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【연구논문】

Presidential Candidates' Twitter Use and the Linkage Pattern of Twitter users in the 2012 Presidential Election

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ABSTRACT

The study aimed to examine how the five presidential candidates - Barack Obama, Mitt Romney, Rick Santorum, Newt Gingrich, and Ron Paul - used Twitter in their 2012 presidential election campaigns and how Twitter users received information from the candidates and shared information with other Twitter users. Among 30 million Twitter users who followed these five candidates, most individuals followed either Obama or one or multiple Republican candidates, but rarely followed across the party line. To find which model explains Twitter users' following patterns better, the author examined the two-step flow model and the network model.

Based on analysis of randomly selected 180 Twitter users who followed any of the five candidates, this study found that their Twitter activities fitted the network model, in which users shared information with each other beyond directly getting tweets from their favored candidate. In this network model, some of the users seemed to emerge as opinion leaders by issuing plenty of tweets and having more followers than those they follow, also known as one-way friends.

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The author also downloaded the Twitter profile pages of the five candidates and all their tweets from when they set up their Twitter account through March 2012. To content analyze the tweets of the candidates, the author randomly selected 500 tweets from the five candidates, 100 from each candidate, and analyzed them to find emerging 11 categories, which covered mentioning of their performance and ideas, criticism of their opponents, solicitation, thanks to voters, personal-side stories, and event reminders. The five candidates heavily used Twitter as a hook to hashtags and http links that would provide more detailed information for followers. They still used Twitter mostly as a textual communication tool, but they slowly made a move to visuals. In terms of message content, Republican candidates heavily cited others, for example, the mass media, to describe their ideas and performance and to criticize their opponents. But Obama didn't seem to rely on external sources for the same purposes. This study used all 30 million Twitter users to find which candidate they followed. But it used a small size of Twitter users and tweets for other analyses. Future studies are suggested to analyze larger samples for more accurate results.

Key Words: Twitter use, linkage pattern, 2012 U.S. presidential election, five candidates, the network model

I. Introduction

The use of Twitter has brought new kinds of democracy around the world. We witnessed the "Arab Spring" in the Middle East and Northern Africa. In the U.S., people ages 12 to 34 are spending less time in front of TV sets than computers, according to research by Nielsen, a company that tracks media use (Stelter, 2012). This young generation has increasingly relied on Twitter to gather information and express itself. Twitter becomes more powerful as more people join the social media platform. In the 2012 election year, there was a voting

age population of 221,925,820, among whom, only 130,306,739 voted, a 58.7% voting rate. On the other hand, there were 30,525,150 people who followed the Twitter accounts of five presidential candidates¹⁾ in 2012. That number accounted for 13.8% of the voting age population, or 23.4% of real voters (McDonald, 2013).

In response to this new trend, politicians in the U.S. adopted Twitter to reach millions of Twitter users, 10 times as many as in the 2008 campaign. This hefty increase was due to different reasons: Politicians want to respond to or interact with Twitter users and monitor interactions of followers, especially reporters. The 2008 presidential election experienced a 24/7 news cycle, while the 2012 election witnessed a 24-second news cycle (Parker, 2012).

When there was neither the Internet nor social network systems, such as Twitter or Facebook, politicians used the traditional mass media. According to the two-step flow theory of communication model, information first flows from the mass media to opinion leaders, who then passes it on to the wider general public. This paper examined whether this two-step flow is working in cyberspace politics, especially on Twitter, which has been used to mobilize young people for democracy in the United States.

This paper examined how five politicians in the 2012 presidential election – Barack Obama, Mitt Romney, Rick Santorum, Newt Gingrich, and Ron Paul – communicated in a new media environment, especially using Twitter. It analyzed what types of Twitter features the politicians used to get out their messages in a 24-second news cycle and what kind of Twitter messages they posted.

1) Five accounts are @RickSantorum, @newtingrich, @RonPaul, @BarackObama, and @MittRomney.

This study also examined the following questions: How did citizens receive information in the Twitter network? Did other Twitter users intervene between a presidential candidate's Twitter message and the audience's reaction to that message? Did they subscribe to one politician, multiple politicians from the same party, or even politicians across the party line?

II. Literature Review

One concern about Twitter is whether it acts as the echo chamber, in which people hear the same sound repeatedly. If Twitter cannot offer a channel through which people access ideas and information from multiple sources, it may hamper democracy rather than help it.

The following literature review focused on two communication models - the two-step flow model and the network model. During the decades between the two world wars, scholars believed the mass media had a strong influence on the public. This hypodermic needle model was dominant until Lazarsfeld and others suggested the two-step flow theory (Severin & Tankard, 2001; Baran & Davis, 2012).

According to the two-step flow theory, mass media messages go to the public through opinion leaders. Lazarsfeld, et al. tried to verify the hypodermic model of powerful media effects in their 1940 study of presidential election. Contrary to their expectations, they found that radio and print mass media had relatively minor effect on people's voting in the U.S. presidential election than personal contacts (Lazarsfeld & Menzel, 1963; Lazarsfeld, Berelson, & Gaudet, 1968). The power of interpersonal communication was later found also in

non-political areas, such as marketing, fashion, movie viewing, and other areas (Katz & Lazarsfeld, 2006; Lazarsfeld & Menzel, 1963; Merton, 1968).

The power of interpersonal communication reappeared in different shades. Gladwell (2002) found that ideas, products, messages, and behaviors "spread just like viruses do" (p. 7) if they are sticky enough to attract opinion leaders, what the Gladwell called Connectors (sociable person), Mavens (messenger), or Salespeople (persuader).

One year later, Berry (2003) explained the importance of the role of the person-to-person channel of word of mouth with influentials at the center of the channel. The influentials gather information from multiple sources, communicate with ordinary people using multiple channels, and spread information among them. As the Internet disintegrated the mass market, the influentials, who are active socially and politically, would influence others more than ever through their activities.

When ordinary people need more sophisticated knowledge, such as medical, financing, other consulting type of information, they try to go beyond their network of families and friends to other influentials with expertise (p. 6). Berry estimated that influentials make up about 10 percent of the U.S. adult population (p. 1).

However, the two-step flow hypothesis was soon criticized by many subsequent studies. For example, Westley (1971) cited several studies that supported that the mass media directly spread major news stories to a far greater extent than intermediary opinion leaders. Trodahl (1960) also argued that the two-step flow hypothesis explains minimum effects of mass media on people's attitudes and behavior, but the mass media are effective in making people becoming aware of major news events. So Trodahl (1960) suggested a one-step flow of communication

directly from the mass media to people in informing them, and a two-step model in swaying their opinions, attitudes, and behavior. Trodahl reasoned that opinion followers would ask opinion leaders for advice to recover from their cognitive imbalance after they are exposed to views from mass media that are inconsistent with their own views. Another study characterized the relationship of opinion followers with opinions leaders as opinion sharing rather than opinion seeking (Trodahl & Dam, 1965), which seems to be more appropriate in the Internet era than ever before because opinion leaders have a capacity to be their own publisher and actively share information with others rather than passively being sought after by others.

With the advent of the Internet, communication environments have changed drastically. New socio-technological conditions, such as "the continued detachment of individuals from the group-based society, and the increased capacity of consumers to choose from a multitude of media channels (many of which enable user-produced content)," require new kind of theory and research (Bennett & Iyengar, 2008). Chaffee and Metzger (2001) rejected "mass society theory and . . . the notion of a passive, atomized audience" (p. 370). They wrote that new media environments, where anybody can serve as a publisher, provide ordinary individuals with opportunities for communication with others, which were only available to elites and gatekeepers in the past.

To accommodate this need, social network analysis can be used as a model. In the network analysis model, actors are viewed as interacting with each other, and resources, either material or nonmaterial, transfer through their ties. This model has been fruitful in analyzing many relational issues in social and behavioral science areas (Wasserman & Katherine, 1994). Most of network analysis was conducted using

survey-type field studies, but experimental and quasi-experimental designs can be used, too (Borgatti, Everett, & Johnson, 2013). The advancement of Internet and social media networks allow researchers to access network model data in real time since computer technology can be used to collect innumerable data about users and computer systems. Studies on social media networks can be done to trace email communication; map message boards and email listserv groups; analyze activities on Twitter, Facebook Flickr, and YouTube; or describe patterns in WWW hyperlinks or Wiki networks (Hansen, Shneiderman, & Smith, 2011).

A few recent studies found that the pattern of Twitter activities seems to fit the two-step communication model over the network model. Kwak, Lee, Park, and Moon (2011) found that Twitter is a news media instead of a social network when they analyzed the entire Twittersphere, which allowed them to access 41.7 million user profiles and 10 million tweets. They found "Twitter shows a lower level of reciprocity; 77.9% of user pairs with any link between them are connected one-way, and only 22.1% have reciprocal relationship between them." These authors conjectured that "for these users Twitter is rather a source of information than a social network site" (p. 593).

Wu, Hofman, Mason, and Watts (2011) found that the top ten most-followed Twitter users are not corporations or media organizations, but mostly celebrities. Even though Twitter eroded traditional media power with its 140-letter platform, they found considerable support for the two-step flow hypothesis on Twitter.

Regarding how to use Twitter effectively, many different theories were suggested. Any one can use social media easily like playing a guitar, but producing impressive tunes that would attract people's

attention would take "finesse, talent, sensitivity and damn hard work" (Amerland, p. 191). Amerland emphasizes "storytelling" beyond just "conversing" as an element to bring a true interactivity with the audience. Powerful stories can be narrated by telling synergetic, entertaining, differentiating, and focused stories (p. 109-118). Additionally, Schaefer (2012) emphasized that powerful Twitter users have to provide meaningful and beneficial content for followers and additional links that will provide further detailed information after the first hook.

For this study, three research questions were raised.

- RQ 1: Did people acquire information about 2012 presidential politics from one candidate or multiple candidates?
- RQ 2: Did the structure of Twitter communication follow the two-step flow model or the network model?
- RQ 3: How did the five presidential candidates effectively use Twitter?

III. Method

To see how the five presidential candidates used Twitter, the author downloaded their Twitter profile pages and all their tweets from when they set up their Twitter account to the day when their tweets were downloaded by the author, sometime between March 11 and March 17, 2012. The profile page shows the tweet count, the number of followers, and the number of following. Their tweets were analyzed to see what Twitter features they used; whether the political candidates

used normal tweets, replies, retweets, or a mix of replies and retweets; or whether a tweet has a photo, video, or other media.

To content analyze the candidates' tweets, the author randomly selected 500 tweets from the five candidates, 100 from each candidate, and analyzed them to find emerging 11 categories. When the content was not clear, linked visuals, such as photos, videos, or media, were analyzed, along with the content referred to by an accompanying http address. Another coder categorized 100 tweets, and the inter-coder reliability was 79%. To refine the category, the two discussed discrepancies in their classifications and came up with more streamlined 11 categories: A) Performance described by self; B) Performance described by others; C) Ideas described by self; D) Ideas described by others; E) Criticism of opponents by self; F) Criticism of opponents by others; G) Solicitation; H) Thanks; I) Personal messages; J) Reminders for constituents; K) Miscellaneous messages.

- Category A and B are about a candidate's performance, activities or events. If a candidate mentions what he has done in tweet messages, it belongs to Category A. If a tweet mentions other media that described the past or future activities of a candidate, this belongs to Category B. For example, "Tune in at 8:00 P.M. tonight for the #CNNDebate (@ CNN Presidential Debate w/ 8 others)" is an example of Category B.
- Category C and D use Twitter to describe a candidate's ideas or invisible quality. If a candidate directly describes himself, it belongs to Category C. On the other hand, if a candidate quotes others to prove a point or stance, this tweet belongs to category D.

- Category E and F are used to attack an opponent. When a candidate directly makes an attack, it belongs to Category E. If a candidate relies on others for any attack, such as newspaper articles, op-ed, TV programs, or other writers, it belongs to Category F.
- Category G is about requesting people to participate beyond just watching TV or reading newspaper articles (the latter are covered by categories B, D, and F). Its examples include any mention of donations, soliciting volunteers, or voting.
- Category H is used to thank people, who have either worked for the candidate or for the country. For example, when a candidate expresses an appreciation of their service to soldiers, this tweet belongs to Category H.
- Category I is used to reveal the candidate's personal side, not related to the political campaign, such as attending sports games or personal meetings.
- Category J is used to remind people of important events or day, such as 270 days to the election or the Senate's vote on important matters.
- Category K is to cover all remaining tweets that cannot be classified by categories A to J.

To see how people follow the five presidential candidates through Twitter, the author downloaded the Twitter ids (unique account names) of all followers: about 26 million Obama followers and about 4 million Republican candidate followers. All these followers were checked to see their following pattern, or to see whether they follow multiple candidates, even across the party line.

Additionally, this study analyzed the relationship among followers to check which information dissemination model emerges in the social network era: the two-step communication model or the network model. Rather than analyzing all these followers, 180 followers were randomly selected for analysis.

IV. Findings and analysis

Online social network analysis can be done in two ways: 1) structural analysis based on linkage behavior of network participants and 2) analysis of Twitter content (Aggarwal, Chap. 1, 2011).

1. Structural analysis

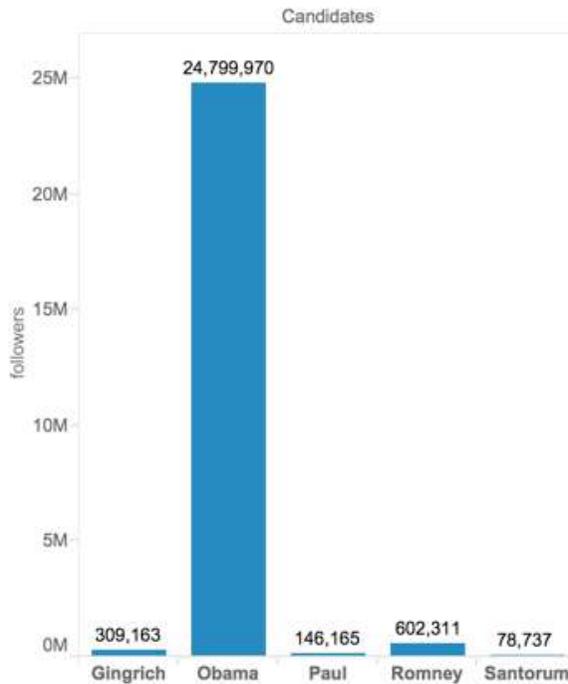
This study analyzed the tweets that had been posted by the five politicians.

1) The patterns by which Twitter users follow politicians:

Using Twitter APIs (application program interfaces) the author wrote, he downloaded the ids of all Twitter users who continue to follow the five politicians between November 14 and November 17, 2012, several days after Election Day of November 6, 2012.

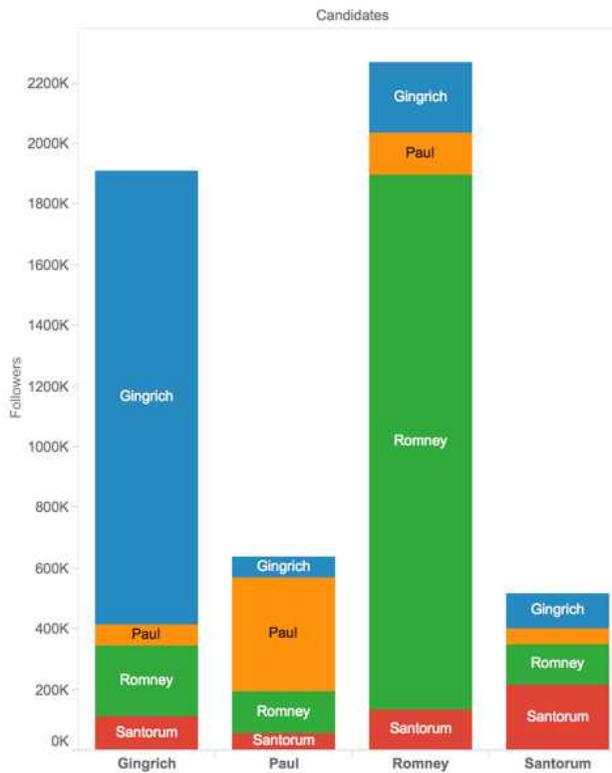
Out of 25,936,346 Obama followers, 24,799,970 (95.6%) followed only Obama; and the rest, 1,136,376 (4.4%), also followed the four Republican candidates as shown in Figure 1.

<Figure 1> Obama followers: the pattern of following other candidates



Among those who followed only Republican candidates, many followed at least one other Republican candidate, as shown in Figure 2. For example, 41% of Paul's followers followed at least another Republican candidate. Its ratio varied among other candidates: 22% for Gingrich; 22% for Romney; and 58% for Santorum. This finding suggests that Twitter may contribute to dividing the society since most followers get information mostly from one candidate or just from candidates from the same party.

<Figure 2> Republican followers: the pattern of following other Republican candidates



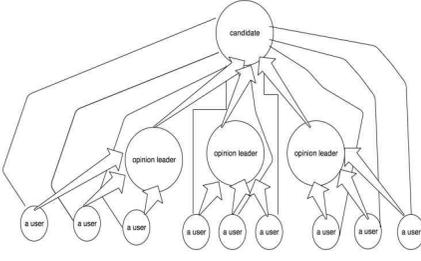
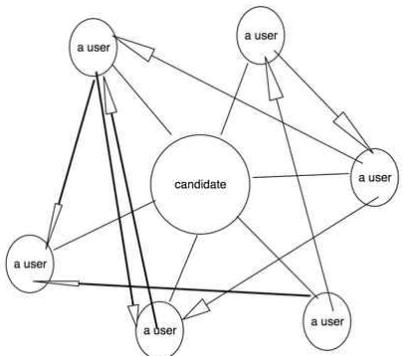
2) Two-step flow model or network model: This study also looked at whether political followers subscribed to only one politician regardless of parties, multiple politicians in the case of the Republic party, or politicians across the party line. The implication of this result will be critical. If the first model is prevalent, it may accelerate the fragmentation of society. If the last model is prevalent, on the other hand, Twitter may contribute to exposing followers to diverse ideas and facilitate democracy.

Another question was asked to see whether Twitter communication follows the two-step flow model or the network model. In the former

model, ordinary people may get information directly from the original sources, such as candidates, but they don't have enough time to closely follow a trail of information and expertise to fully interpret them. They need to rely on opinion leaders for additional information and/or interpretation of any information. In the network model, users subscribe to the original sources of information, and exchange or share information and its interpretation with other users.

The first model in Figure 3 represents the two-step model, in which opinion leaders with big circles follow a politician and pass on the messages to their followers, who are marked by small circles. Users, of course, follow a candidate, but follow opinion leaders for further information or interpretation of any relevant information. In the network model, the second model in Figure 3, people directly follow their favored politicians without any mediation, and they share information or interpretations of messages among other users without dominant opinion leaders.

<Figure 3> The two-step flow model vs. the network model

The Two-step Flow Model	The Network Model
 <p>The diagram illustrates the Two-step Flow Model. At the top is a circle labeled 'candidate'. Below it are three circles labeled 'opinion leader'. At the bottom are nine circles labeled 'a user'. Lines connect the candidate to each opinion leader. Arrows point from each opinion leader to their respective group of three users. Additionally, lines connect each user directly to the candidate, representing a two-step flow from candidate to opinion leader to user.</p>	 <p>The diagram illustrates the Network Model. A central circle is labeled 'candidate'. Surrounding it are six circles labeled 'a user'. Lines connect the candidate to each user. Arrows also connect the users to each other, forming a network where users follow other users, not just the candidate.</p>
<p>A line and an arrow show who follows whom. The simple line indicates how a user follows a candidate, while the arrow indicates how a user follows another user. In this model, the number of users who follow will be far larger than the number of people who are followed, opinion leaders.</p>	<p>A line and an arrow show who follows whom as in the two-step flow model. In the network model, the number of users who follow other users would be similar to the number of who are followed since users share information with each other without any dominant opinion leaders, who have many followers without much following.</p>

To test which model fits the data, the author randomly selected 180 Twitter users out of all users who follow any of the five candidates. The 180 users were composed of various groups: The first five groups who followed only one of the five candidates - Obama, Paul, Gingrich, Romney, and Santorum each; the sixth group, Republicans, who followed only multiple Republican candidates, but not Obama; and the

seventh group, who followed Obama and at least one Republican candidate, in some cases, all five candidates.

The author examined whether these groups followed others in the groups or were followed by them. According to the results, as shown in Figure 4, they were as often followed by someone in the network as they followed, except for 3) onlyGingrichSet and 7) onlyDiverse/Allset. Gingrich was accused of having many fake followers (McArdle, 2011), which can be manufactured easily by following others through programming, but cannot as easily have others follow them. So it is understandable that Gingrich followers have more in-network users to follow, also known as one-way friends, than followers from the in-network. Those who follow all candidates or multiple Republican candidates along with Obama seem to be not followed by as many in-network Twitter users as they follow. These people may tend to follow others at any opportunity. If so, they would not get followers as easily. This tendency is shown a little bit with Group 6, which follow multiple Republican candidates.

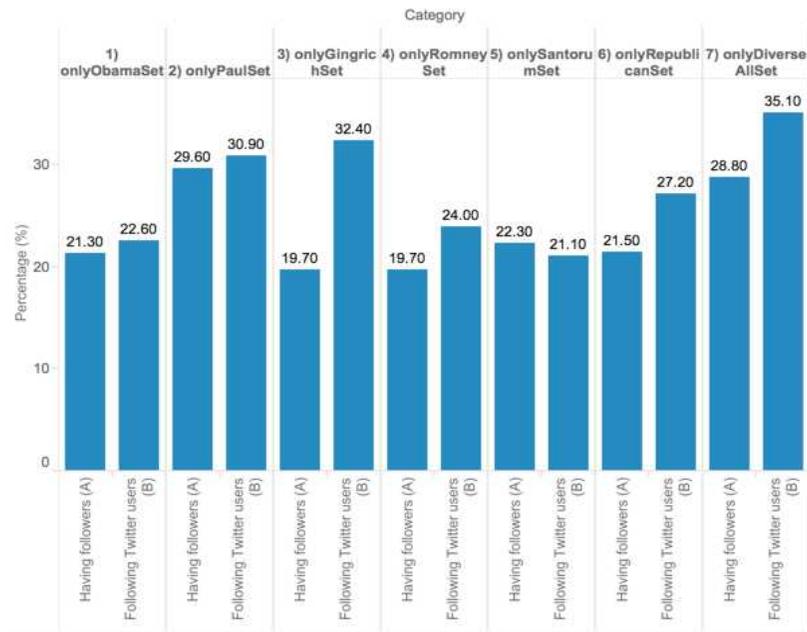
Any way, except for these two groups, the 180 users seem to follow the pattern of the network model rather than the two-step flow model.

To find whether there are emerging leaders in a network pattern, Twitter users' followers (others who follow Twitter users) and Twitter users' friends (those Twitter users follow) were compared. A high follower/friend ratio and a high number of posted tweets are a sign of high influence.

Ideally this study should have analyzed the pattern of how each of all Twitter users follows others in the in-network and is followed by them. But to download all the followers and one-way friends of approximately 30 million users was almost impossible for this study

because of Twitter’s limitations on downloadable data. That's why this study limited its examination to only the manageable 180 users when it analyzed the following pattern among Twitter users in the network.

<Figure 4> The pattern of Twitter followers



To compensate for this shortcoming, this study also looked at other characteristics of Twitter users. According to Table 1, the selected 180 users have been with Twitter a little more than two years on average; posted 882 tweets by the time this study collected the data. They had 116 followers and 267 friends, the ratio of follower/friend of 0.44. But a few among the followers in the network seem to have emerged as opinion leaders. For example, among 30 Obama followers, three posted plenty of tweets and more followers than friends. One person posted

7,742 tweets, 233 followers and 140 friends. Another one posted 28,537 tweets, 5,164 followers and 4,690 friends. A third one posted 3,436 tweets, 560 followers and 444 friends.

In terms of the influence of Twitter users, measured by the number of tweets, followers, the ratio of followers over friends, the people who followed all the five candidates seemed to be the strongest, followed by Obama followers. On the other hand, Gingrich followers had kept their accounts for a long time, but their tweets and followers, the ratio lagged behind other candidates' followers.²⁾

<Table 1> The characteristics of Twitter users

	Days with Twitter account	Tweets	Followers	Friends	Follower/Friend
Obama	709	1770	259	448	0.58
Paul	708	722	48	99	0.48
Gingrich	1164	71	16	74	0.22
Romney	565	558	59	126	0.47
Santorum	619	172	65	204	0.32
Republicans*	842	386	39	105	0.37
Diverse**	790	1553	122	460	0.27
All***	676	1821	319	619	0.52
Average	759	882	116	267	0.43

Note: Republicans* means users following multiple Republican candidates. Diverse** represents users who follow Obama and other Republican candidate(s), not all. All*** represents users who follow all candidates.

2) This study analyzed all tweets, not necessarily tweets on politics. Thus, there is a big assumption that opinion leaders in general are more likely to lead political discussions than otherwise.

2. Message analysis – component

1) *Tweet types and features*: To find out how the politicians used Twitter, this study analyzed all the tweets up to mid-March 2012, as shown by the ending date of tweets (Refer to the fifth row of Table 2 below). Tweet count did not match the actual number of tweets retrieved from each candidate's Twitter profile page because it did not reflect deleted tweets or it simply did not provide an accurate count ("Twitter"; "I'm Missing"), especially with Gingrich, who was accused of having many fake followers (McArdle, 2011). So the quantitative analysis was done not based on the absolute numbers, but their ratios.

Obama, Paul, Gingrich, Romney, and Santorum sent out their regular tweets one way to their followers in 88.5%, 93.9%, 72.5%, 98.0%, and 80.8% of times. In other times, they used Twitter to retweet others' tweets or reply to them. This interactive method was adopted in the order of Gingrich, Santorum, Obama, Paul and Romney (refer to item 7), 8) and 9) in the first column of Table 2). Only 2.0% of Romney's tweets interact with other Twitter users. This shows that Twitter was a one-way communication tool between the presidential candidates and their followers. Also political candidates began to make the move to include multimedia, attaching visuals to text-based Twitter. Romney attached visuals most frequently, using them in 15% of cases (refer to item 13 in the table).

Hashtags and links to http web addresses were used more frequently than visuals. In the case of Paul, he embedded hashtags in tweets in 90.6% of tweets and links to http addresses in 73.7% of tweets. Even though other candidates used far less than Paul, this

suggests that politicians used a tweet as a hook to hashtags and http links that would provide more detailed information for followers.

<Table 2> Various Ways of Using Twitter

Candidate	Obama	(%)	Paul	(%)	Gingrich	(%)	Romney	(%)	Santorum	(%)	Total 5	(%)
ID	813286		287413569		20713061		50055701		5837900			
1) Setup date	3/5/07		4/24/11		2/12/09		6/23/09		7/20/09			
2) Starting date of Twitter	5/1/07		8/23/11		7/27/10		7/9/09		7/25/09			
3) Ending date of Twitter	3/17/12		3/13/12		3/12/12		3/12/12		3/11/12			
4) Tweet count on profile	2811		819		3230		827		1605			
5) Total tweets retrieved	3158		879		1471		864		1751			
6) Regular tweets	2796	88.5	825	93.9	1067	72.5	847	98.0	1415	80.8	6950	85.6
7) Retweets	308	9.8	44	5.0	158	10.7	2	0.2	215	12.3	727	8.9
8) Replies & retweets	32	1.0	1	0.1	9	0.6	14	1.6	2	0.1	58	0.7
9) Relies	22	0.7	9	1.0	237	16.1	1	0.1	119	6.8	388	4.8
(total)	3158		879		1471		864		1751		8123	
10) Link to photo	108	3.4	24	2.7	80	5.4	101	11.7	41	2.3	354	4.4
11) Link to video	138	4.4	25	2.8	20	1.4	4	0.5	28	1.6	215	2.6
12) Link to media*	0	0.0	3	0.3	7	0.5	25	2.9	2	0.1	37	0.5
13) Link to visuals	246	7.8	52	5.9	107	7.3	130	15.0	71	4.1	606	7.5
14) Hashtags	953	30.2	796	90.6	325	22.1	280	32.4	633	36.2	2987	36.8
15) Links to http address	2206	69.9	648	73.7	772	52.5	579	67.0	593	33.9	4798	59.1

Note. media* is a newish developer-focused project called Twitter Cards. Read about it at <https://dev.twitter.com/docs/cards>.

2) *Content analysis of messages*: The author content analyzed a random sample of 500 tweets, 100 tweets from each of the five candidates.

Unlike the four Republican candidates, Obama always described his performance directly rather than relying on others, as shown in items A and B of Table 3. On the other hand, the ratio of relying on others ranged between 32% and 46% for the Republic candidates. In the case of expressing ideas, its outside-reliance ratio was 29% for Obama while the ratio was between 43% and 76% for the Republican candidates (refer to items C and D of Table 3). When Obama criticized his opponents, he relied on others only 17% of the time, while his

Republican counterparts more heavily relied on others – except for Romney with 8.7%. When three categories are combined (performance, ideas, and criticism), Obama relied on others in 17% of cases while his counterparts' ratio varied between 34.7% and 53.7%. Among the three categories, the criticism category accounted for only 7.9% for Obama, while the ratio of criticism ranged between 11.0% and 26.1% (refer to the last row in Table 3). As the president, Obama may not need to rely on external sources to support his ideas. Also he did not feel to criticize his rivals as much as the Republican candidates.

On the other hand, Obama focused on soliciting Twitter followers to do more than read tweets, imploring them to attend a meeting, donate money, participate in a petition, etc. (17%). Santorum showed the most personal side by writing the largest number of tweets about his personal matters or express thanks to others who supported him, his party, or country.

<Table 3> Content analysis of tweets

(unit: %)

Category	Paul	Gingrich	Romney	Santorum	Obama
A) Performance described by self	23	23	17	19	28
B) Performance described by other media	13	12	8	16	0
C) Ideas described by self	16	17	9	5	30
D) Ideas described by others	16	13	15	16	12
E) Criticism of opponents by self	8	4	21	7	5
F) Criticism of opponents by others	16	4	2	4	1
G) Solicitation	4	9	11	5	17
H) Thanks	3	8	9	14	5

I) Personal side	1	9	6	13	1
J) Reminder		1			1
K) Miscellaneous			2	1	
Total	100	100	100	100	100
Reliance on others(%) =(B+D+F)/(B+D+F+A+C+E)	48.9	39.7	34.7	53.7	17.1
Criticism(%) = (E+F)/(A+B+C+D+E+F)	26.1	11.0	31.9	16.4	7.9

V. Conclusion

The study's findings seem to suggest that Twitter works as an echo chamber rather than a forum where diverse opinions are competing for the attention of users. So more education on how to use Twitter in a smart way should be offered for people to nurture democracy.

People's communication pattern on Twitter suggests the network model, in which Twitter users communicate with each other for sharing information. As Berry (2003) estimated, about 10 percent of Twitter users emerged as opinion leaders who tend to influence others by posting numerous tweets and having more followers than friends. This study found the same result: 3 out of 30 Obama followers had the characteristics of opinion leaders.

Presidential candidates used Twitter mostly as a one-way channel when they communicated with their followers. Politicians used a tweet as a hook to hashtags and HTTP links that provided more detailed information for followers. They made a move to include visuals, but less than 8 percent of tweets took advantage of visual features.

In terms of messages, President Obama and the Republican candidates used Twitter to announce their performance and ideas and criticize their opponents. The differences between them existed in information sources for their tweets and the level of criticism. Republican candidates tended to use external sources to promote themselves or criticize their opponents, while Obama, as president, did not need to rely on external sources as heavily as his Republican counterparts.

In the Internet era, people are capable of accessing an unlimited amount of information and data. To secure the attention of voters, politicians should maintain stable channels to their constituents through the latter's subscription to the former's messages - like Twitter updates. While his fellow candidates struggled, Obama succeeded by embracing the power of social media and effectively using it.

However, while securing people's attention is one challenge, gaining their support is a whole other obstacle. In the web 2.0 society, people would reach out to not only political candidates, but also many others. While people interact and cooperate in a network, they would run into a person they can trust. If this person garners enough followers, this individual will be influential and can persuade other followers. In a networked society, an influential would emerge based on his or her talents and efforts, like power bloggers.

As politicians become savvier in their use of the social media channel, they may consider not only garnering more Twitter followers but also winning the hearts of influentials. If politicians can't win their hearts, then they may try to buy their hearts, as businesses have done. The messenger is often more important than the message itself (Keller & Berry, 2003).

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2012년 미국 대통령 후보자들의 선거를 위한 트위터 사용 및 트위터 추종자들의 연결 패턴

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논문요약

이 논문은 다섯 명의 미국 대통령 후보가 2012 대통령 선거 캠페인에서 어떻게 트위터를 사용하고 트위터 사용자가 후보자로부터 정보를 받아 다른 트위터 사용자와 어떻게 정보를 공유했는지를 연구하였다. 3000만 트위터 사용자들은 오바마 또는 공화당 후보의 트위터 메시지를 구독했지만, 동시에 두 정당 후보자를 따르는 경우는 드물었다. 트위터 사용자가 어떻게 트위터 메시지를 받고 공유하는지 보기 위하여 2 단계 유통 모델과 네트워크 모델을 살펴 보았다. 무작위로 선택된 180명의 트위터 사용자를 바탕으로 분석한 결과, 사용자가 선호하는 후보로부터 메시지를 직접 받고 또한 다른 트위터 사용자와서도 정보를 공유하는 네트워크 모델이 적용되었다.

이 네트워크 모델에서 일부 사용자는 많은 트위터메시지를 생산하고 또한 자신이 추종하는 사람 수 보다 자신을 추종 하는 사람이 많은, 소위 오피니언 리더로 부상 하는 것 같았다. 저자는 2012년 3월까지 후보자들이 쓴 트위터 메시지중 무작위로 500 트위터 메시지 내용을 분석 한 결과 자신의 업적이나 비전 언급, 상대방 비판, 부탁, 사적인 이야기 등 11 가지 종류의 메시지를 발견했다. 후보자들은 추종자에게 보다 자세한 정보를 제공하기 위해서 해시 태그 및 HTTP 링크를 트위터에 포함했고, 또한 기본 텍스트 뿐 만이 아니라 비주얼도 이용하기 시작했다. 메시지 내용면에서 공화당 후보 들은, 그들의 업적과 비전을 설명하기 위하여 또는 다른 후보자들을 비판하기 위하여 메스콤과 같은 외부 소스에 크게 의존했으나, 오바마는 현직 대통령으로서 그럴 필요가 크지 않은 것으로 보였다. 본 연구는 트위터 사용자가 어떤 후보를 추종하는가를 볼 때는 3000만 트위터 사용자를 분석했지만 다른 경우는 훨씬 적은 수의 트위터사용자를 분석했다. 보다 정확한 결과를 위해 미래의 연구는 더 큰 샘플 분석이 바람직 할 것이다.

주제어: 트위터 사용, 2012년 미국 대통령선거, 5명의 후보자, 링크 유형, 네트워크 모델

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