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# Re-examining The Two-Step Flow of information in the age of digital media: The case of the 2012 presidential election in the United States

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**Re-examining The Two-Step Flow of information in the age of digital media:**

**The case of the 2012 presidential election in the United States**

by

**Jo-Yun Li**

A thesis submitted to the graduate faculty

in partial fulfillment of the requirements for the degree of

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Program of Study Committee:  
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2013

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## ABSTRACT

An online questionnaire was administered to a sample of 233 young adults qualified to vote in the 2012 U.S. presidential election. The findings show that respondents depended more on the traditional media and interpersonal sources to be aware of, form attitudes toward, and decide on political candidates and issues.

The relationships of source use at the three stages point to a general flow of information quite different from that outlined in the two-step flow hypotheses. At the awareness stage, the findings indicate that people tended to choose between the traditional media and social networking sites as their main sources of information about the presidential election. Users of both sources also refer to interpersonal sources, indicating a complementary relationship. Thus, the interpersonal sources tended to supplement, but not replace, traditional and social media use. At the stage in which voters were forming their attitude about the candidates and their platforms, all three source categories were utilized, suggesting a symbiotic type of relationship among them. At the point when voters are trying to solidify their voting choice, the correlations show the traditional and social media competing for audience attention, supplemented by interpersonal sources.

Voters used interpersonal sources across the three stages, suggesting their utility as political information conduits even in the digital age. In other words, the study failed to detect any evidence that the social media were replacing or substituting for interpersonal contacts—and the traditional media—as the main sources of presidential election information.

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## CHAPTER 1. INTRODUCTION

New information technologies have changed the way people work, communicate, and learn about the news. Of these new technologies, nothing has been as transformative as the Internet. According to Krueger (2002), “the Internet provides unique information and communication capacities” (p. 476); it also permits users to exchange large amounts of information instantaneously regardless of geographic distance. It is not a surprise, therefore, that the Internet’s influence on political discourse has been an important object of research since the 1990s.

The Internet continues to play an important role in politics and in political communication. To it has been attributed a number of positive outcomes, such as enhancing citizen literacy about government policies, offering a venue in which to discuss issues, providing a way of getting in touch with elected officials, obtaining voter registration materials, and gathering information that facilitate more active participation in politics (Bimber, 1988). Connell (1997), a professional campaign consultant, reports that after the 1996 presidential campaign in the United States, “more than a quarter of all voters were online and about 10 percent made their voting decision based upon information collected primarily from the Internet” (p. 64). Kaid (2002) observes that by 2000, “more and more voters have access to the Internet and have used it as a way to gather information about political candidates and issues” (p. 27). Rumbough and Tomlinson (2000) claim that 144 million Americans could view the websites of candidates from their homes in 2000. Although that year’s presidential campaign did not replace conventional political advertising with the Internet message (Kaid, 2002), the Obama campaign unleashed online power, making the web the primary medium of campaigning in 2008. The traditional media such as television and radio were completely overshadowed, according to many

(Batra, 2010).

There are several advantages to the Internet as a vehicle for political communication. It allows people to more easily choose and select how and when they are exposed to political information. Highly interactive, the amount of information it carries makes it the first recourse of those seeking political data. As Wang (2007) points out, “the Internet is the equivalent of a political WalMart, which provides a one-stop shopping source for political information, video clips, candidate speeches and issue positions, up-to-date results, and ballot information ” (p. 381). Some optimists think the wealth of political information available on the Internet enhances political interest, encourages opinion expression, and increases political participation. Johnson and Kaye (2000) indeed found that Internet users demonstrate more interest in politics. Their study indicates a stronger positive relationship between political attitudes and information seeking among regular online users.

Are these capabilities changing the usual flow of political information? Are traditional notions of information flows and their influence on voters’ decision-making still pertinent in the digital age? As early as 1997, Bonchek (1997) has argued that the Internet’s unique transmission capability has altered the flow of information throughout society and consequently has impacted the political behavior of the general public.

In the past, “interpersonal providers of information were ranked as much more important than institutions or the mass media as sources of political news. [Today] people may bypass the most knowledgeable information provider to ask questions of someone they know” (Case et al., 2004, p. 64). Johnson (1997) thinks that the accessibility of information is key in determining what sources people select, the reason why interpersonal sources are generally preferred over other channels. Hypothesizing a “two-step flow of communication,” Lazarsfeld, Berelson and

Gaudet (1948) suggest that the flow of information may be less direct than was commonly supposed. That is, the mass media tend to influence opinion leaders first, who then pass along what they have read and heard to those for whom they are influential in their communities.

Katz and Lazarsfeld (1955) point out that many obtain information and opinions from other people rather than from the mass media or other sources. They labeled these influential friends, family members and acquaintances as “opinion leaders.” The two-step flow hypothesis has been “amended in a dozen ways to prefer influence over information, talk between equals over opinion leaders, multiple steps over two steps, etc.” (Katz, 1987, p. 26), but the consensus was that face-to-face relationships (between and among family, friends, and neighbors, for example) are such an important influence on human behavior (Katz and Lazarsfeld, 1957).

Is the two-step flow still able to explain the sources to which people refer when they seek political information in the digital age? Do opinion leaders still exist? If they are still around, are they the same entities and are their characteristics the same as those attributed to them in past studies? Or has the Internet replaced opinion leaders?

This study attempts to determine a model of political information seeking and gathering during election campaigns. It is assumed that, as in many instances, political communication aim to enhance information or knowledge seeking, and change attitudes and behaviors. This study asks: How do voters get political information and how do information channels influence their attitudes toward candidates and voting decisions? A knowledge, attitude, and practice (KAP) survey was conducted to gather data for this investigation. In effect, this study re-examines the two-step flow of information within the context of the 2012 presidential election. What sources do voters consider expert and trustworthy in informing them about issues and help shape their voting decisions? A survey of those identified as opinion leaders was conducted to this group’s

characteristics and communication habits.

This study seeks to deepen scholars' understanding of how the Internet may influence patterns of political participation. The purpose is to explain political information seeking habits during election campaigns, and the extent to which information sources are used during the campaign to increase knowledge, change attitude, and influence voting behavior.

The study re-examines the two-step flow of information during presidential election periods, investigating the so-called opinion leaders and the role they play in changing traditional information flows or patterns within the political sphere. Political campaigners and public relations practitioners who design public information campaigns are expected to benefit from the results of this study. Understanding what channels and which approaches are more appropriate to transmit political information will enable them to reach their target audiences more efficiently.

## CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

This chapter discusses the two-step flow hypothesis that undergirds this study. The aim is to determine the sources voters trust and use for political information in the three stages that constitute the process of making a choice about which political candidates to support and vote for in elections: (1) awareness or information seeking, (2) attitude shaping, and (3) decision-making. The objective is to determine whether the two-step flow of information can be discerned throughout this process. The chapter also explores how opinion leaders, as integral actors in the two-step flow hypothesis, are defined and characterized in previous studies. In the light of the growing use of the online media for political communication, information flows as suggested by reported information source use is identified. The study's research questions are outlined in the last section.

### The Two-Step Flow Theory: A Background

The two-step flow was introduced by Lazarsfeld, Berelson and Gaudet in *The People's Choice*, a 1944 study that focused on the process of decision-making during a presidential election campaign. In the book *Personal Influence*, which examined the communication dynamics of the 1940 presidential elections, Katz and Lazarsfeld (1955) introduced the notion of opinion leadership:

What we shall call opinion leadership, if we may call it leadership at all, is leadership at its simplest: it is casually exercised, sometimes unwitting and unbeknown, within the smallest grouping of friends, family members, and neighbors...it is the almost invisible, certainly inconspicuous, form of leadership at the person-to-person level of ordinary, intimate, informal, everyday contact (p. 138).

This description follows their observation that "certain people in every stratum of a community

serve ‘relay roles’ in the mass communication of election information and influence” (p. 31).

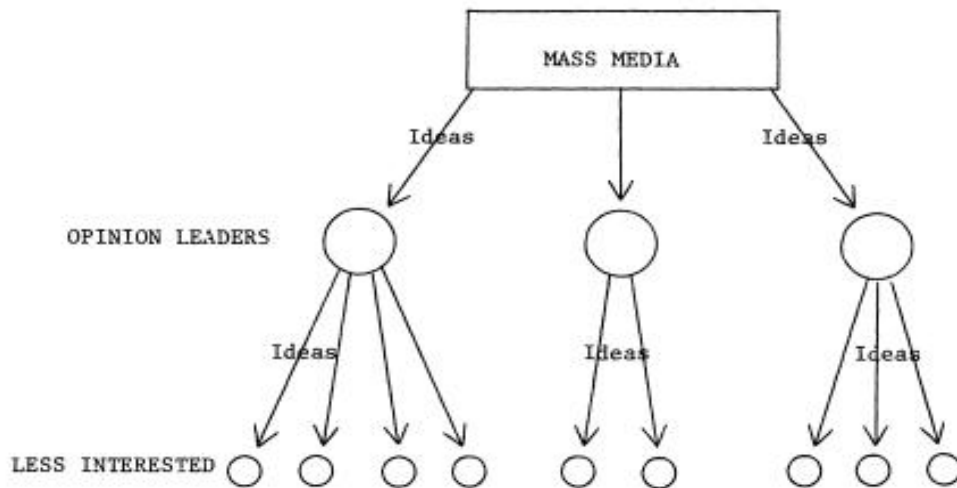
Based on their data, they observed that radio and the print media seemed to have less influence on people’s voting decisions, a finding that tempered the belief in the “magic bullet” theory of mass media effects. The authors wondered: “If the mass media are not the major determinants of an individual’s vote decision, then what is?” (p. 31). They then focused their attention on voters who reportedly changed their preference during the campaign. Many of these respondents reported that other people made them change their mind. The authors explain: “Those people who made up their minds late in the campaign or who changed their minds during the campaign were more likely than other people to mention personal influence as having figured in their decisions” (p. 63). Thus, they concluded “the one source of influence that seemed to be far ahead of all others in determining the way people made up their minds was personal influence” (p. 32). Those who exerted such an influence were called “opinion leaders.”

Having identified these opinion leaders, the next question was: Who or what influences them? Examining those identified as assuming this role, Katz and Lazarsfeld (1955) found that “opinion leaders reported much more than the non-opinion leaders that for them, the mass media were influential” (p. 32). In other words, opinion leaders were considerably more exposed to the formal media of communication than the rest of the population.

Thus, Lazarsfeld et al. (1948) hypothesized that information from the media moves through two distinct stages. First, individuals (opinion leaders) who pay close attention to the mass media and their messages receive the information. Then, opinion leaders pass on their own interpretations (in addition to the actual media content) to others within their realm of influence (Figure 1). The term “personal influence” was coined to refer to the process intervening between the media’s direct message and the audience’s ultimate reaction to that message. In this study,

opinion leaders were found to be exerting this influence, with the ability to convince people to change their voting attitudes and behaviors.

The hypothesis assumes that “ideas often flow from radio and print to the opinion leaders and from them to the less active sections of the population” (p. 151). “In the first step, messages are reported and distributed by the mass media to what is, to all exterior appearance, a more or less homogeneous mass audience. In the second, horizontal opinion leaders interact and contextualize these mediated messages for their small groups who then internalize the interpretations of the contents” (Bennett and Manheim, 2006, p. 213).



**Figure 1 Original two-step flow hypothesis (Lazarsfeld et al., 1948)**

### Studies of the Two-Step Flow

Before Lazarsfeld, Berelson and Gaudet published the *People's Choice*, the common premise is that the public is always susceptible to messages from the “omnipotent” media, and that this effect is direct and linear. The notion that there are factors that mitigate mass media effects became pervasive with the recognition of the intervening role of contextual and interpersonal variables, including opinion leadership, in moderating media impact. Weimann

(1982) explains: “The role of interpersonal relations in the flow of mass communication has undermined the image of a passive, atomized society and at the same time has caused a growing interest in personal networks as channels for disseminating information and influence” (p. 764). A series of seminal studies (e.g., Berelson and Steiner, 1964; Katz, 1957; Katz and Lazarsfeld, 1955; Lazarsfeld et al., 1948; Merton, 1949) specifically point to the value of opinion leaders who “pass on what they read or hear to followers who look at them as a source of guidance and social confirmation” (p. 764). Indeed, in the diffusion process, it has been surmised that information about a new idea, technology or practice is first conveyed by the mass media to a battery of opinion leaders whose interpersonal communication skills help propel the adoption of innovations to a broader group of audiences in a scheme generally known as the “two-step flow” of information.

Studying how agricultural innovations diffuse, Sapp and Korsching (2004) reported the same sequence of information flow. According to them, “innovation diffusion entails a two-step process: (1) information delivery, typically through mass media outlets, and (2) social persuasion through endorsements from opinion leaders as respected referent others. Opinion leaders can be either individuals or organizations located either locally or within a broader social collectivity” (p. 340). In other words, opinion leaders are responsible for bringing new ideas or innovations into a social system and setting the stage for changing the norms within that society so that large-scale adoption of an innovation can occur. This is based on the established proposition that when a number of persons interact over an extended period of time, mutual expectations and norms develop for their behavior, and their actions become dependent on these norms and expectations (Marsh and Coleman, 1956).



### **Criticisms of the Two-Step Flow**

The two-step flow hypothesis was first proposed in the absence of empirical data because the design of the original study did not expect the importance of interpersonal relations in voting decisions. Most of the works that investigated this phenomenon used critical-cultural approaches with limited generalizability (Weimaann, 1982). Katz and his colleagues conducted four studies to provide empirical support for the function of interpersonal influence. These studies are more popularly known as the Rover study (Merton, 1949), the Decatur study (Katz and Lazarsfeld, 1955), the drug study (Menzel and Katz, 1955), and the Elmira study (Berelson et al., 1954). The results of these investigations suggest that “personal influence affected voting decisions more than mass media did, particularly in the case of those who changed their minds during the [political] campaign” (Katz, 1957, p. 66). These scholars also found that interpersonal relations did not only serve as channels of communication, but also as sources of pressure to conform to a group’s way of thinking and acting. They also functioned as sources of social support (Katz, 1957).

Successive studies that have examined the hypothesis failed to provide the exact structure of the two-step model and the processes by which interpersonal mechanisms operate (Robinson, 1976). According to Deutschmann and Danielson (1960), the hypothesis can only describe the primary influence on people’s attitudes and behavior regarding an innovation as it diffuses through a social system, but was insufficient to explain their results. The hypothesis did not adequately explain the flow of learning that occurred in their study wherein two-thirds of their respondents attributed their awareness to the mass media instead of face-to-face communication; about half credited the media with increasing their comprehension of the topic. “If the two-step flow hypothesis is concerned with media effects on information level as well as effects on

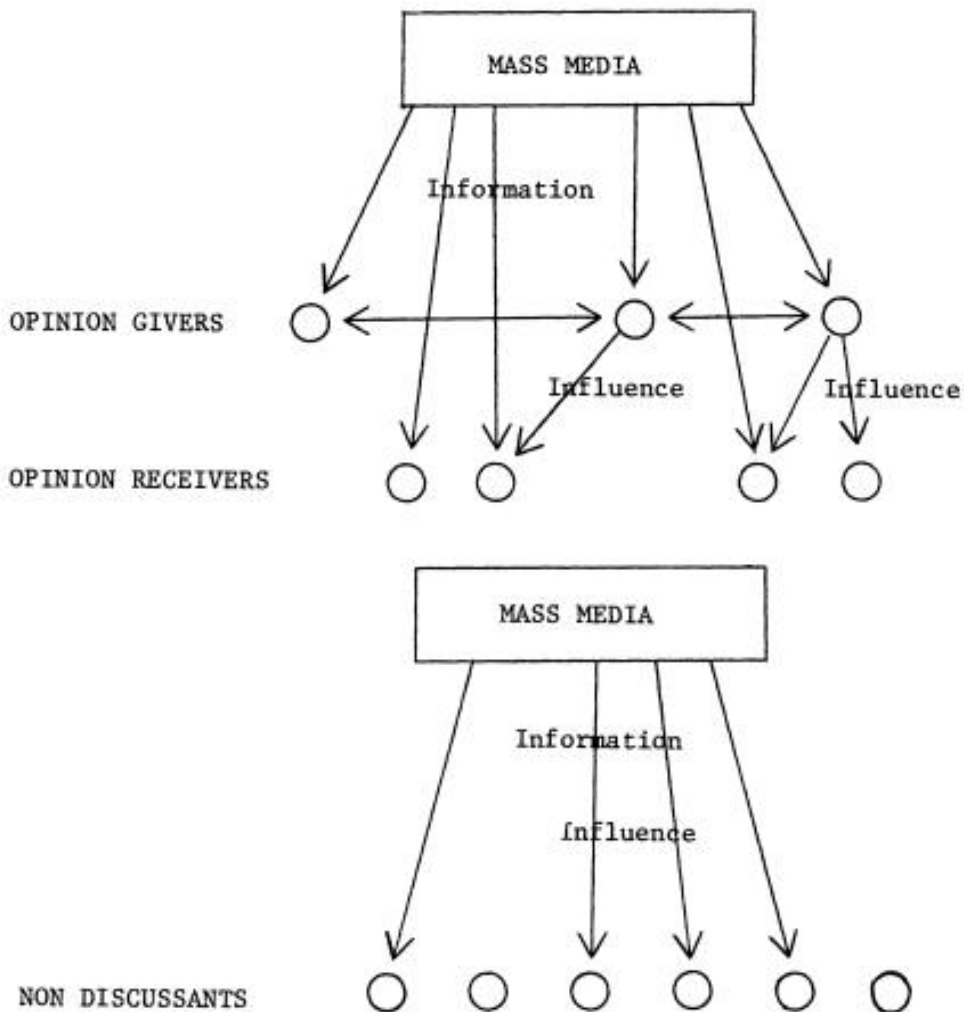
attitudes and behavior, the findings of the Deutschmann and Danielson studies seem to contradict what the hypothesis asserts” (Troidahl, 1966, p. 610).

Weiss (1970) thought that the two-step flow was an overly simplified conception of the relationship between the mass media, opinion leaders, and the public, and the findings of others seem to bear this out. For example, Roper (1975) found that few of his respondents actually considered “other people” as crucial sources of news. According to Laumann and Guttman (1966), friendship networks in society are organized more horizontally than the vertical flow pattern described by Lazarsfeld and his colleagues. Troidahl and Dam (1965) observed that frequent conversations were more popular among opinion leaders themselves than between opinion leaders and the people whom they are supposed to influence.

Robinson (1976) conducted a study the findings of which can only support the second part of Katz’s (1957) assertion that “personal influence figures both more frequently and more effectively than any of the mass media” in people’s voting decisions. “Any influence that takes place between one opinion leader and another would hardly constitute a relay of mass media information, as the second stage of the original model implies” (p. 306). In other words, conversations between opinion leaders and their publics might also happen even before any step occurs. Robinson (1976) also note that “the term is too general and can be replaced by information characterizing the link between the mass media and opinion leaders, and influence as the link by which opinion leaders structure this information to influence those less active” (p. 306). He therefore offered a revised conception of the two-step flow shown in Figure 2.

Figure 2 shows the flow of information and influence among opinion givers and opinion receivers as a multi-step process in which the mass media are but one source; however, “people not involved in such a social network seem not susceptible to a one-step influence from the mass

media” (Robinson, 1976, p. 316).



**Figure 2 Revised multi-step flow of information (Robinson, 1976)**

According to Weimann (1982), there are four significant weaknesses of the two-step flow proposition. First, the model ignores the evidence of direct flows as the mass media are able to directly convey new messages to audiences (e.g., Westley, 1971). Second, the hypothesis also ignores the existence of different stages in the diffusion process (awareness, interest, evaluation, trial and adoption) in which particular sources are more likely to be used (e.g., Rogers, 1962). Third, the model, according to Troidahl and Dam (1965), ignores the existence of horizontal

flows evident when opinion leaders share information and opinions amongst themselves. Fourth, studies that have examined the model also have been criticized for methodological weaknesses, among them the use of the same measurements for the acquisition of information about different topics, such as consumer items versus political issues.

### **Sources of Political Information**

That personal influence may be mediating mass media effects may come as good news to those who are unhappy with the media's performance in covering political affairs. In 1804, American president Thomas Jefferson (1804) lauded "the firmness with which the people have withstood the late abuses of the press. The discernment they have manifested between truth and falsehood show that the public may safely be trusted to hear everything true and false, and to form a correct judgment between them" (p. 1174). These days, the sources of "everything true and false" are more numerous and sophisticated.

**Sources of information to obtain political knowledge (awareness stage).** Today, according to Weaver (1996), the media "are most likely to matter to voters in making them aware of and concerned about certain issues" (p. 46). In a survey, Chaffee (1994) found that newspaper reading and attention predicted people's knowledge about political issues. Chaffee and Times (1982) also observed that newspaper readers are superior in their political knowledge about party differences on issues, finding that "newspaper reading is consistently associated with informational purposes and with direct evidence of political information seeking" (p. 54).

What is generally observed about the effects of reading newspapers do not hold for television viewing. Some scholars have found television news not very effective in transmitting information to voters (e.g., Patterson and McClure, 1976). This may be because people who rely on television alone apparently get less news than newspaper and magazine readers (e.g., Becker

and Whitney, 1980). However, Chaffee (1994) noted that television news strongly correlated with audiences' knowledge about candidates and their differences on issues. "Television was clearly the principal medium through which voters informed themselves about candidates as individuals as distinct from their identification with parties and their stands on issues. In general, various studies have been confirming the power of television news to enhance political knowledge" (Chaffee and Frank, 1996, p. 53). Later studies (e.g., Walker et al., 2008) also reported that people considered television a more important source of political information than newspapers and the Internet. In addition, Walker et al. (2008) found that those who voted in the 2008 United States presidential election reportedly obtained political information from news-only stations. According to ZDNet Research (2004), television is still the primary source for political information, with three-quarters of American voters naming it their main source of campaign news compared to 38% who mentioned newspapers, 16% who identified radio, 15% who said it was the Internet, and 4% who claimed it was magazines. Although the use rate of the Internet for political news is not that high, more broadband users report that they increasingly get their information online.

**Sources of information that shape political attitudes (attitude formation stage).** The terms "attitude" and "public opinion" are often used interchangeably. According to Katz (1972), "attitude is defined at the individual level, specifically, the organization of feelings and beliefs according to which a given person evaluates an object or symbol positively or negatively" (p. 13). How do people develop attitudes about persons, objects, events, or issues? McCombs and Shaw (1972), interested in the correlation between what was emphasized by the media and what the voters thought important, found that the media's and the voters' ranking of issues were similar. Weaver (1996) explains the role of the media in shaping political attitudes:

Mass communication crystallizes and reinforces more than it converts; but where reinforcement means buttressing existing attitudes and opinions, crystallization refers to the learning, or sharpening, of such attitudes and opinions, implying a teaching role for mass communication. Attitudes are not constructed from thin air but rather from the information that people believe to be true and that is most salient or easily accessible to them (p. 36).

Other studies also suggest that the impact of newspapers and television on public opinion about which issues are important is greatest during the final few months of a campaign. This is especially true for newspapers, which play a major role in making candidates look more salient and superior than others (Weaver, 1981). In other words, “news coverage may influence perceptions of national importance, which in turn may govern the ingredients of presidential performance appraisals” (Miller and Krosnick, 2000, p. 303).

Entman (1989) thinks that “the media do not control what people prefer; they influence public opinion by providing much of the information people think about and by shaping how they think about it” (p. 361). He argues that “Americans exercise idiosyncratic dispositions as they ponder the news, but the media’s selection of data makes a significant contribution to the outcome of each person’s thinking” (p. 361). Entman (1989) suggests that the media are able to contribute to but not control the structure of political information that shapes the way people think “because [people’s] partisan and ideological loyalties arise from socialization in a political culture transmitted and constantly altered by parents, teachers, leaders, friends, most of whom use the media” (p. 366). As Weaver (1996) points out, although the media allow voters to be aware of and concerned about certain issues, they teach less specific issue positions of candidates, less directly teach attitudes and opinions, and even less directly impact voting behavior.

**Sources of information for political decision-making (decision-making stage).** For many, deciding whom to vote for in elections is a daunting task. Diminishing the difficulty of decision-making is the primary goal of political campaigners, a function that can be performed by different information sources (O'Keefe et al., 1976).

According to Weaver (1996), the media often reinforce political interest and voting intentions. For example, he found in his 1976 election study that “television news exposure during the spring primaries played a significant role in stimulating later voter interest in the campaign” (p. 44). Thus, paying attention to newspapers, radio and television news seems to involve voters in the political process rather than alienate them. However, Weaver (1996) argues that although the media are able to involve voters, they are less likely to influence attitudes and opinions directly, and least likely to influence voting behavior directly. Because of this, scholars assumed that interpersonal communication is more likely to demonstrate a direct influence on voting intentions and behavior. As Putnam (1966) observed, “a number of studies of voting behavior have shown that the majority views in a community have a disproportionate advantage in gaining and holding adherents” (p. 640).

Interpersonal discussion networks have been shown to exert important influences on political behavior (Huckfeldt and Sprague, 1996). For example, Beck et al. (2002) reported that “people with whom we have close relationships, especially relatives, typically dominate interpersonal discussion networks” (p. 61). Voters looking for party cues identify personal networks as the main sources of these cues, instead of the mass media. Moreover, these party cues were found to influence voting behavior directly (Beck et al., 2002). In short, for many, interpersonal networks are the primary sources of information for political decision-making.

This is so, according to Huckfeldt and Sprague (1996), because interpersonal

communication provide low-cost, credible, customized political information. Additionally, voters are able to select the interactions in which they participate. The idea that people discuss media messages with others dates back to Katz and Lazarsfeld's (1955) "filter hypothesis," which claims that "personal communication mediates the influence of mass communication on individual voters, reinforcing or blocking the impact of the media, depending on the evaluative implications of that information and on the political composition of voters' discussant networks" (p. 234). These scholars contend that interpersonal discussion is not only an alternative source for receiving political information, but also a tool with which to tell people whether media messages are true, and whether these messages should be accepted or rejected (Merten, 1994; Mutz and Chaffee, 1988; Schmitt-Beck, 2003).

In summary, because most voters do not internalize the messages received from the mass media, the social flows of political information encountered by them in everyday life are becoming important forces for determining the direction of their votes.

### **Opinion Leaders**

In their original formulation, Katz and Lazarsfeld (1955) advised communication scholars that "the traditional image of the mass persuasion process must make room for people as intervening factors between the stimuli of the media and resultant opinions, decisions and actions" (Katz and Lazarsfeld, 1955, p. 33). Since then, opinion leaders have held the attention of researchers who sought to determine who these people are and the extent of their influence over others in their respective social systems.

There is no shortage of synonyms for opinion leaders. "These individuals appear in the literature under a variety of names reflecting the interests of the investigators studying interpersonal influence: trusted others, significant others, innovators, thought leaders,



trendsetters, influentials, as well as opinion givers. “Many labels, including ‘opinion leaders,’ imply qualities that go beyond simple informal advice-seeking from peers, suggesting delegation of power or responsibility for decisions by the person asking advice, or intentional persuasion on the part of change agents, political activists, or would-be authority figures” (Black, 1982, p. 170).

Later, Glock and Nicosia (1963) saw opinion leaders as “acting not only as channels of information but also as sources of social pressure toward a particular choice, and of social support to reinforce that choice once it has been made” (p. 24). Berelson and Steiner (1964) identify opinion leaders as “those trusted and informed people who exist in virtually all primary groups, who are the ‘models’ for opinion within their group, who listen to and read the media, and who then pass on information and influence to their circle of relatives, friends and acquaintances” (p. 550).

**Characteristics of opinion leaders.** Researchers have made some generalizations about the socioeconomic characteristics, personality, and communication behavior of these opinion leaders. The more frequently cited characteristics are: a relatively higher socioeconomic status, more social participation, greater exposure to mass media, more cosmopolite tendencies, and more innovative behavior than followers. They are also less averse to change in comparison to others (Rogers, 2003).

According to Summers (1970), opinion leader are identified by their demographic characteristics, social roles and attitudes, and expertise on a given topic. Demographically, opinion leaders have been known for their socioeconomic status in the social system. Income, education, and occupational status have been positively associated with opinion leadership (Summer, 1970). In farming communities, opinion leaders have been known to have relatively higher socioeconomic status, social participation, mass media use, and innovativeness (Rogers,

2003).

Social participation or gregariousness have also been found to be strongly related to opinion leadership. “Social communications, affiliations with organizations, and participation in social activities represent three dimensions of gregariousness, which promotes social interaction and which has been linked with opinion leadership in all topic contexts” (Summers, 1970, p. 180). Baumgartner (1975) general profiled opinion leaders as being “more cosmopolite, well-integrated into peer social groups, socially active, younger and more gregarious” (p. 12). Another important aspect is the links opinion leaders have with others from different social systems, such that their influence *within* a social system is dependent on their connections *outside* the social system to which they belong. “Opinion leaders are more precisely opinion brokers who carry information across the social boundaries between groups. They are not people on top of things so much as people at the edge of things; not leaders within groups so much as brokers between groups” (Burt, 1999, p. 37). It is more likely that the influence of opinion leaders is a function of how others perceive them to be knowledgeable about and their perceived level of involvement with the innovation in question. Knowledge about a topic, discussions about it, and the level of interest one demonstrates about a topic or innovation are highly related to opinion leadership (Myers and Robertson, 1972). In other words, *enduring* involvement with an innovation results in opinion leadership.

Chan and Misra (1990) argue that public individuation is a characteristic of opinion leaders. Public individuation “is a state in which people feel differentiated, to some degree, from other people and choose to act differently from them. People who are individuated show high confidence, high self-esteem, an ability to withstand powerful social inhibitors such as criticism and rejection, and have a strong need to be unique” (Maslach et al., 1985, p. 54).

In summary, greater involvement and more knowledge, more favorable attitude toward risk, greater media exposure and greater degree of public individuation are the main characteristics of opinion leaders. According to Schenk and Rossler (1997), the concept of opinion leadership can be defined across three categories—*who one is*, *what one knows*, and *who one knows*. Focusing on all three factors will give a clearer picture of why these people function as opinion leaders in the first place.

Indeed, opinion leaders have been thought to be different from the general public because of their social status or their greater interest in the topic that lead them to pay more attention to the mass media than the public. Katz and Lazarsfeld (1955) argue that opinion leadership is not confined to a specific group of people, “but is rather an integral part of the give-and-take of everyday personal relationship” (p. 33). In other words, all interpersonal relations are a kind of potential communication network; an opinion leader is a group member who plays a major communication function in that network. Opinion leaders are not necessarily those who have strong authority or leaders who are charismatic and attractive that others want to imitate. Burt (1999) explains:

Opinion leaders defined by function (people whose conversations make innovation contagious) and structural location (people communicating with, and weakly equivalent to, the individuals they influence) remove the vertical distinction implicit in the contrast between opinion leaders and followers (p. 47).

As King and Summers (1970) suggested, “in most contexts, the notion of an opinion leader dominating attitudes or behavior in his/her social network overstates the power of interpersonal communication” (p. 44). In fact, opinion leaders do not always surpass non-leaders in exposure to mass communication. What is evident, however, is that in whatever network they belong,

opinion leaders tend to have greater exposure to the mass media (Katz and Lazarsfeld, 1955).

According to Katz and Lazarsfeld (1955), opinion leaders are “the ‘key men’ of a work gang, the ‘sparkplugs’ of a salesman rally, the ‘elder statemen’ who sit on park banches who talk for the newspapers” (p. 137).

**The role of opinion leaders during election periods.** In his original work, Lazarsfeld (1944) noted that his respondents mentioned political discussions more often than exposure to the media as their most recent campaign communication experience: “On an average day, at least ten percent more people participated in disscussions about the election either actively or passively than listened to a major speech or read about campaign items in a newspaper” (p. 325). Moreover, 75% of people who had not expected to vote in the beginning but were finally “dragged in” considered personal influences as the motivation to vote. According to Lazarsfeld (1944), five factors make personal contacts so influential:

1. Personal contacts are more flexible. The clever campaign worker, professional or amateur, can tailor arguments to the needs of a person, able to shift tactics as he/she analyzes the reactions of others.
2. Face-to-face contacts make the consequences of yielding to or resisting an argument immediate and personal. The mass media can only intimate or describe future rewards or punishments; a living person can create them at once in the form of smiles or sneers.
3. More rely upon personal contacts to help them pick out arguments which are relevant for their own good in political affairs than rely upon the more remote and impersonal newspaper and radio. These individuals are used to relying upon the judgment and evaluation of respected people among their associates.
4. Personal contacts are more casual. If people read or tune in to a speech, they usually do

so purposefully and in doing so have a definite mental attitude which enhances receptiveness to messages. On the other hand, people who meet for reasons other than political discussions are more likely unprepared and thus cut through barriers more easily. 5. Finally, personal contacts can get a voter to the polls without relying to any extent upon the comprehension of the issues of the election, something the formal media can do less easily (p. 326).

Schmitt-Beck (2003) reported that if media messages conflict with those of the discussion network, they are likely to reject the message and not to take it into consideration at the ballots. Thus, opinion leaders play a crucial role during election periods because they mediate the effect of political information voters receive from the mass media.

### **The New Media in the Political Process**

The advent of new modes of communicating have ushered in a new era in political campaigns. According to Kaye and Johnson (2004), “individuals can passively allow television content to wash over them, [but] online technologies such as email, bulletin boards and chat rooms are interactive applications that require audience members to be active users” (p. 205). Because Internet users actively search for information, web use is said to be goal-oriented and that Internet users are aware of the needs they intend to satisfy (Lin and Jeffres, 1998).

The ideal citizens are known to be active seekers of political information from all sources, possess high levels of self-efficacy, and believe that they have the power to influence the political process (Kaye, Barbara K and Johnson, 2004). Internet users, according to many scholars (e.g., Bimber, 1998; Hill and Hughes, 1998; Johnson and Kaye, 2010) are more interested in politics, and are more willing to vote than the general public. When they search for political information on the Internet, they are likely goal directed rather than entertainment

oriented. Therefore, “guidance and information seeking needs may be linked to more purposeful uses of the web than just connecting for the sake of idle surfing” (Kaye and Johnson, 2002, p. 67). Studies (e.g., Garramone et al., 1986; Kaye and Johnson, 2002) have found that guidance and information seeking for surveillance, entertainment, and social utility are the primary gratifications for seeking political information online.

In the 2004 presidential election, audiences reportedly resorted to blogs to get news different from those they receive from the mainstream media, to check the accuracy of mass media reports, to interact with others with similar preferences, and to satisfy social interaction and self-expression, mainly through chat rooms (Kaye and Johnson, 2006). Since the development of social networking systems, people’s motivations for using the Internet for political purposes have shifted. According to Ancu and Cozma (2009), “both information seeking and entertainment goals are only secondary motives for visiting candidates’ profiles on the social media. The main incentive seems to be social interaction” (p. 577). Social networking services are accessed to interact with other supporters more often than with political candidates.

### **A New Information Flow for the Digital Age**

Since the mid-20th century, innovations have been steadily changing the norms of societies to which they have been introduced. As such, the nature of information flows and the definition of opinion leadership need to be re-examined in light of these new norms to determine how information actually gets transmitted, how opinion leaders function, and who or what possesses the characteristics and abilities of an opinion leader.

In the United States, the 2000 presidential campaign was considered a turning point for communication technologies with the ascendant role of the Internet in the political world. More and more voters now have access to the Internet and have used it to gather political information

about candidates and issues (Kaid, 2002). In other words, the Internet has attained political significance, becoming the channel used by a growing number of citizens to know more about government policies, discuss political issues with others, contact public officials, and acquire information that promote more active participation in politics (Bimber, 1998).

Jacques and Ratzan (1997) say that the traditional media essentially limit audience behavior choice and can no longer stimulate information usage. In contrast, the websites of presidential candidates have been found to have rich, meaningful and in-depth information about political platforms and issues (McKeown and Plowman, 1999). They are made available to and are accessed by Internet users according to their own desire. Furthermore, the Internet is a more interactive platform, enabling voters to contact candidates, directly seek information related to issues, or discuss with others.

Indeed, the Internet may have changed the nature of information seeking. It is now often the first-choice for finding out about a host of topics, and a conduit for discussing those topics with others. To some degree, according to Case et al. (2003), the Internet substitutes for the older media. As a result, the Internet may have changed the nature of opinion leadership and may have already effected permutations to the two-step flow hypothesis.

In the field of advertising, the Internet has made it possible for people to bypass experts in acquiring information about services and products. Shapiro and Shapiro (1999) call this phenomenon “disintermediation,” the idea that the general public no longer relies on face-to-face meetings with professionals to be persuaded about something in the context of expanded access to information (Case et al., 2003).

Cavanaugh (2000) sees the Internet as a political WalMart, providing a one-stop shopping source for political information—video clips, candidate speeches and issue positions, up-to-date

results, and ballot information. The Internet allows audiences to decide the degree and content of their exposure to political information. “Its potential for interactivity between audiences and sources, and its wealth of information are all thought to facilitate widespread political change” (Wang, 2007, p. 2). Not only can people access political information through the Internet, they can also express their opinions.

As a result, “the Internet, in its accessibility, anonymity, and potential interpersonal authoritativeness, may now act as a substitute for the classic two-step paradigm, supplanting the social and physical proximity dynamics of interpersonal networks” (Case et al., 2003, p. 15). As early as 1997, Bonchek predicted that the Internet’s unique transmission capability can alter the flow of information throughout society and consequently affect the political behavior of the general public. By the 2004 presidential election, “the Internet had emerged not merely as a supplemental source of information but as the primary source of information for many Americans” (Johnson and Kaye, 2010, p. 4).

The Internet also has been called “the great equalizer” because it can “equalize the balance of power between citizens and power barons” (Bimber, 1998, p. 138). Bimber (1998) opined:

The idea is that the Internet will serve a mass audience, and will politicize them in the process; the Internet will increase citizen influence on politics and decrease the influence of traditional political intermediaries who now dominate political communication. The greater the capacity of citizens to communicate directly with government, the more likely they are to be engaged in politics, and the more engaged they are, the greater their direct influence as individuals (p. 138).

At the very least, the Internet has reduced the influence of the traditional media over the formation of the public agenda. According to Bimber (1998), people may be influenced not only



by news outlet decisions or other interpersonal communication, but also by the more unpredictable flow of information through the Internet. These findings suggest that new ways of communicating with others largely brought about by new communication technologies, other technological innovations, and the changing climate of many social systems are challenging the very definition of an opinion leader and the direction of information flows.

### **Research Questions**

Considering the foregoing literature review, this study poses the following research questions:

1. What sources did voters use at the awareness, attitude formation, and decision-making stages? How much attention did they pay to these sources at the stage of awareness of the campaign?
2. What sources did voters consider expert and trustworthy in informing them about issues that help shape their voting decisions in the 2012 presidential election?
3. Given the sources used at the awareness, attitude formation and decision-making stages, what model of political information flow can be identified?
4. Who or what do voters consider to be opinion leaders when it comes to issues related to elections?
5. What information sources did opinion leaders use to obtain knowledge about the presidential election?

### CHAPTER 3. METHOD

To gather data for this study, an online survey of students at Iowa State University (ISU) was conducted. For a study that requires responses from a sizeable sample, a survey was deemed the most appropriate and flexible way by which respondents can provide answers to a self-administered questionnaire.

#### The Sample

The sampling frame for this study was obtained from the Office of the Registrar. To overcome the limitations of a web-based survey and assure an accurate representation of the student population, a random sample of students was drawn. According to Correa et al. (2010), matching the sample with census data provide a more accurate representation of the population. Given the demographic characteristics of ISU students, a representative sample should be composed of 55.6% men and 44.4% women. The academic classification of students should be distributed as follows: 24% freshmen, 21% sophomore, 22% junior, 29% senior, 2% special students, and 2% graduate students. Only those who were qualified to vote in the 2012 U.S. presidential election (e.g., American citizens 18 years and older) were included in the sample.

The selected students received an alert email informing them of the objectives of the study and asking for their participation in the survey. One week later, another email was sent inviting them to access the online questionnaire. The invitation email introduced the study and informed them how long it will take to complete the questionnaire. To increase the response rate, those who returned a completed questionnaire were included in a drawing for a cash prize.

The questionnaire was pretested on a convenience sample of 50 students to (1) determine the reliability of the scales developed for the study, (2) ascertain whether the questions and the instructions were clearly understood, (3) solicit suggestions for questionnaire organization and

other improvements, and (4) estimate how long it takes to complete the questionnaire.

### **Variables and Their Measure**

**RQ1 asks: What sources did voters use at the awareness, attitude formation, and decision-making stages? How much attention did they pay to these sources at the stage of awareness of the campaign?**

**Sources used at the information seeking stage.** Scholars (e.g., Ellis et al., 1993; Ellis and Haugan, 1991) have postulated a general model of information seeking behavior that includes six categories of information seeking activities: starting, chaining, browsing, differentiating, monitoring, and extracting. This study focuses on the first activity, starting, because this entails actions that form the initial search for information—identifying the sources of interest that could serve as starting points of the search. According to Choo et al. (1998), these are likely to be familiar sources that have been utilized before and less familiar sources that are expected to provide related information.

The perceived accessibility of the source and the perceived quality of the information from that source are two main considerations in selecting sources at the “starting” stage. For most information users, perceived accessibility refers to the amount of time and effort needed to contact or access a source, and is therefore a strong predictor of source use. However, less accessible sources known to deliver or possess high quality information maybe selected when information reliability is important or when ambiguity is high (Choo et al., 1998).

Therefore, the variable was measured by asking respondents to scale their source use for presidential election information. Such information can be obtained from three sources: traditional media (television, newspapers, radio, magazines, online news sources), social media and related websites, and interpersonal communication (friends, family members and

acquaintances). Respondents were asked, using five-point Likert scales, the following questions that assess the importance, the frequency with which they use, the perceived accessibility, and the quality of information they receive from each source: (1) How beneficial did you find these sources in providing you with related information about the presidential election? (2) How accessible did you find these information sources? (3) How would you rate the quality of information you received from these sources? (4) How valuable or important did you find these sources in providing you with information about the presidential election? (5) To what degree did you depend on these sources for presidential election information? (6) How frequently did you obtain information from these sources? (7) How much attention did you pay to these sources? (8) To what extent did you think these sources influenced your knowledge about presidential candidates?

**Sources used for attitude formation and attitude change.** Attitudes are an individual's conception of his/her relation to objects, places, persons or events. Structural factors influence attitude formation and change, including "the kinds of information significant others communicate to the ego, and that information, along with what the ego can observe, provide the basic corpus" out of which people set their attitudes (Worlfel and Haller, 1971, p. 77). The factors that may influence the process of attitude formation can be divided into three categories: (1) significant others, (2) prior information and knowledge, and (3) a person's own activities. The influence of these three factors on attitudes toward the political candidates, therefore, was determined. The respondents' ratings of the same set of information sources identified at the information seeking stage were solicited to determine the sources that helped shape and/or change voters' attitudes toward the presidential candidates. Respondents were asked five Likert scale items: (1) How beneficial did you find these information sources in forming or changing

your attitudes toward the presidential candidates? (2) To what degree did you think these sources changed your attitudes toward the presidential candidates? (3) To what extent did you think these sources influenced your attitudes toward the presidential candidates? (4) How valuable or important did you find these information sources in shaping or changing your attitudes toward the presidential candidates? (5) To what degree did you depend on these sources to form your attitude about the presidential candidates?

**Sources used for decision-making.** According to O'Reilly (1982), "the direct relationship between the quality of information used by a decision maker and decision-making performances has been well established. "In a general sense, there is some support for the intuitively reasonable notion that 'good' information leads to 'good' decision-making" (p. 756). The respondents' ratings of the same set of information sources identified at the information seeking and attitude formation stages were solicited to determine the sources that helped them pick their choice for the president's office. Respondents were asked five Likert scale items: (1) How beneficial did you find these information sources in helping you determine who to vote for in the presidential election? (2) How useful were these information sources in helping you make up your mind? (3) To what degree did these sources change your original voting preference? (4) How valuable or important did you find these information sources in helping you make your choice? (5) To what extent did you depend on these sources for your voting decision?

The responses to these items ranged from 1 to 5 where 1 means the least effect and 5 means the most effect. For each source, the answers were summed and averaged to serve as the measure of source use for voting decisions. Higher scores suggest more helpful sources for voting decision-making.

This research question was answered using descriptive statistics.

**RQ2 asks: What sources do voters consider expert and trustworthy in informing them about issues that help shape their voting decisions?**

**Source credibility.** According to Self (1996), credible sources are those that are “trustworthy” and have “expertise.” To measure credibility, respondents were asked: (1) To what extent did you find the following sources of political information trustworthy? (2) To what extent did you find the following sources of political information expert in the sense that they know what they were talking about when it comes to politics? The response options to these two items ranged from 1 to 5 where 1 means “not trustworthy/expert at all” and 5 means “highly trustworthy/very high expertise.” For each source, the answers to the two questions were averaged as a measure of the source’s perceived credibility. Higher scores mean higher credibility ascribed to the source. Descriptive statistics were used to answer this research question.

**RQ3 asks: Given the sources used at the awareness, attitude formation and decision-making stages, what model of political information flow can be identified?**

Given the growing use of the online media by voters and political campaigners alike, based on the answers to RQ1, respondents were asked what information channels they used at the three stages of the campaign and election period. A series of Pearson correlation tests was conducted determine the relationship between source use at each of the three stages.

To determine the extent to which the respondents used the Internet for political purposes, respondents were asked: (1) To what extent did you look at the presidential candidates’ official campaign websites, social networking sites, blogs, and other online sources to learn more about the candidates and their platforms based on what you heard from the news media? (2) Did the information you learn from these online sources influence your attitude about the candidates? (3)

At what part of the campaign did you search for more information about the candidates from online sources? (4) Did you actively participate in interactive online discussion about the presidential election in forums such as blogs, Twitter, Facebook, and other social networking sites?

Next, the influence of opinion leaders was measured by asking the following questions:

(1) To what extent did you listen to the advice of the opinion leaders you have identified regarding who to vote for in the presidential election? (2) Who or what generally exerted the strongest influence on your voting behavior—opinion leaders, related websites, or none of the two? Respondents were asked to choose only one answer to each of these questions.

**RQ4 asks: Who or what did voters consider to be opinion leaders when it comes to issues related to the presidential election?**

**Opinion leaders.** Opinion leaders have played a crucial role in the flow of political information. Failing to find a direct influence of the media on voters' decisions, Lazarsfeld and his colleagues (1948) argued that the flow of information from the mass media to individuals is mediated by "self-designated opinion leaders who enjoy the social power that holding and transmitting information gives them" (Roach, 2005, p. 111). In *The People's Choice*, respondents identified themselves as opinion leaders by answering the following questions: (1) Have you tried to persuade people to follow your political ideas recently? (2) Has anyone asked your opinion about a political question? However, this method of self-identification was considered as a weakness of the study in recognition of individuals' tendency to evaluate themselves more positively than others. Therefore, in the present study, opinion leaders were identified by asking respondents to name three people, organizations or entities they (1) listened to when they have questions about the presidential election; (2) thought were helpful in figuring

out issues related to the presidential election; (3) considered influential in shaping their attitudes toward the presidential candidates; (4) considered influential in helping them make up their minds about who to vote for; and (5) considered to be opinion leaders when it comes to issues related to the elections. Respondents were asked to state why they selected each of the sources identified through the five questions listed above. Descriptive statistics were used to answer this research question.

**RQ5 asks: What information sources did opinion leaders use to obtain knowledge about the presidential election?**

Those who respondents considered as opinion leaders in RQ4 were surveyed using the items in the first section of the questionnaire administered to the original sample of voters.



## CHAPTER 4. RESULTS AND DISCUSSION

### The Sample

To gather data for this study, an online survey was conducted. An alert email was sent to 6,000 students at Iowa State University who were qualified to vote in the 2012 U.S. presidential election. Thus, the sample was made up of citizens of the United States who were at least 18 years old in 2012. Another email with a link to the study questionnaire was sent a week later. Follow-up or reminder emails were sent each week to those who have not returned their questionnaire. The data-gathering period lasted seven weeks, from November 7 to December 17, 2012.

After deleting the questionnaires with incomplete responses, 233 valid ones were used for further analysis. This translates to a response rate of 6.8%. Respondents who fell under the 18-20 age group comprised the majority of the sample (52.8%). Most were freshmen (26.2%), followed by seniors (22.3%), juniors (18.9%), graduate students (17.6%), and sophomores (15%), in that order. There were more female (67.4%) than male respondents (37.3%). The sample's demographic characteristics are summarized in Table 1.

**Table 1 The sample's demographic characteristics**

<b>Age</b>	<b>Frequency</b>	<b>Percent</b>
18-20	123	52.8
21-23	69	29.6
24-26	23	9.9
27-29	2	0.9
30-32	4	1.7
33-35	2	0.9
Above 36	10	4.3
<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>
Female	157	67.4
Male	76	32.6
<b>Year in school</b>	<b>Frequency</b>	<b>Percent</b>
Freshmen	61	26.2
Sophomore	35	15.0
Junior	44	18.9
Senior	52	22.3
Graduate student	41	17.6
Total	233	100.0

### **The Use of the Internet During the Presidential Campaign**

Of the 233 respondents, 39.1% said they browsed political and related websites occasionally to learn more about the candidates and their platforms, 22.3% reportedly looked at those websites almost always, 18% used the websites rarely, 10.7% did not bother browsing those sites during the election period at all, while 9.9% claimed they obtained information from these types of websites all the time (Table 2).

**Table 2 The frequency with which voters looked at political and related websites during the election period**

	Frequency	Percent
Never	25	10.7
Rarely	42	18.0
Occasionally	91	39.1
Almost always	52	22.3
All the time	23	9.9
Total	233	100.0

Did the websites influence the respondents' attitude toward the candidates? Close to 40% stated that political websites influenced their attitude toward the candidates somewhat, 22.7% reported they were influenced considerably by these sites, 21% thought the websites had very little influence on their attitude, and 11.2% said their attitudes were not at all influenced by these information sources. Only 5.2% thought that political websites had a great deal of impact on their attitude toward the candidates and what they stood for (Table 3).

**Table 3 The influence of political websites on voters' attitude toward the candidates**

	Frequency	Percent
Not influenced at all	26	11.2
Influenced very little	49	21.0
Influenced somewhat	93	39.9
Influenced considerably	53	22.7
Influenced a great deal	12	5.2
Total	233	100.0

When did they consult online sources for information about the candidates? More than a third of the respondents (35.2%) said they searched for more information from the Internet toward the end of the campaign, 24.9% started looking for more information about the middle of

the campaign, and 20.6% surfed the Internet at all stages of the campaign. At the beginning of the campaign, 13.7% used the Internet to obtain more information. Only 5.6% did not use the Internet at any stage of the campaign (Table 4).

**Table 4 Stage of the campaign when respondents searched for more information online**

	Frequency	Percent
Did not search at all	13	5.6
At the beginning of campaign	32	13.7
In the middle of the campaign	58	24.9
Toward the end of the campaign	82	35.2
At all stages of the campaign	48	20.6
Total	233	100.0

Although most respondents used the Internet in search for more information about political candidates, 46.4% did not participate in online discussions. About 21% participated rarely, 22.3% did so occasionally, and 7.3% discussed election-related topics with others on the Internet regularly. Only 3% exchanged opinions with others through the Internet all the time (Table 5).

**Table 5 The degree to which the respondents participated in online discussions about the candidates and election-related matters**

	Frequency	Percent
Did not participate at all	108	46.4
Participated rarely	49	21.0
Participated occasionally	52	22.3
Participated regularly	17	7.3
Participated all the time	7	3.0
Total	233	100.0

According to the two-step flow hypothesis, opinion leaders play a crucial role in political

issues, especially election-related ones, by acting as information sources for others, helping voters form their attitude toward issues and candidates, and by influencing others' voting decisions. This study asks whether having greater access to information technology, specifically online information sources, had dampened the influence of these opinion leaders on people's voting attitudes and behavior. To what degree do opinion leaders still influence the voting decisions of others who look up to them for opinions and advice? Close to half (45.5%) of the respondents said they enlisted the counsel of opinion leaders occasionally during the 2012 presidential election; 28.8% said they did so regularly. The results show that even in the digital age, opinion leaders still play a vital role in helping voters make up their minds (Table 6). Indeed, 37.3% of the respondents reported that opinion leaders influenced their voting decision more than the social media (e.g., candidates' blogs, Twitter and Facebook pages). More than half (54.5%) of the respondents, however, thought that neither opinion leaders nor the social media had a bearing on their voting decisions during the last presidential election (Table 7).

**Table 6 The frequency with which the advice of opinion leaders were solicited to inform voting decisions**

	Frequency	Percent
Did not listen at all	24	10.3
Listened rarely	26	11.2
Listened occasionally	106	45.5
Listened regularly	67	28.8
Listened all the time	10	4.3
Total	233	100.0

**Table 7 Information sources with the greatest influence on voting decisions**

	Frequency of respondents mentioning the source	Percent
Opinion leaders	87	37.3
Social media (e.g., candidates' blogs, Twitter and websites)	19	8.2
None of the above	127	54.5
Total	233	100.0

### Reliability of Indices

The diffusion of innovation literature suggests that people use different information sources at different stages of the diffusion process (Rogers, 1962). By extension, therefore, it can be assumed that voters make use of different sources of information—and to varying degrees—during various stages of the campaign. Following the diffusion stages, one can therefore consider voters as undergoing several stages of information need during the campaign and election period. These are (1) awareness, (2) attitude formation, and (3) decision-making.

Several indices were developed to determine the information sources voters relied upon at each of these three stages. To ascertain whether the items comprising each of these indices were internally consistent, each index's Cronbach's alpha was computed (Table 8). The results show high internal consistency of items for all computed indices, ranging from 0.864 to 0.924.

**Table 8 The reliability of indices used**

<b>Indices</b>	<b>Number of items</b>	<b>Cronbach's alpha</b>
<b>Awareness:</b> Sources used for information about the presidential candidates and election-related matters		
Traditional media	8	0.884
Social media/Related websites	8	0.873
Interpersonal communication	8	0.864
<b>Attitude formation:</b> Sources used for attitude formation and/or attitude change toward presidential candidates and other election-related issues		
Traditional media	5	0.877
Social media/Related websites	5	0.902
Interpersonal communication	5	0.908
<b>Decision-making:</b> Sources used for decision-making		
Traditional media	4	0.881
Social media/Related websites	4	0.924
Interpersonal communication	4	0.896

### **Exposure and Attention to Information Sources**

RQ1 asks: **What sources did voters use at the awareness, attitude formation, and decision-making stages? How much attention did they pay to these sources at the stage of awareness of the campaign?**

The first research question asked respondents to characterize the three general groupings of sources—traditional media (television, newspapers, radio, magazines, online news sources), social media and related websites, and interpersonal communication (friends, family members and acquaintances)—in terms of the following: (1) How beneficial did they find these information sources in providing information about the presidential election? (2) How accessible were these sources? (3) How would they rate the quality of information from these sources? (4) How valuable or important were these sources in informing them about the candidates? (5) To

what extent did they depend on these sources? (6) How frequently did they obtain information from these sources? (7) To what extent did they learn about the presidential candidates from these sources? These were ascertained for each stage of the campaign period.

The results, shown on Table 9, indicate that at the awareness stage, voters still regarded the traditional media as their main sources of information about the presidential election, followed closely by interpersonal communication sources. The social media/related websites were the least mentioned sources. A one-way repeated measures ANOVA was conducted to compare source use at the awareness stage. A significant difference was found ( $F(2, 696)=88.658$ ,  $p=0.00$ ) among these groups.

The ranking of information sources used at the attitude formation (Table 9) and the decision-making (Table 9) stages were the same. The results of ANOVA tests to determine differences in sources used at these two stages are also shown in Table 9.

**Table 9 The sources of information used at the stage of awareness, attitude formation and decision-making**

	<b>N</b>	<b>Mean</b>	<b>S.D.</b>		
<b>Awareness</b>					
Traditional media	233	3.68	.797		
Social media/Related websites	233	2.70	.857		
Interpersonal communication	233	3.34	.768		
	<b>Between df</b>	<b>Within df</b>	<b>F</b>	<b>Sig.</b>	
Comparison among three sources at the stage of awareness	2	696	88.658	.000	



**Table 9 The sources of information used at the stage of awareness, attitude formation and decision-making (continued)**

	N	Mean	S.D.
<b>Attitude</b>			
Traditional media	233	3.26	.907
Social media/Related websites	233	2.24	.995
Interpersonal communication	233	3.12	.976
	<b>Between df</b>	<b>Within df</b>	<b>F</b>
Comparison among three sources at the stage of attitude	2	696	76.949
	<b>Sig.</b>		
	.000		
	N	Mean	S.D.
<b>Decision-making</b>			
Traditional media	233	3.14	.989
Social media/Related websites	233	2.04	.991
Interpersonal communication	233	3.03	1.03
	<b>Between df</b>	<b>Within df</b>	<b>F</b>
Comparison among three sources at the stage of decision-making	2	696	78.215
	<b>Sig.</b>		
	.000		

The results of a post- hoc Tukey test (Table 10) indicates that at the stage of awareness, there is a significant difference between the use of traditional media and social media, between the use of social media and interpersonal communication, and between the use of traditional media and interpersonal communication. These suggest that the traditional media were used more than the social media and interpersonal sources when they are at the point of initially gathering about the presidential candidates.

At the stage of attitude formation, the use of traditional media and interpersonal sources were significantly different from the use of social media, which means that voters made more use of the traditional media and interpersonal communication at the point when they were shaping their attitudes about candidates. Information sources used at the stage of decision-making were

the same as those employed at the awareness stage.

**Table 10 Post hoc Tukey test on the use of the three information sources at the awareness, attitude formation and decision-making stages**

Tukey HSD

Dependent Variable	(I) Sources	(J) Sources	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Awareness	Mass media	Social media	.98230*	.07489	.000	.8064	1.1582
		Interpersonal Communication	.34227*	.07489	.000	.1664	.5182
	Social media	Mass media	-.98230*	.07489	.000	-1.1582	-.8064
		Interpersonal Communication	-.64002*	.07489	.000	-.8159	-.4641
Attitude	Mass media	Social media	1.02060*	.08896	.000	.8117	1.2295
		Interpersonal Communication	.14678	.08896	.225	-.0622	.3557
	Social media	Mass media	-1.02060*	.08896	.000	-1.2295	-.8117
		Interpersonal Communication	-.87382*	.08896	.000	-1.0828	-.6649
Behavior	Mass media	Social media	1.09549*	.09296	.000	.8771	1.3138
		Interpersonal Communication	.21030	.09296	.062	-.0080	.4286
	Social media	Mass media	-1.09549*	.09296	.000	-1.3138	-.8771
		Interpersonal Communication	-.88519*	.09296	.000	-1.1035	-.6668

\*. The mean difference is significant at the 0.05 level.

At the awareness stage, the respondents reportedly paid more attention to the traditional media and interpersonal sources than to the social media and/or related websites (Table11). A one-way repeated measures ANOVA was conducted to compare the amount of attention voters paid to the three sources. A significant difference was found ( $F(2, 696)=54.597, p=0.00$ ) among the three groups of sources.

**Table 11 Attention paid to sources at the stage of awareness**

	N	Mean	S.D.
<b>Attention</b>			
Traditional media	233	3.41	1.11
Social media/ Related websites	233	2.43	1.21
Interpersonal communication	233	3.36	1.09
	<b>Between df</b>	<b>Within df</b>	<b>F</b>
Comparison attention voters paid to three sources at the stage of awareness	2	696	54.597
			<b>Sig.</b>
			.000

For all items comprising each index, the response options ranged from 1 “did not pay attention at all” to 5 “paid as close attention as I can.”

A series of one-way repeated measures ANOVA was conducted to determine whether the sources used *across* the three stages were significantly different (Table 12). The results show that across three stages, the use of each of these three categories of sources was substantially different.

**Table 12 Comparison of sources used across the three stages**

	Between df	Within df	F	Sig.
Comparison traditional media used across three stages	2	696	23.677	.000
	<b>Between df</b>	<b>Within df</b>	<b>F</b>	<b>Sig.</b>
Comparison social media/ related websites used across three stages	2	696	29.714	.000
	<b>Between df</b>	<b>Within df</b>	<b>F</b>	<b>Sig.</b>
Comparison interpersonal communication used across three stages	2	696	11.664	.000

Post hoc Tukey test (Table 13) results indicate that traditional media use was significantly different between the stages of awareness and attitude formation, and between the stages of awareness and decision-making. The social media were used as frequently as the traditional media. However, the used of interpersonal communication was significantly different between the stages of awareness and attitude formation, and between the stages of attitude formation and

decision-making.

**Table 13 Post hoc Tukey test on the use of the three information sources across the stages of awareness, attitude formation and decision-making**

Tukey HSD

Dependent Variable	(I) Stages	(J) Stages	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Traditional media	Awareness	Attitude	.42275*	.08349	.000	.2267	.6188
		Behavior	.54828*	.08349	.000	.3522	.7444
	Attitude	Awareness	-.42275*	.08349	.000	-.6188	-.2267
		Behavior	.12554	.08349	.290	-.0706	.3216
Social media	Awareness	Attitude	.46105*	.08800	.000	.2544	.6677
		Behavior	.66148*	.08800	.000	.4548	.8682
	Attitude	Awareness	-.46105*	.08800	.000	-.6677	-.2544
		Behavior	.20043	.08800	.060	-.0063	.4071
Interpersonal communication	Awareness	Attitude	.22725*	.08631	.023	.0245	.4300
		Behavior	.41631*	.08631	.000	.2136	.6190
	Attitude	Awareness	-.22725*	.08631	.023	-.4300	-.0245
		Behavior	.18906	.08631	.074	-.0137	.3918

\*. The mean difference is significant at the 0.05 level.

### Expertise and Trustworthiness

RQ2 asks: What sources did voters consider expert and trustworthy in informing them about issues that helped shape their voting decisions?

To answer this research question, respondents were asked to write down three sources they considered expert (in the sense that they knew what they were talking about) and trustworthy (in the sense that they can be relied upon to provide accurate information) about the presidential election. The open-ended answers were classified and coded into three categories: traditional media (television, newspapers, radio, magazines, online news), social media and related websites, and interpersonal communication (friends, family members and acquaintances).

The results listed on Table 14 show that 72.1% of the respondents saw traditional media channels as expert information sources, followed by interpersonal communication sources (18.5%) and social media/related websites (9.4%). The same trend was evident in the respondents' evaluations of trustworthiness. As shown in Table 14, about 70.4% considered the

traditional media trustworthy sources about presidential election issues, followed by interpersonal communication sources (17.6%) and social media/related websites (12%).

Most of the respondents considered mainstream news organizations (e.g., CBS News, the *New York Times*, CNN and the *Des Moines Register*) expert and trustworthy sources about issues pertaining to the presidential election. Among the social media, the candidates' official websites were considered expert. Family members and friends were the most credible interpersonal sources of political information, followed by professors and legislators. When it comes to expertise and trustworthiness, the traditional media, therefore, still led the pack.

**Table 14 Sources considered as expert and trustworthy about the presidential election and related issues**

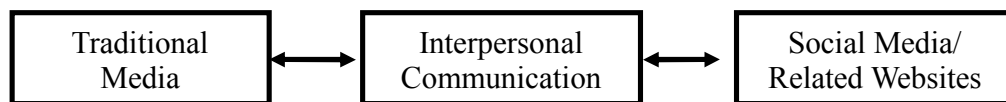
Expert	Frequency of those naming source as expert	Percent
Traditional media	168	72.1
Social media/Related websites	22	9.4
Interpersonal communication	43	18.5
Total	233	100.0
Trustworthy	Frequency of those naming source as trustworthy	Percent
Traditional media	164	70.4
Social media/Related websites	28	12
Interpersonal communication	41	17.6
Total	233	100.0

### Flow of Political Information

RQ3 asks: Given the sources used at the awareness, attitude formation and decision-making stages, what model of political information flow can be identified?

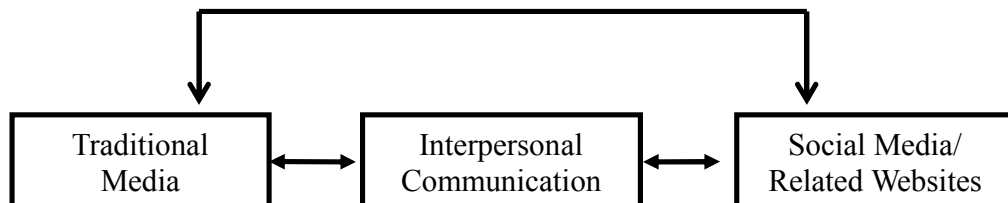
To answer this question, a correlation matrix was developed to show the relationship between source use reports at each of the three stages (Table 15). The results show that at the

awareness stage, the use of traditional media correlated weakly but significantly with the use of interpersonal communication sources ( $r=.140$ ,  $p=.033$ ). Social media use also had a weak but significant correlation with the use of interpersonal sources ( $r=.169$ ,  $p=.010$ ). However, the use of traditional media did not correlate with the use of social media and related websites ( $r=.032$ ,  $p=.624$ ). This suggests that those who used the traditional or social media also communicated with others interpersonally to obtain more information about the presidential election, but voters who used the traditional media did not search for information on the social media, and vice versa. These relationships at the awareness stage and the information flow they suggest are shown in Figure 3.



**Figure 3 Information flow as suggested by the use of information sources at the awareness stage**

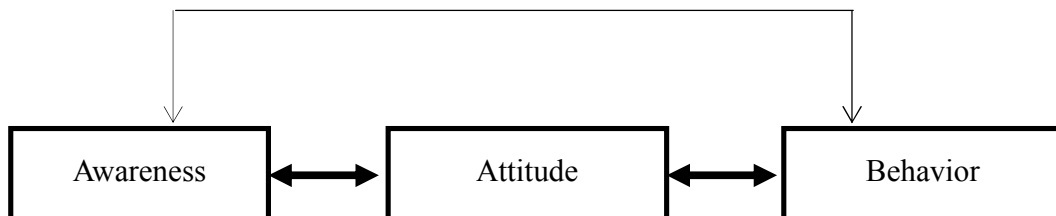
At the attitude formation stage, the use of all three sources correlated significantly with each other, which indicates that respondents who used one of the three sources also searched for information from the other two sources (traditional media and social media:  $r=.183$ ,  $p<0.005$ ; traditional media and interpersonal communication:  $r=.422$ ,  $p=0.000$ , social media and interpersonal communication:  $r=.345$ ,  $p=0.000$ ). These relationships at the attitude formation stage and the information flow they imply are shown in Figure 4.



**Figure 4 Information flow as suggested by the use of information sources at the attitude formation stage**

At the decision-making stage, the use of traditional media correlated significantly with the use of interpersonal communication sources ( $r=.315$ ,  $p<0.000$ ). So did the use of social media with interpersonal communication source use ( $r=.332$ ,  $p<0.000$ ). However, the use of traditional media did not correlate with the use of social media and related websites ( $r=.110$ ,  $p<.094$ ). This finding indicates that respondents who used the traditional or social media also tended to communicate with others on an interpersonal level to make up their minds about who to vote for. Those who gathered more information from the traditional media to make their voting choice did not bother looking for information on the social media, and vice versa. These relationships at the decision stage and the information flow they suggest are the same as those shown in Figure 1.

It should be noted that although there were significant correlations across the three stages, the sources used between awareness and attitude formation and those used between the attitude formation and decision-making stages correlated more strongly than source use at the awareness and behavior stages (Figure 5).



**Figure 5 Strength of correlations across the three stages**



Table 15 Correlation matrix

	Awareness Traditional Media	Awareness Social Media	Awareness Interpersonal Communication	Attitude Traditional Media	Attitude Social Media	Attitude Interpersonal Communication	Behavior Traditional Media	Behavior Social Media	Behavior Interpersonal Communication
<b>Awareness Traditional Media</b>	Pearson Correlation Sign. 1								
<b>Awareness Social Media</b>	Pearson Correlation Sign. .032	Pearson Correlation Sign. 1							
<b>Awareness Interpersonal Communication</b>	Pearson Correlation Sign. .624	Pearson Correlation Sign. .140*	Pearson Correlation Sign. 1						
<b>Attitude Traditional Media</b>	Pearson Correlation Sign. .033	Pearson Correlation Sign. .711**	Pearson Correlation Sign. .066	Pearson Correlation Sign. 1					
<b>Attitude Social Media</b>	Pearson Correlation Sign. .000	Pearson Correlation Sign. -.041	Pearson Correlation Sign. .729**	Pearson Correlation Sign. .150*	Pearson Correlation Sign. 1				
<b>Attitude Interpersonal Communication</b>	Pearson Correlation Sign. .536	Pearson Correlation Sign. .181**	Pearson Correlation Sign. .665**	Pearson Correlation Sign. .422**	Pearson Correlation Sign. .345**	Pearson Correlation Sign. 1			
<b>Behavior Traditional Media</b>	Pearson Correlation Sign. .636**	Pearson Correlation Sign. -.016	Pearson Correlation Sign. .121	Pearson Correlation Sign. .814**	Pearson Correlation Sign. .090	Pearson Correlation Sign. .310**	Pearson Correlation Sign. 1		
<b>Behavior Social Media</b>	Pearson Correlation Sign. .000	Pearson Correlation Sign. .808	Pearson Correlation Sign. .066	Pearson Correlation Sign. .000	Pearson Correlation Sign. .169	Pearson Correlation Sign. .000	Pearson Correlation Sign. .274**	Pearson Correlation Sign. 1	
<b>Behavior Interpersonal Communication</b>	Pearson Correlation Sign. .049	Pearson Correlation Sign. .197	Pearson Correlation Sign. .065	Pearson Correlation Sign. .283**	Pearson Correlation Sign. .306**	Pearson Correlation Sign. .854**	Pearson Correlation Sign. .315**	Pearson Correlation Sign. .332**	Pearson Correlation Sign. 1

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).



## Opinion Leaders

RQ4 asks: Who or what do voters consider to be opinion leaders when it comes to issues related to elections?

To answer this research question, respondents were asked to write down the names and designation of three individuals, organizations or groups they consider to be opinion leaders when it comes to presidential elections. The answers were classified into the same three categories: traditional media, social media and related websites, and interpersonal sources.

As shown in Table 16, about half of the respondents (50.6%) reported interpersonal sources as their main opinion leaders. These were followed by the traditional media (33.5%) and the social media (16.3%). Among the interpersonal sources, family and friends were cited as the most influential opinion leaders; university professors and state legislators came in second. Journalists reporting for the *Des Moines Register*, the *Ames Tribune* and KCCI News (a CBS affiliate) also were cited as opinion leaders when it comes to presidential campaign and election matters.

**Table 16 Who or what voters considered to be opinion leaders**

	Frequency of respondents mentioning the source	Percent
Traditional media	78	33.5
Social media/Related websites	38	16.3
Interpersonal communication	117	50.2
Total	233	100.0

## Opinion Leaders' Information Sources

RQ5 asks: What information sources did opinion leaders use to obtain knowledge about the presidential election?

To answer this research question, the identified opinion leaders were surveyed. An email asking for their participation with a link to the survey questionnaire was sent to a total of 188 opinion leaders. The response rate was 37.2%. After deleting the incomplete questionnaires, 58 valid ones were used for further analysis. Of the 58 respondents, those aged 60 and above comprised the majority (46.6%), most of whom were professors (62.1%). Another 20.7% were journalists, and 17.2% were legislators. The demographic characteristics of the sample of opinion leaders are listed on Table 17.

**Table 17 Demographic characteristics of identified opinion leaders**

Age	Frequency	Percent
21-30	4	6.9
31-40	6	10.3
41-50	5	8.6
51-60	16	27.6
Above 36	27	46.6
Occupation	Frequency	Percent
Professor	36	62.1
Journalist	12	20.7
Legislator	10	17.2
Total	58	100.0

Asked what sources they used to be informed about the presidential election and its attendant issues, the opinion leaders said they resorted to the traditional media ( $m=4.28$ ,  $sd=0.598$ ), interpersonal communication sources ( $m=3.32$ ,  $sd=0.722$ ), and the social media ( $m=2.40$ ,  $sd=1.046$ ), in that order. This pattern of primary source use is the same as that observed for the sample of voters.

**Table 18 Sources used by opinion leaders to search for more information about the presidential election**

Indices	N	Mean	S.D.
Traditional media	58	4.28	.598
Social media/Related websites	58	2.40	1.046
Interpersonal communication	58	3.32	.722

Of the 58 opinion leaders, 37.9% said they browsed the social media and political websites occasionally to learn more about the candidates and their platforms, 29.3% said they rarely used these websites, 15.5% said they never looked at them at all, and 10.3% referred to these websites almost always. Only 6.9% used the websites all the time (Table 19).

**Table 19 The frequency with which opinion leaders looked at political and related websites**

	Frequency	Percent
Never	9	15.5
Rarely	17	29.3
Occasionally	22	37.9
Almost always	6	10.3
All the time	4	6.9
Total	58	100.0

Did the websites influence opinion leaders' attitudes? Close to 38% of the sample of opinion leaders stated that the social media and political websites influenced their attitude toward the candidates somewhat, 15.5% thought their attitudes were influenced considerably by these online sources, 20.7% said they were influenced very little, 22.4% said that their attitude were not influenced at all. Only 3.4% thought that these websites influenced their attitude toward the candidates a great deal (Table 20).

**Table 20 The influence of political and related websites on opinion leaders' attitude toward the candidates and their platforms**

	Frequency	Percent
Not influenced at all	13	22.4
Influenced very little	12	20.7
Influenced somewhat	22	37.9
Influenced considerably	9	15.5
Influenced a great deal	2	3.4
Total	58	100.0

During the entire campaign and election period, 32.8% of the opinion leaders mentioned searching for more information from the Internet at the beginning of campaign; 24.1% surfed the Internet for more information at all stages of the campaign; 15.5% started looking for more information in the middle of the campaign; only 8.7% accessed the Internet to obtain more information toward the end of the campaign; and 19% did not bother going online (Table 21).

**Table 21 The campaign stage in which opinion leaders searched for more information on the Internet**

	Frequency	Percent
Did not search at all	11	19.0
At the beginning of campaign	19	32.8
In the middle of the campaign	9	15.5
Toward the end of the campaign	5	8.6
At all stages of the campaign	14	24.1
Total	58	100.0

Although most opinion leaders made use of the Internet, 51.7% did not participate in online discussions, 29.3% participated rarely, 12.1% did so occasionally, 3.4% talked about election-related topics with others online regularly, and 3.4 % exchanged opinions online with

others all the time (Table 22).

**Table 22 The degree to which opinion leaders participated in online discussions**

	Frequency	Percent
Did not participate at all	30	51.7
Participated rarely	17	29.3
Participated occasionally	7	12.1
Participated regularly	2	3.4
Participated all the time	2	3.4
Total	58	100.0

## CHAPTER 5. CONCLUSIONS

### Summary of Findings

An online questionnaire was administered to a sample of 233 young adults who were qualified to vote in the 2012 U.S. presidential election. The results indicate that despite the popularity of online sources of opinion and commentary (e.g., social networking sites and blogs) that extend opportunities of exchange between and among political candidates, pundits, and voters, the sample still heavily depended more on the traditional media and interpersonal sources to be aware of, form attitudes toward, and decide on political candidates and issues. Political observers often write that campaigns have become more astute in the deployment of social media channels over time. For example, President Barack Obama's campaign exploited these channels to target potential voters for door-to-door canvassing, asking them to get out and vote. Their popularity notwithstanding, the results show that the social media have yet to replace the two conventional sources—the traditional media and interpersonal sources—as preferred channels of political news and related information.

Although the traditional media and interpersonal communication sources were used heavily, most respondents considered the traditional media their main channels of information about the presidential election. This finding is consistent with that of Walker et al. (2008) who found that those who voted in the 2008 presidential election obtained political information mainly from “news-only” television stations. This may be because when it comes to political affairs, the social media may be less convincing than their traditional and interpersonal counterparts.

Weaver (1996) suggests that information sources are able to reinforce people's existing attitudes or assist them in forming new ones. According to Miller and Krosnick (2000), “news

coverage may influence perceptions of national importance, which in turn may govern the ingredients of presidential performance appraisals” (p. 303). The results of the present study support these previous findings. They suggest that the traditional media were the main sources voters accessed to form attitudes toward the presidential candidates and the issues they champion.

Diffusion studies have long upheld the power of interpersonal sources in shaping behavioral intentions and outcomes. According to the diffusion of innovations theory, the mass media are the predominant sources people depend on to be made aware of innovations, but interpersonal sources, especially opinion leaders, play a more substantial role in determining the likelihood that an innovation will be adopted (Rogers, 2003). The findings of the current study differ in that voters learned first about the candidates and their issues through the traditional media (awareness stage), and they kept using the traditional media up to the stage in which they were making up their minds about whom they will elect to lead the nation (decision-making stage). This suggests the traditional media’s persistent power to influence across all campaign stages. As a corollary finding, about 70% of the respondents perceived the traditional media as expert and trustworthy in helping them arrive at their voting decision perhaps due to these channels’ established credibility and perceived ethos of accountability compared to social media outlets.

### **Model of Political Information Flow**

The relationships of source use at each of the three stages examined in this study point to a general flow of information quite different from that outlined in the two-step flow hypothesis. At the awareness stage, the findings indicate that people tended to choose between the traditional media and social networking sites as their main sources of information about the presidential election. That is, no relationship was observed between the use of these two sources, suggesting

that the use of one replaces the use of the other—an either/or relationship. Users of both sources, however, also refer to interpersonal sources, indicating a complementary role for face-to-face communication. In other words, interpersonal sources tended to supplement, but not replace, traditional and/or social media use (Figure 1 in the previous chapter).

At the stage in which voters were forming their attitude about the candidates and their platforms, all three source categories were reportedly utilized, suggesting a symbiotic type of relationship among them (Figure 2 in the previous chapter).

At the point when voters were trying to solidify their voting choice, the correlations show a pattern of information source use similar to that at the awareness stage, with the traditional and social media competing for audience attention and interpersonal communication seemingly augmenting the information function of either one of the two.

Based on the models gleaned from the correlation results, voters used interpersonal sources across the three stages, suggesting their utility as political information conduits even in the digital age. In other words, the study failed to detect any evidence that the social media and related websites were replacing or substituting for interpersonal contacts—and the traditional media—as the main sources of presidential election news and other information.

### **Opinion Leaders and Opinion Leadership**

The heavy use of interpersonal sources (reported by over half of the respondents) strengthens the importance of opinion leaders in the election process in line with Lazarsfeld's (1948) proposition that these influential individuals have the ability to convince people to develop or change their voting attitudes and behaviors. Thus, opinion leaders exert influence on audience behavior via their personal contact.

What are the characteristics of these opinion leaders? Rogers (2003) found that opinion



leaders share certain attributes. Compared to their followers, they have higher socioeconomic status, they more actively participate in civic and social activities, have greater exposure to the mass media, subscribe to a greater range of information sources, have more cosmopolite tendencies, and demonstrate more innovative behaviors. They also are less averse to change in comparison to others. In the present study, the same characteristics were found among those identified by respondents as sources to whom they turn for insights and counsel regarding political affairs.

Surveyed separately, these opinion leaders say that the traditional media were their primary information sources. They interpret what they read, hear, and watch in the media, and these interpretations, facts, and opinions are passed on to their circle of relatives, friends and acquaintances. Over half of the opinion leaders surveyed reportedly searched for information online at all stages of the campaign. This is consistent with the diffusion of innovations literature, which generally found opinion leaders as accessing more information sources throughout the diffusion process.

### **Implications of the Findings to Theory and Practice**

The results provide insights as to the dynamics of information source use in an era awash with ways by which voters can be reached for election and other political purposes. Despite recurring claims that the world has gone “all online all the time,” interpersonal sources remain crucial channels of information about elections and other political issues.

Despite the observed primacy of interpersonal sources, the advent of new media and the astute ways by which they have been deployed for political objectives have somehow changed people’s general media habits. For one, it appears that young adults have somehow diminished the frequency and extent of face-to-face interactions about political topics perhaps because they

now have more opportunities to receive a wealth of information through the Internet. The accessibility, ease of use, and convenience the new media offer may, in fact, make them the most preferred communication channels for political purposes in due time.

### **Limitations of the Study and Suggestions for Future Research**

There are limitations to the study that should be taken into consideration when interpreting the present results. First, the sample included only college students qualified to vote in the 2012 U.S. presidential election, which limits the generalizability of the results. Studies that use random samples more representative of the American voting population are therefore in order. Second, the low response rate and the resulting low sample size further put the generalizability of the findings in question.

Third, the concept of “information flow” necessarily entails progression or movement over time, a factor that was not included in these one-shot surveys. A clearer picture of flow should include the sequence of source use at different time points. Future studies should take this factor into consideration.

Fourth, like most diffusion studies, the current study relied on self-reports and recall, which is very much subject to biases, faulty memories, and other sources of error as recollections of actual source use degrade. These errors and biases may have seeped into responses about sources used at the awareness, attitude formation and decision-making phases.

Fifth, the sequence of questions may have cued the respondents regarding the researcher’s desired outcomes, or may have induced some kind of a “response set.”

Sixth, the rather lengthy nine-page questionnaire may have made the respondents prone to response fatigue. This was likely to happen considering that they were asked the same items for three distinct stages of the campaign.

Finally, although the impact and presumed ascendancy of the social media has been the subject of a wave of studies in the past ten years, longitudinal works that examine information flows through cross-lagged analyses are few and far between. Comparing source use throughout the election process and across different time points will be able to offer a more robust description of the trajectory of source use and will enable more empirically-based predictions that will be of great value to those who design, implement, and evaluate political campaigns.

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## APPENDIX A. SURVEY QUESTIONNAIRE

### Sources Used During the 2012 Presidential Election

#### Part A. Sources used for information seeking

1. How beneficial do you usually find these information sources in providing you with information about the presidential election? Please rate the following sources on a scale of 1 to 5 where 1 means “not beneficial at all” and 5 means “highly beneficial.”
  - a. Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
  - b. Social media (e.g., blogs, candidates’ Twitter or Facebook page) \_\_\_\_\_
  - c. Interpersonal communication (face-to-face interactions) \_\_\_\_\_
  
2. How accessible do you find these sources in providing you with information about the presidential election? Please rate the following sources on a scale of 1 to 5 where 1 means “not accessible at all” and 5 means “highly accessible.”
  - a. Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
  - b. Social media (e.g., blogs, candidates’ Twitter or Facebook page) \_\_\_\_\_
  - c. Interpersonal communication (face-to-face interactions) \_\_\_\_\_
  
3. How would you rate the quality of information you get from these sources? Please rate the following sources on a scale of 1 to 5 where 1 means “very low quality” and 5 means “very high quality.”
  - a. Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
  - b. Social media (e.g., blogs, candidates’ Twitter or Facebook page) \_\_\_\_\_
  - c. Interpersonal communication (face-to-face interactions) \_\_\_\_\_
  
4. How valuable or important are the following as sources of information about the presidential election? Please rate the following sources on a scale of 1 to 5 where 1 means “not valuable or important at all” and 5 means “very valuable or important.”
  - a. Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
  - b. Social media (e.g., blogs, candidates’ Twitter or Facebook page) \_\_\_\_\_
  - c. Interpersonal communication (face-to-face interactions) \_\_\_\_\_

5. To what extent do you depend on these sources for presidential election information? Please rate the following sources on a scale of 1 to 5 where 1 means “do not depend all” and 5 means “depend a great deal.”
- Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
  - Social media (e.g., blogs, candidates’ Twitter or Facebook page) \_\_\_\_\_
  - Interpersonal communication (face-to-face interactions) \_\_\_\_\_
6. How frequently do you obtain information about the presidential election from the following sources? Please rate the following sources on a scale of 1 to 5 where 1 means “do not use at all” and 5 means “use almost always.”
- Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
  - Social media (e.g., blogs, candidates’ Twitter or Facebook page) \_\_\_\_\_
  - Interpersonal communication (face-to-face interactions) \_\_\_\_\_
7. How much attention do you pay to these sources? Please rate the following sources on a scale of 1 to 5 where 1 means “do not pay attention at all” and 5 means “pay as close attention as I can.”
- Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
  - Social media (e.g., blogs, candidates’ Twitter or Facebook page) \_\_\_\_\_
  - Interpersonal communication (face-to-face interactions) \_\_\_\_\_
8. To what extent did you learn about the presidential candidates from these sources? Please rate the following sources on a scale of 1 to 5 where 1 means “did not learn anything at all” and 5 means “learned beyond a lot.”
- Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
  - Social media (e.g., blogs, candidates’ Twitter or Facebook page) \_\_\_\_\_
  - Interpersonal communication (face-to-face interactions) \_\_\_\_\_
9. To what extent do you consider the following sources trustworthy in informing you about political issues? Please rate the following sources on a scale of 1 to 5 where 1 means “not trustworthy at all” and 5 means “highly trustworthy.”
- Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_

- b. Social media (e.g., blogs, candidates' Twitter or Facebook page) \_\_\_\_\_
- c. Interpersonal communication (face-to-face interactions) \_\_\_\_\_
10. To what extent do you consider the following as expert in political topics or issues? Please rate the following sources on a scale of 1 to 5 where 1 means "not expert at all" and 5 means "highly expert."
- a. Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
- b. Social media (e.g., blogs, candidates' Twitter or Facebook page) \_\_\_\_\_
- c. Interpersonal communication (face-to-face interactions) \_\_\_\_\_
11. Please write down three sources (Ex: specific newspapers, magazines, TV and radio programs, such as *The New York Times*, *CBS News*, the names of your friends, your neighbor, etc.) you consider expert in presidential election matters.
- \_\_\_\_\_
12. Please write down three sources you consider trustworthy about presidential election matters.
- \_\_\_\_\_

**Part B. Sources used for attitude formation and attitude change**

1. How beneficial do you usually find these information sources to be in forming or changing your attitude toward presidential candidates? Please rate the following sources on a scale of 1 to 5 where 1 means "not beneficial at all" and 5 means "highly beneficial."
- a. Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
- b. Social media (e.g., blogs, candidates' Twitter or Facebook page) \_\_\_\_\_
- c. Interpersonal communication (face-to-face interactions) \_\_\_\_\_
2. To what extent do you think the information sources can change your attitudes toward presidential candidates from positive to negative or vice versa? Please rate the following sources on a scale of 1 to 5 where 1 means "did not change anything at all" and 5 means "changed beyond a lot."
- a. Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
- b. Social media (e.g., blogs, candidates' Twitter or Facebook page) \_\_\_\_\_
- c. Interpersonal communication (face-to-face interactions) \_\_\_\_\_

3. To what extent do you think information sources influence your attitudes toward presidential candidates when you already have identified your preferences (more approval or disapproval)? Please rate the following sources on a scale of 1 to 5 where 1 means “did not influence anything at all” and 5 means “influenced beyond a lot.”
- Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
  - Social media (e.g., blogs, candidates’ Twitter or Facebook page) \_\_\_\_\_
  - Interpersonal communication (face-to-face interactions) \_\_\_\_\_
4. How valuable or important do you usually find these information sources in forming or changing your attitudes toward presidential candidates? Please rate the following sources on a scale of 1 to 5 where 1 means “not valuable or important at all” and 5 means “very valuable or important.”
- Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
  - Social media (e.g., blogs, candidates’ Twitter or Facebook page) \_\_\_\_\_
  - Interpersonal communication (face-to-face interactions) \_\_\_\_\_
5. To what extent do you depend on these sources to form your attitude about presidential candidates? Please rate the following sources on a scale of 1 to 5 where 1 means “do not depend all” and 5 means “depend a great deal.”
- Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
  - Social media (e.g., blogs, candidates’ Twitter or Facebook page) \_\_\_\_\_
  - Interpersonal communication (face-to-face interactions) \_\_\_\_\_

### Part C. Sources used for decision-making in presidential elections

1. How beneficial do you find these information sources in helping you determine whom to vote for? Please rate the following sources on a scale of 1 to 5 where 1 means “not beneficial at all” and 5 means “highly beneficial.”
- Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
  - Social media (e.g., blogs, candidates’ Twitter or Facebook page) \_\_\_\_\_
  - Interpersonal communication (face-to-face interactions) \_\_\_\_\_
2. To what extent do you think these information sources caused you to change your voting decision? Please rate the following sources on a scale of 1 to 5 where 1 means “did not change anything at all” and 5 means “changed a lot.”

- a. Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
- b. Social media (e.g., blogs, candidates' Twitter or Facebook page) \_\_\_\_\_
- c. Interpersonal communication (face-to-face interactions) \_\_\_\_\_
3. How valuable or important are these information sources in helping you determine whom to vote for? Please rate the following sources on a scale of 1 to 5 where 1 means "not valuable or important at all" and 5 means "very valuable or important."
- a. Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
- b. Social media (e.g., blogs, candidates' Twitter or Facebook page) \_\_\_\_\_
- c. Interpersonal communication (face-to-face interactions) \_\_\_\_\_
4. To what extent do you depend on these sources for your voting decision? Please rate the following sources on a scale of 1 to 5 where 1 means "do not depend all" and 5 means "depend a great deal."
- a. Traditional media (television, newspapers, radio, magazines, online news sources) \_\_\_\_\_
- b. Social media (e.g., blogs, candidates' Twitter or Facebook page) \_\_\_\_\_
- c. Interpersonal communication (face-to-face interactions) \_\_\_\_\_

#### Part D. Opinion Leaders

Opinion leaders refer to influential members of a community, group, or society to whom others turn for advice, opinions, and views. Examples of opinion leaders are professors, parents, celebrities, political candidates and other influential figures.

1. Name three individuals, organizations, or entities to whom you refer if you have questions about the presidential election. Please explain why you made each choice.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Name three individuals, organizations, or entities you consider helpful in figuring out issues about the presidential election. Please explain why you made each choice.

\_\_\_\_\_

\_\_\_\_\_

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3. Name three individuals, organizations, or entities you consider influential in shaping your attitudes toward presidential candidates. Please explain why you made each choice.

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4. Name three individuals, organizations, or entities you consider influential in making your voting decision. Please explain why you made each choice.

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5. Name three individuals, organizations, or entities you consider to be opinion leaders when it comes to issues related to elections. Please explain why you made each choice.

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**Part E. Media use habits during presidential elections.** For each of the items below, please choose only one answer.

1. To what extent have you looked at the presidential candidates' official campaign websites, social networking sites, blogs, and other online sources to learn more about the candidates and their platforms based on what you heard from the news media?

- Never  
 Rarely  
 Occasionally  
 Almost always  
 All the time

2. To what extent has the information you received from these sources in Question 1 influenced your attitude about the candidates?

- No influence at all
- Influenced very little
- Influenced somewhat
- Influenced considerably
- Influenced a great deal

3. At what part of the campaign do you search for more information about the candidates from online sources?

- Do not search for information at all
- At the beginning of campaign
- In the middle of the campaign
- Toward the end of the campaign
- At all stages of the campaign

4. To what extent do you participate in interactive online discussions about the presidential election in forums such as blogs, Twitter, Facebook, and other social networking sites?

- Do not participate at all
- Participate rarely
- Participate occasionally
- Participate regularly
- Participate all the time

5. To what extent do you listen to the advice of the opinion leaders you have identified regarding who to vote for in the presidential election?

- Do not listen at all
- Listen rarely
- Listen occasionally
- Listen regularly
- Listen all the time

6. Who or what generally exert the strongest influence on your voting behavior?

- Opinion leaders
- Social media (blogs, candidates' Twitter and Facebook page, etc.)
- None of them

#### **Part F. Personal Information**

1. How old are you?

- 18~20
- 21~23
- 24~26
- 27~29
- 30~32
- 33~35
- Above 36

2. What year are you in school?

- Freshmen
  - Sophomore
  - Junior
  - Senior
  - Graduate student
3. What's your gender?
- Male
  - Female



## APPENDIX B. STUDY CODE BOOK

No	Variable	Description	Coding
1a	Bentrdin	How beneficial traditional media to be in providing information?	1= Not beneficial
1b	Bensocin	How beneficial social media to be in providing information?	2= A little
1c	Benmenin	How beneficial interpersonal communication to be in providing information?	3= Neutral
			4= A lot
			5= Highly beneficial
2a	Acctrdin	How accessible traditional media to be in providing information?	1= Not accessible
2b	Accsocin	How accessible social media to be in providing information?	2= A little
2c	Accmenin	How accessible interpersonal communication to be in providing information?	3= Neutral
			4= A lot
			5= Highly accessible
3a	Quatrdin	How the quality traditional media has in providing information?	1= Very low quality
3b	Quasocin	How the quality social media has in providing information?	2= Low quality
3c	Quamenin	How the quality interpersonal communication has in providing information?	3= Neutral
			4= High quality
			5= Very high quality
4a	Valtrdin	How valuable traditional media to be in providing information?	1= Not important
4b	Valsocin	How valuable social media to be in providing information?	2= A little
4c	Valmenin	How valuable interpersonal communication to be in providing information?	3= Neutral
			4= A lot
			5= Very important
5a	Deprdin	How much degree you depend on traditional media to be in providing information?	1= Do not depend
5b	Depsocin	How much degree you depend on social media to be in providing information?	2= A little
5c	Depmenin	How much degree you depend on interpersonal communication to be in providing information?	3= Neutral
			4= Depend a lot
			5= Depend a great deal
6a	Fretrdin	How frequently traditional media you use in providing information?	1= Do not use at all

6b	Fresocin	How frequently social media you use in providing information?	2= A little 3= Neutral 4= Use a lot 5= Use almost always
6c	Fremenin	How frequently interpersonal communication you use in providing information?	5= Use almost always
7a	Atttrdin	How much attention you pay to traditional media in providing information?	1= Do not pay attention at all 2= A little 3= Neutral 4= Pay a lot attention 5= Pay as close attention as I can
7b	Attsocin	How much attention you pay to social media in providing information?	
7c	Attmenin	How much attention you pay to interpersonal communication in providing information?	
8a	Inftrdin	How much degree you think traditional media influence you in providing information?	1= Did not learn anything 2= A little 3= Neutral 4= Learned a lot 5= Learned beyond a lot
8b	Infsocin	How much degree you think social media influence you in providing information?	
8c	Infmenin	How much degree you think interpersonal communication influence you in providing information?	
9a	Trutrdin	How much degree you consider traditional media as trustworthy in providing information?	1= Not trustworthy at all 2= A little 3= Neutral 4= Trustworthy 5= Highly trustworthy
9b	Trusocin	How much degree you consider social media as trustworthy in providing information?	
9c	Trumenin	How much degree you consider interpersonal communication as trustworthy in providing information?	
10a	Exptvin	How much degree you consider traditional media as expert in providing information?	1= Not expert 2= A little 3= Neutral 4= Expert 5= Highly expert
10b	Expsocin	How much degree you consider social media as expert in providing information?	
10c	Expmenin	How much degree you consider interpersonal communication as expert	

		in providing information?	
11a	Expesou1	Three sources you consider expert in informing you about the presidential election information. Categorize the answers.	1= Television 2= Newspapers 3= Radio 4= Magazines 5= News sites on the Internet 6= Social media 7= Interpersonal 8= Others
11b	Expesou2		
11c	Expesou3		
12a	Trussou1	Three sources you consider trustworthy in informing you about the presidential election information. Categorize the answers.	1= Television 2= Newspapers 3= Radio 4= Magazines 5= News sites on the Internet 6= Social media 7= Interpersonal 8= Others
12b	Trussou2		
12c	Trussou3		
13a	Bentvatt	How beneficial traditional media to be in forming attitude?	1= Not beneficial 2= A little 3= Neutral 4= A lot 5= Highly beneficial
13f	Bensocat	How beneficial social media to be in forming attitude?	
13g	Benmenat	How beneficial interpersonal communication to be in forming attitude?	
14a	Chatvatt	How much degree you think traditional media change your attitudes (good to bad or vice versa)?	1= Not changed anything at all 2= A little 3= Neutral 4= Changed a lot 5= Changed beyond a lot
14b	Chasocat	How much degree you think social media change your attitudes (good to bad or vice versa)?	
14c	Chamenat	How much degree you think interpersonal communication change your attitudes (good to bad or vice versa)?	
15a	Inftvat	How much degree you think traditional media influence your attitudes?	1= Not influenced anything at all 2= A little 3= Neutral 4= Influenced a lot 5= Influenced beyond a lot
15b	Infsocket	How much degree you think social media influence your attitudes?	
15c	Infmenat	How much degree you think interpersonal communication influence your attitudes?	
16a	Valutvat	How valuable traditional media have in forming or changing your attitudes	1= Not important 2= A little

		toward presidential candidates	3= Neutral 4= A lot 5= Very important
16b	Valsocat	How valuable social media have in forming or changing your attitudes toward presidential candidates?	
16c	Valmenat	How valuable interpersonal communications have in forming or changing your attitudes toward presidential candidates?	
17a	Depetvat	How much degree you depend on traditional media to be in forming attitudes?	1= Do not depend 2= A little 3= Neutral
17b	Depsocat	How much degree you depend on social media to be in forming attitudes?	4= Depend a lot 5= Depend a great deal
17c	Depmenat	How much degree you depend on interpersonal communication to be in forming attitudes?	
18a	Bentvdec	How beneficial traditional media to be in determining to vote whom?	1= Not beneficial 2= A little
18b	Bensocde	How beneficial social media to be in determining to vote whom?	3= Neutral 4= A lot
18c	Benmende	How beneficial interpersonal communication to be in determining to vote whom?	5= Highly beneficial
19a	Tvnoidea	How helpful traditional media to be when you have no ideas to vote whom?	1= Not help at all 2= A little 3= Neutral
19b	Socnoide	How helpful social media to be when you have no ideas to vote whom?	4= Helped a lot 5= Highly helpful
19c	Mennoide	How helpful interpersonal communication to be when you have no ideas to vote whom?	
20a	Tvchange	How much degree traditional media may change your voting decision when you already have preferences?	1= Not changed anything at all 2= A little
20b	Socchang	How much degree social media may change your voting decision when you already have preferences?	3= Neutral 4= Changed a lot 5= Changed beyond a lot
20c	Menchang	How much degree interpersonal communication may change your voting decision when you already have preferences?	
21a	Valutvvo	How valuable traditional media to be in helping determine to vote whom?	1= Not important 2= A little
21b	Valsocvo	How valuable social media to be in helping determine to vote whom?	3= Neutral 4= A lot

21c	Valmenvo	How valuable interpersonal communication to be in helping determine to vote whom?	5= Very important
22a	Depetvat	How much degree you depend on traditional media for your voting decision?	1= Do not depend 2= A little 3= Neutral 4= Depend a lot 5= Depend a great deal
22b	Depsocat	How much degree you depend on social media for your voting decision?	
22c	Depmenat	How much degree you depend on interpersonal communication for your voting decision?	
23a	Listen1	Three people who you'll listen to when you have any questions about presidential election. Categorize the answers.	1= Television 2= Newspapers 3= Radio 4= Magazines 5= News sites on the Internet 6= Social media 7= Interpersonal 8= Others
23b	Listen2		
23c	Listen3		
24a	Figure1	Three people you think they are helpful to figure out questions about presidential election. Categorize the answers.	1= Television 2= Newspapers 3= Radio 4= Magazines 5= News sites on the internet 6= Social media 7= Interpersonal 8= Others
24b	Figure2		
24c	Figure3		
25a	Infatt1	Three people you think their opinions will influence your attitudes toward presidential candidates. Categorize the answers.	1= Television 2= Newspapers 3= Radio 4= Magazines 5= News sites on the internet 6= Social media 7= Interpersonal 8= Others
25b	Infatt2		
25c	Infatt3		
26a	Infvote1	Three people you think their opinions will influence your presidential voting decision. Categorize the answers.	1= Television 2= Newspapers 3= Radio 4= Magazines 5= News sites on the internet 6= Social media 7= Interpersonal
26b	Infvote2		
26c	Infvote3		

			8= Others
27a	Opinio1	Three people you consider to be opinion leaders when it comes to issues related to elections. Categorize the answers.	1= Television
27b	Opinio2		2= Newspapers
27c	Opinio3		3= Radio
			4= Magazines
			5= News sites on the internet
			6= Social media
			7= Interpersonal
			8= Others
28	Usenet	To what extent have you looked at the presidential candidates' official campaign websites, social networking sites, blogs, and other online sources to learn more about the candidates and their platforms based on what you heard from the news media?	1= Never 2= Rarely 3= Occasionally 4= Almost always 5= All the time
29	Infnet	Have the information from the related websites influenced your attitudes that you heard about the issues from mass media?	1= No influence at all 2= Influenced very little 3= Influenced somewhat 4= Influenced considerably 5= Influenced a great deal
30	Whennet	At what part of the campaign do you search for more information about the candidates from online sources?	1= Do not search for information at all 2= At the beginning of campaign 3= In the middle of the campaign 4= Toward the end of the campaign 5= At all stages of the campaign
31	Interact	To what extent do you participate in interactive online discussions about the presidential election in forums?	1= Do not participate at all 2= Participate rarely 3= Participate occasionally

			4= Participate regularly 5= Participate all the time
32	Leadwin	To what extent do you listen to the advice of the opinion leaders you have identified regarding who to vote for in the presidential election?	1= Do not listen at all 2= Listen rarely 3= Listen occasionally 4= Listen regularly 5= Listen all the time
33	Whoinfvo	Who or what generally exert the strongest influence on your voting behavior?	1= Opinion leaders 2= Social media 3= None
34	Age	How old are you?	1= 18~20 2= 21~23 3= 24~26 4= 27~29 5= 30~32 6= 33~35 7= Above 36
35	Class	What year are you in school?	1= Freshmen 2= Sophomore 3= Junior 4= Senior 5= Graduate
36	Gender	What's your gender?	1= Male 2= Female



## APPENDIX C. INSTITUTIONAL REVIEW BOARD APPROVAL

**IOWA STATE UNIVERSITY**  
OF SCIENCE AND TECHNOLOGY

Institutional Review Board  
Office for Responsible Research  
Vice President for Research  
1138 Pearson Hall  
Ames, Iowa 50011-2207  
515 294-4566  
FAX 515 294-4267

**Date:** 11/2/2012  
**To:** Jo-Yun Li  
150 University Village Unit D  
Ames, IA 50011  
**CC:** Dr. Lulu Rodriguez  
214 Hamilton Hall  
**From:** Office for Responsible Research  
**Title:** Re-examining the two-step flow of information in the age of the digital media: The case of the 2012 US presidential elections  
**IRB ID:** 12-536

**Study Review Date:** 10/31/2012

The project referenced above has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b) because it meets the following federal requirements for exemption:

- (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey or interview procedures with adults or observation of public behavior where
  - Information obtained is recorded in such a manner that human subjects cannot be identified directly or through identifiers linked to the subjects; or
  - Any disclosure of the human subjects' responses outside the research could not reasonably place the subject at risk of criminal or civil liability or be damaging to their financial standing, employability, or reputation.

The determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**
- **You must carry out the research as described in the IRB application.** Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any modifications to the research procedures (e.g., method of data collection, nature or scope of information to be collected, changes in confidentiality measures, etc.), modifications that result in the inclusion of participants from vulnerable populations, and/or any change that may increase the risk or discomfort to participants. Changes to key personnel must also be approved. The purpose of review is to determine if the project still meets the federal criteria for exemption.

Non-exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.

**Detailed information about requirements for submission of modifications can be found on the Exempt Study Modification Form.** A Personnel Change Form may be submitted when the only modification involves changes in study staff. If it is determined that exemption is no longer warranted, then an Application for Approval of Research Involving Humans Form will need to be submitted and approved before proceeding with data collection.

Please note that you must submit **all** research involving human participants for review. **Only the IRB or designees may make the determination of exemption**, even if you conduct a study in the future that is exactly like this study.

Please be aware that **approval from other entities may also be needed.** For example, access to data from private records (e.g. student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. **An IRB determination of exemption in no way implies or guarantees that**