	.067
Ruling/Opposite	.327**	.156	.183*	.222**	-.194#
Major/Minor	.056	.006	.001	-.053	-.072
No. of Elected	.029	.084	.031	-.046	.002
No. of TV news	.227*	.312**	.500***	.666***	.317**
N	119	119	119	119	119
R ²	.211***	.173**	.333***	.499***	.156**

Note: Estimates are standardized regression coefficients. The variable, 'Voter Margin,' was excluded in the regression analysis because it could not be applied to proportional representatives using Twitter. For the statistics only for Assembly members from districts, refer to Appendix A. # $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

In terms of the number of tweets Assembly members have posted, while age, party type, and experience in politics are not significantly associated with the number of tweets at the significance level of .05, party status and the number of appearances in television news are positively associated with tweet number. Assembly members affiliated with the opposite parties are utilizing more actively than those of the ruling party ($\beta = .327$, $p < .01$), and the number of appearances in television news also affects positively the tweet number Congresspeople have made ($\beta = .227$, $p < .05$). Another variable denoting the activeness of twitter communication, the number of followings, has a significantly

positive relationship only with the number of appearances in television news. The more Assembly members appear in television news, the more actively they follow other colleagues on twitter ($\beta = .312, p < .01$). The regression model explains 21.1% of the variance in the number of tweets ($p < .001$) and 17.3% of the variance in the number of followings ($p < .01$).

In order to explore the effects of personal characteristics related to Korean Assembly members on the leverage of political communication on twitter, the researcher set two variables, the number of followers and listed. Similar to the results of the test for activeness, the predictor, the number of appearances in television news, are significantly associated with the number of followers and listed. The more Assembly members appear in television news, the more followers ($\beta = .500, p < .001$) and listed ($\beta = .666, p < .001$) they have. In addition, party status also has a significant impact on the number of followers and listed. Assembly members who are affiliated with the opposite party have more followers ($\beta = .183, p < .05$) and listed ($\beta = .222, p < .01$). Compared to other statistics for age, party status, party type, and experience in politics, the effect of the number of appearances in television news on the leverage is stronger. And these regression models explain more variance in follower and listed than in other three dependent variables, tweets, followings, and efficiency. 33.3 % of variance in the number of followers ($p < .001$) and 49.9 % of variance in the number of listed ($p < .001$) are accounted for by the regression models.

Lastly, the researcher created an additional variable by dividing the number of followers by the number of tweets to investigate the effects of personal characteristics on

the efficiency of political communication on twitter. As shown in Table 7, the number of appearances in television news has a statistically significant effect on the efficiency ($\beta = .317, p < .01$). Like the previous research results, Assembly members who appear in television news more frequently are using twitter as a political communication tool more efficiently. This regression model for efficiency accounts for 15.6 % of the variance in the dependent variable (followers/tweets).

Constituency Characteristics and Twitter Activity

Among four predictors, the percentage of male voters, the percentage of voters older than fifty, the percentage of voters with higher than college degree, and relative income, there is no statistically significant predictor associated with the number of tweets and the number of followings, which indicates the activeness of political communication on twitter. And in general, the strength of relationship between predictors and dependent variables is also weaker than between personal characteristics and the same dependent variables. These factors explain only 2.2 % of the variance in the number of tweets and 1.1 % of the variance in the number of followings, respectively.

<Table 8> Effects of Constituency Characteristics on Twitter Activities

	Activeness		Leverage		Efficiency
	Tweets	Followings	Followers	Listed	
Men	.082	-.004	-.156	-.164	-.296**
Age50	.067	-.049	-.034	-.038	-.124
College	-.013	.021	-.103	-.095	-.139
Income	.135	.062	.263*	.236*	.217#
N	101	101	101	101	101
R ²	.022	.011	.074	.067	.120*

Note: Estimates are standardized regression coefficients. The variables, 'Office,' and 'Internet Penetration,' were excluded in the regression analysis because these had high level of multicollinearity with Income. # $p < .10$, * $p < .05$, ** $p < .01$

Table 8 shows that although it is not statistically significant, as districts have more male voters and more elderly voters, the leverage of twitter communication of Assembly members elected from the districts decreases. As for Education, although it is not also statistically significant, the more well-educated voters in the district, the less leverage twitter communication has. Income is the only factor predicting the leverage of twitter communication significantly. The regression coefficient of income for the number of followers is .263 and for the number of listed is .236. These four variables accounts for 7.4 % of the variance in the number of followers and 6.7 % of that in the number of listed, but those are not statistically significant at the significant level of .05.

Lastly, this research explored the effect of constituency variables on the efficiency of twitter communication. The proportion of male voters in the district is negatively associated with the efficiency. As the district has more male voters, the efficiency of communication through twitter decreases ($\beta = -.296, p < .01$). On the contrary to this, as income of the district increases, the efficiency also increases ($\beta = .217, p < .10$). Other

two variables, the proportion of voters older than fifty and the percentage of voter with more than college degree, have negative relationship with the efficiency but they are not statistically significant. The result also tells that 12 % of the variance in the efficiency is accounted for by the regression model ($p < .05$).

CHAPTER FIVE: DISCUSSION

The present study explores the differences in personal characteristics related to Korean Assembly members and constituency characteristics related to the digital divide between Congresspeople using twitter and those not using twitter, and the effects of those characteristics on political communication activity on twitter. The results of the study are somewhat inconsistent with those of the previous research concerning political adoption of web technologies. Among five variables (age, party status, party type, race competitiveness, and experience in politics), only the mean value for age is significantly different between groups. On top of that, the mean value of new variable added in this research, the number of appearances in television news implying the popularity or familiarity of Assembly members, is also significantly different.

Among the constituency variables related to the digital divide (the proportion of male voters, the proportion of voters older than fifty, the proportion of voters with higher than college degree, the proportion of office workers, Internet penetration, and Income), the proportion of voters with higher than college degree and the proportion of office workers are significantly different between Assembly members using twitter and those not using twitter at the significance level of .05. Considering the proportion of voters with higher than college degree and the proportion of office workers are highly correlated with each other ($r = .621, p < .01$), these two results may well be regarded as the same. These results are also somewhat different than those of the previous research regarding political adoption of web technologies. And there is also a statistically significant difference in Internet penetration between groups. Although there is a statistically significant

difference in Internet penetration, however, since there is such a small difference in terms of actual penetration (Twitter users' districts = 77.98 and non-users' = 76.76), this result does not tell us much. Thus, since South Korea's Internet penetration levels are high and fairly equal across the districts, it is unlikely that access to the Internet is keeping folks from following politicians on twitter, or for it to be a reason why politicians in the lower penetration districts do not use it. In the U.S, however, where penetration rates are more uneven, perhaps this variable would be likely more robust, as previous research has suggested so far.

In terms of the effects of two groups of variables on Korean Assembly members' communication activities on twitter, the linear regression model including personal variables related to Assembly members accounts for more variances in twitter activities than the model consisted of constituency variables regarding the digital divide. In specific, among personal variables, generally, the number of appearances in television news has a higher impact on twitter communication activities than any other variables.

From these produced results, we can tell that political adoption of twitter in South Korea as a communication tool is taking a different aspect than that of web technologies. While personal characteristics of Assembly members explain political adoption and use of twitter moderately, constituency variables related to the digital divide barely account for Assembly members' political use of twitter. Especially, we need to focus on the role of Assembly members' popularity or familiarity among people in adopting twitter. According to the results, the more Assembly members appear in television news, the more likely they utilize twitter as a political communication tool.

Such results inconsistent with the previous research can be explained by the advent of new Internet paradigm, Web 2.0, and unique characteristics in Korean politics and media coverage of it. First of all, from the perspective of the change in Internet paradigm, we can account for the results. Unlike the diffusion of the Internet in the early 2000s, political adoption of twitter has become easier because it costs less resource such as time and money to initiate communication via twitter. As known, today, most Internet services run their businesses by providing users with various web platforms and thus Internet users are able to create their own spaces easier than yesterday. Under such environmental change in Internet communication, politicians seem to follow general trend in Internet use by participating in online communication as only a member given equal right to speak in that Internet community. Therefore, it can be understood that organizational supports for online communication from a political party do not affect political adoption of twitter any more. Likewise, but with caution, no significant effect of race competitiveness on political communication activities on twitter can be attributed to the change in political communication paradigm. Under the communication environment in Web 2.0 paradigm which can be characterized by equal right to speak, any political attempts to hide or control critical information would be able to deal politicians a fatal blow because those kinds of trials can convey undesirable political image to voters.

Secondly, the uniqueness of Korean politics and media coverage on political issues can account for why constituency variables barely affect the use of twitter and why the number of Assembly member's appearances in television news covering whole nation, South Korea, is a detrimental factor on the political use of twitter. The centralization of

politics is one of the marked characteristics in Korean politics. Political power has centralized for a while and thus local politics in South Korea has been dominated by the central government or has formed the patron-client relationship with the central government (Kim, 1998). On top of that, media coverage on politics in South Korea also has mainly focused on national politics and nation-widely famous politicians. And also, the three network stations, KBS (Korea Broadcasting System), MBC (Munhwa Broadcasting Corporation), and SBS (Seoul Broadcasting System), play a pivotal role in forming public opinion and thus Korean voters tend to pay more attention to a few politicians who have nationwide popularity than local politicians. This is a case of an old media continuing to have an impact on political adoption of new media. In other words, we can say that while a lot of the excitement around twitter and other digital communication technologies assumes that it will change everything, the present result that TV appearances matter a lot suggests that twitter do not level the playing field between already-known politicians or politicians in government power and those who are not as well known or in the minority. Therefore, this study goes against the grain of those who predict that Twitter or other new technologies will revolutionize or democratize political communication.

On top of that, as previously mentioned, many researchers attributed Barack Obama's historical victory in 2008 to his strategic use of social media like twitter and facebook, but it is not the same case in South Korea. Due to the lack of relevant research regarding the relationship between the traditional media and Obama's political adoption of social media in 2008, it is not sure to say that he was able to draw more people on his social

media accounts because he was more popular than his counterpart. Besides, we cannot tell how big role social media played in presidential campaign and in turn, candidates' social media pages were successful in drawing attention from the traditional forms of media or otherwise. Unlike in the U.S, however, it can be interpreted that traditional media highly affects the political use of social media in South Korea. In other words, media coverage on a specific Assembly member successfully leads average people's attention to him/her and it also leads to increase in the number of followers. To illustrate, in case of the Assembly member, Geun-Hye Park, who was the ex-president of the current ruling party and is one of the strong candidates for the 2012 presidential election, even though most of the mean values of constituency variables (male = 40%, office worker = 21%, college = 36.1%, and income = 94) in her district are below the overall averages, and she has posted only 99 messages and is following just 3,112 twitter users, the number of people who are following her and registering her account as a regular information source is 104,570 and 6,246 respectively, which are maximum in the data set. She does not write a lot of tweets. She does not seem to be using the medium to reach out very often. The results suggest that the influence of politicians' popularity via old media, such as TV, help drive people to follow them on Twitter. That is, political success in twitter communication highly depends on Assembly members' popularity among nation rather than on Assembly members' active use of twitter. Accordingly, we can say that twitter is being used as a communication tool to meet other political purposes in South Korea rather than to get local public opinion from electoral districts where Assembly members were elected.

The present study shows that political use of twitter is taking a different aspect from the Internet in the early 2000s. While most previous research has proved the effect of the perceived relative advantages and the digital divide on the political adoption of web technologies which were on the early stage of diffusion, this research tries to explain the discrepancy between twitter adoption and the Internet in political area in terms of the environmental change in online communication due to the change of Internet paradigm and the uniqueness of Korean politics and media coverage on it. However, this study has limitations in that other variables that can explain political use of twitter might not be included. As discussed, we identified that, except popularity variable, personal characteristics related to politician and constituency characteristics related to the digital divide do not significantly account for political use of twitter in the present study. This means that academic approach to political use of twitter frequently employed in previous research about adoption of new media may not be valid anymore and thus, the future research may approach the topic from a new viewpoint. At this point, the researcher suggests that new media research theoretically based on the uses and gratifications need to be conducted in the future. Since the function of a medium derived from its own unique characteristics yields different effects on users (Horton & Wohl, 1956) and helps them shape motives for embracing it corresponding to their expectation of gratifications, the uses and gratifications study via survey on Assembly members will be very useful to discover other factors significantly explaining political use of twitter.

In addition, to investigate whether variables tested in this study still stand in political use of twitter or not, political and media culture should be considered in the future by

conducting similar research in other cultural areas and comparing the result with this research. In terms of land size, South Korea is such a small country. For example, the land area of South Korea is half of that of the state of Minnesota. Accordingly, it may be no wonder that personal characteristics related to Assembly members account for more variance in political use of twitter than constituency variables related to the digital divide in South Korea. Thus, we are not able to say that the digital divide does not influence political use of twitter anymore before testing same variables in other areas, in specific, the United States, which is one of the hugest countries in the world. Through such research, we will be able to identify whether the uniqueness of political and media culture in South Korea causes the present results inconsistent with the previous research or not, and whether the characteristics of twitter itself are related with the result of this study or not.

Lastly, as the present result says, political use of twitter is highly affected by television, an old media. Therefore, it is in need of investigating how Korean Assembly members who are using twitter actively are reported in television news in depth. Besides, almost all media have been successfully converged into digital forms and thus, there is also a probability that people regard twitter as not brand-new media but one of the media that has only a few of additional functions. It may not be that the diffusion of new communication channel is not accomplished independently anymore which cannot be explained by only socioeconomic status of people in highly developed digital countries. Therefore, the diffusion of innovation or the digital divide research is not likely as useful theoretically in a country like South Korea or at a time when getting access is not as

expensive. The researcher thinks that other theories such as two-step flow might be better suited to explaining how and why twitter might better and thus, future research should explore this idea.

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APPENDICES

Appendix A

<Table 9> Effects of Personal Characteristics on Twitter Activities
(Only for Representatives for Districts, N = 101)

	Activeness		Leverage		Efficiency
	Tweets	Followings	Followers	Listed	
Age	-.058	-.002	.001	.057	.051
Ruling/Opposite	.251*	.100	.127	.168*	-.145
Major/Minor	.075	-.068	-.124	-.129	-.242*
No. of Elected	.088	.108	.052	-.014	-.039
No. of TV news	.221#	.325**	.553***	.704***	.407**
Voter Margin	-.121	-.052	-.128	-.129#	-.021
N	101	101	101	101	101
R ²	.180**	.172**	.361***	.522***	.229***

Note: Estimates are standardized regression coefficients. The variable, 'Voter Margin' is included in the model. # $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Appendix B

<Table 10> Effects of Personal Characteristics on Twitter Activities
(Only for Proportional Representatives, N = 17)

	Activeness		Leverage		Efficiency
	Tweets	Followings	Followers	Listed	
Age	-.316	-.216	-.414	-.339	.014
Ruling/Opposite	.757*	.684#	.658#	.510#	-.430
Major/Minor	.423	-.283	-.034	-.177	-.631
No. of Elected	-.036	.134	-.026	-.067	.027
No. of TV news	.031	-.135	.045	.420#	.004
N	17	17	17	17	17
R ²	.435	.282	.442	.582#	.257

Note: Estimates are standardized regression coefficients. # $p < .10$, * $p < .05$