

THE POLITICAL EFFECTS OF THE DIGITAL DIVIDE

By

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To the Faculty of Washington State University:

The members of the Committee appointed to examine the dissertation
of LU WEI find it satisfactory and recommend that it be accepted.

Chair

ACKNOWLEDGMENT

The journey of a thousand miles begins with one step.

I am glad that I have taken another important step on the journey of my life. This step could not be made without the help of a number of people. I would like to thank Dr. Douglas Blanks Hindman, who provided guidance and support through my Ph.D program as committee chair and advisor. Other invaluable suggestions for improving the dissertation came from Dr. David Demers, Dr. Alex Tan, and Dr. Elizabeth Krueger, who are or was on my committee. I also would like to thank Dr. Susan Ross for providing academic and financial support for my first year of study. Thanks also go to all the professors who have been teaching classes in which I learned how to become a good researcher and teacher. Finally, I would like to acknowledge my wife, Yanrong Yan, for her love and support which are critical for this family to survive in the U.S.

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Above all, thanks God!

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Abstract

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This study explores the political effects of the digital divide. Specifically, it investigates the effects of the first and second digital divides on people's political knowledge and participation. It also compares the usage gap of new media and traditional media and their differential impacts on political knowledge and participation. The role of knowledge in the political effects model of the digital divide is also examined.

Two data sets are analyzed to test the hypotheses. One is the Pew political communications national survey in 2004, and the other is the Washington State University college student survey in 2007.

Based on bivariate test, regression analysis, and path models, the findings show that the informational use of the Internet is more important than the access to the Internet in predicting political knowledge and participation. Moreover, there is a greater education-based usage gap of the Internet than of the traditional media in the general population. While no education-based usage gap has been found in the student sample, there is a greater gender-based usage gap of the Internet than of the traditional media among the members of this group.

Regarding the effects of the differential usage gaps of new media and old media, different data sets produce different findings. The education-based usage gap of the Internet has a greater effect on knowledge and participation in the general population,

whereas the gender-based usage gap of the Internet has a weaker impact than that of traditional media in the student sample.

The mediating role of political knowledge between the digital divide and political participation is supported by the Pew national data, but not by the WSU student data. While the informational use of the Internet can predict political knowledge in the general population, there is no significant relationship between knowledge and participation among college students.

Implications of this study are discussed, including revisiting the definition of the digital divide, justifying the necessity of the digital divide research, answering the “so what” question previous literature has yet sufficiently addressed, and assessing the effects of the digital divide in an Internet-saturated population.

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Dedication

This dissertation is dedicated to my wife, Yanrong Yan;
my daughter, Marissa Mei Wei; my mother and father.

CHAPTER ONE

INTRODUCTION

As a metaphor, the digital divide affords an opportunity to identify the inequalities between the technological haves and have-nots. Having been popular in the last decade, this term successfully put the issue on the agenda of social, political and scholarly discussions.

Previous research on the digital divide, mainly, if not exclusively, focused on the *access* to and *use* of new media (Hindman, 2000; Norris, 2001; UCLA Internet Report, 2000; Wilhelm, 2000). Generally, the term new media refers to an updating of the conventional “information technology” to encompass the rapid convergence of technologies such as computers, Internet, telecommunications, and broadcasting technologies (Selwyn, 2004). The access to and use of new media, having been called the first and the second digital divide (Attewell, 2001; Natriello, 2001), did draw a clear picture of the technological gaps in the society. A more significant question of the social impact of digital divide, however, remains unanswered. As the Internet is becoming an increasingly prominent medium of information, it is critical for researchers to know whether the digital divide has an actual effect on people’s political knowledge and participation. This question goes directly to the social consequences of disparities in access to and use of new media.

There is widespread support for the general thrust of the knowledge gap hypothesis. This hypothesis posits that as the infusion of mass media information

into a social system increases, people with higher socioeconomic status (SES) tend to acquire this information at a faster rate than the people with lower SES (Tichenor et al., 1970). It is ambiguous, however, whether this hypothesis can be adapted to new media, whether the divisions in the access to and use of new media will lead to the knowledge gap, and whether the knowledge gap itself has effects on political participation.

In addition, the role of mass media goes beyond conveying factual information to citizens. The political information people acquired from the media may help motivate their political participation. This is specifically true when media are an important source of what has been labeled “mobilizing information” (Lemert, 1984, 1992). A question following the knowledge gap, therefore, is whether the possible gaps in knowledge caused by the digital divide will lead to the disparities in participation.

Observing the striking fact that the effects of differential access and use usually are taken for granted and they are not becoming a part of the research design (Van Dijk, 2002), this paper attempts to examine the impact of the first and second digital divides on people’s political knowledge acquisition and participation, and to shift people’s attention from the existing technological divides to their actual social consequences.

The digital divide

The term “digital divide” appears to have originated in newspaper reports and was popularized in the 1995 U.S. government report “Falling through the Net.” (Servon, 2002; NTIA, 1995)

The concept of the digital divide, according to Norris (2001), encompasses three distinct aspects. The global divide refers to the divergence of Internet access between industrialized and developing countries. The social divide concerns the gap between information rich and poor in each nation. The democratic divide signifies the disparities between those who do and do not, use new media to engage, mobilize and participate in public life.

Apart from this macroscopic classification, Attewell (2001) categorized the digital divide into two levels from a microscopic perspective. He labeled the access to computers and the Internet the “first digital divide”, and the disparities in computer and Internet use “the second digital divide.” Defining the digital divide as a simplification of the phenomenon of inequality of access to new media, Van Dijk (2002) argued that the concept of access can be distinguished into four kinds of access: (1) Lack of elementary digital experience caused by lack of interest, computer anxiety and unattractiveness of the new technology (“mental access”); (2) No possession of computers and network connections (“material access”); (3) Lack of digital skills caused by insufficient user-friendliness and inadequate education or social support (“skills access”); and (4) Lack of significant usage opportunities or unequal distribution of them (“usage access”).

Although Attewell and Van Dijk used different terminology, their classifications are consistent. The first two kinds of access are tightly related to the first digital divide because mental access may relate directly to material or physical access. The last two kinds of access, on the other hand, are closely tied with the second digital divide, as skills access may have a significant influence on usage access.

Despite of a large amount of scholarly and political attention to the digital divide, much contemporary debate over this issue focuses solely on the means, rather than the ends, of the use of new media. The consequence of accessing and using new media remains a “fundamental yet often unvoiced element of the digital divide debate” (Selwyn, 2004: 349). Therefore, one objective of this study is to explore the political effects of the digital divide and, to compare the effects of the first and second digital divides on people’s political knowledge and participation.

The knowledge gap

Regarding the political effects of differential access to and use of new media, a critical aspect is knowledge acquisition on the Internet. As information and knowledge can translate into social and political power, the asymmetries of knowledge acquisition may have a direct impact upon people’s social and political life. Consequently, once the issues of disparities in the access to and use of new media have been addressed to some extent, the problem of their effects on political knowledge forges ahead.

Traditionally, knowledge gap research focused on the relationship between knowledge acquisition and SES, most often using formal education as a surrogate of SES (Gaziano, 1983, 1997; Tichenor et al., 1970; Tichenor et al., 1973; Moore, 1987; Viswanath & Finnegan, 1996). Subsequent studies, however, found other variables that play a role in shaping the knowledge gap and began to challenge the education-based knowledge gap hypothesis. Gaziano (1983), for example, examined the role of factors such as topic type and geographic scope, operational definitions of knowledge, types of communication channels, and research design and data collection methods. In an extensive review, Viswanath and Finnegan (1996) discussed several contingent conditions that affect knowledge gaps, including differences in content domains and topic type, information functionality and geographic scope, complexity of knowledge, channel influence differences, and the role of media publicity in campaign and noncampaign communication.

Among these variables, channel differences frequently have been observed as new communication technologies play an increasingly significant role in people's daily life. Findings from past studies about channel influence have emphasized mainly the role of print media, the comparative effectiveness of print and broadcast media, and the potential of television as a knowledge equalizer (Viswanath & Finnegan, 1996).

The development of new media technologies, particularly the Internet, stimulated the debate over the impact of new technologies on the knowledge gap. Enthusiasts predicted that the Internet would reduce inequality by lowering the cost of

information and thus enhancing the ability of low-income men and women to gain human capital, find and compete for good jobs, and otherwise enhance their social chances (Anderson et al., 1995). By contrast, cyber-skeptics suggested that the greatest benefits will accrue to high-SES persons, who may use their resources to employ new media sooner and more productively than their less privileged peers, and that this tendency would be reinforced by better Internet connections and easier access to social support (DiMaggio et al., 2001).

Therefore, whether the digital divide in access and usage translates into a divide in knowledge, and subsequently into other life outcomes, is vital to our understanding of the inequalities in the digital era. Although the concepts of digital divide and knowledge gap were sometimes intertwined in research on the inequality issue driven by new media (Bucy, 2000; DiMaggio et al., 2001; Hindman, 2000; Kingsley & Anderson, 1998; Van Dijk & Hacker, 2003), very few studies formally linked these two constructs. In fact, many studies and policies assume that people can convert Internet access into other valued goods, services, and life outcomes. Researchers, however, have not yet generated much empirical evidence to support this premise for Internet access (DiMaggio et al., 2001). Moreover, as Bonfadelli (2002, p. 66) noted, “Not only is there a lack of solid empirical data that could demonstrate, for example, the advantages of Internet access over the use of the traditional mass media, but even from a theoretical perspective it is also rather unclear if the policy postulate of Internet access for everybody will be the necessary factor for success in the future – or if access to media or Internet information will be relevant at all.”

Accordingly, the present study attempts to investigate the effects of the digital divide on political knowledge and, more importantly, to answer the question that whether the use of new media has a greater impact on political knowledge than does the use of traditional media.

Communication and social participation

Mass media have been playing an important role in mobilizing people's political participation and civic engagement. Merritt and Rosen (1995) argued that news media in general and newspapers in particular can serve as important agents of conveying information necessary for individuals to participate in politics. This type of coverage not only includes descriptions of a given issue (e.g., a community conflict) but also contains information that makes the conflict comprehensible (Lemert, 1984, 1992).

Social capital researchers have focused on the influence of new media on community involvement. Civic engagement, interpersonal trust, and life satisfaction are three essential components of social capital (Portes, 1998; Scheufele & Shah, 2000; Shah, McLeod & Yoon, 2001). According to traditional perspective of social capital research, social capital increases with age, education, income, employment, church attendance, general sociability and personality strength (Putnam, 1995, 2000; Verba et al., 1995), but declines with an increase in media use. The underlying mechanism is based on the traditional time measure of media use and is drawn from the much-researched displacement (Shah, McLeod & Yoon, 2001) and cultivation (Gerbner et al., 1980; Hawkins & Pingree, 1981) theories. Suggesting an alternative

complementary framework, Dutta-Bergman (2005) found that Internet access in both individual levels and community levels are positively associated with community participation. In other words, individuals living in communities with access to the Internet are more likely to be involved in their communities than individuals living in communities without access to the Internet. It demonstrates that the gap between communities in terms of Internet access has detrimental consequences for civic participation (Dutta-Bergman, 2005).

In addition, being aware of the fact that traditional time measure of media use does not capture the diversity of media experiences and that different media use patterns serve different functions for the individual consumer (Scheufele & Shah, 2000; Shah, Kwak & Holbert, 2001; Shah, McLeod & Yoon, 2001), researchers found that the functions served by a specific medium are stronger predictors of civic engagement than the time spent on the medium. Specifically, informational uses of the Internet are positively associated with the production of social capital, while social capital is depleted by entertainment uses of the Internet (Shah, Kwak & Holbert, 2001).

The relationship between Internet use and political participation, however, is ambiguous, given the multidimensional nature of the construct of participation. Although there is no consensus over the number of dimensions that can be distinguished, most researchers have differentiated voting from other forms of participatory behavior (e.g., Eveland & Scheufele, 2000; Milbrath & Goel, 1977; Rosenstone & Hansen, 1993; Verba et al., 1995). As Milbrath and Goel (1977) argued,

voting is based on social norms and long-term gratifications, and does not require as much information and motivation as do most other political activities. It may simply be driven by “the desire to do one’s duty as a citizen or . . . to influence government policy” (Verba et al., 1995, p. 360).

Therefore, this study aims primarily to examine the effects of the digital divide on people’s general social participation than on their voting behavior. Again, the effects of differences in the use of new and old media on citizen’s social participation will be investigated too.

Summary

Given a lack of research on the social consequences of the digital divide, more empirical studies are needed to test the assumption that people’s differential access to and use of new media have serious implications for both individuals and society. The present study attempts to add to the body of knowledge through five objectives:

1. Compare the effects of the first and second digital divides on people’s political knowledge and participation. Is the use of new media more important than the access to new media in terms of the impacts on political knowledge and participation?
2. Compare the use patterns of new media and traditional media. Why is the *digital* divide so important? Are disparities in the use of new media and old media different in some ways?

3. Compare the impacts of usage differences of new and old media on political knowledge as well as participation. Would usage differences of new media and old media have different effects on people's political knowledge and participation?
4. Examine the role of knowledge in the political effects model of the digital divide. Does knowledge mediate the relationship between the digital divide and political participation?

This research goes beyond the questions such as “what is the digital divide?” and “whether there is a digital divide?” and concentrates on the social consequences of the digital divide and what type of digital divide matters. It can help scholars, public officials, and citizens better understand why the digital divide is a critical issue facing the society, and how the digital divide influences people's social and political life in some significant ways.

CHAPTER TWO

LITERATURE REVIEW

Access vs. Use

Among various classifications of the digital divide, Attewell (2001) categorized it into two levels. He labeled the access to computers and the Internet the “first digital divide”, and the disparities in computer and Internet use “the second digital divide.” As the concept of the digital divide was traditionally defined as “a gap between those who have access to technology and those who do not” (Besser, 2004, p.1), the majority of research on digital divide focuses on the first digital divide.

Observing the fact that public opinion and public policy are strongly pre-occupied with the first digital divide, Van Dijk (1999; 2002) claimed that access problems of digital technology gradually shift from the first digital divide to the second. Traditional inquiries of digital divide translate the metaphor into a dichotomous comparison between computer owners and nonowners, or a comparison of those with and without Internet access. Although this translation is appropriate for studies concerned with the diffusion of the technology, it may not be sufficient when discussing the social consequences of the technology’s diffusion (Jung et al., 2001). Specifically, having the same material access does not necessarily mean that people have exactly the same manner and extent of Internet use. In fact, the divide in access could be exacerbated by usage differences after the Web has spread to the majority of the American population (Hargittai, 2002, 2004;

Robinson et al., 2003). In other words, when the problems of material access have been solved, partly if not totally, the problems of structurally differential uses come to the fore.

The access to a certain form of media does matter for citizens' knowledge gains and participatory behaviors. Newspaper readers, for instance, tend to obtain and retain more political information (Chaffee & Frank, 1996; Chaffee et al., 1970; Chaffee, Zhao, & Leshner, 1994; Clarke & Fredin, 1978; Kessel, 1980; Klapper, 1960) and can better discriminate among issues compared to television viewers (Choi & Becker, 1987; Wagner, 1983). Television users, in contrast, are more likely to make voting decisions based on candidate images and personal qualities portrayed in television (Graber, 1976; Keeter, 1987). Although television does indeed have a greater impact on current events knowledge, newspapers are more powerful on fundamental political knowledge (Garrazone & Atkin, 1986). As Chaffee et al. (1994, p. 309) summarized concerning the media effects on political knowledge, "almost all studies attribute a substantial contribution to newspaper reading . . . but only about one-half of studies testing the value of TV advertising on knowledge about candidate's issue positions detect any effect."

As a new form of media, the Internet has been found beneficial to people's political knowledge and participation. Research shows that Internet users have greater overall exposure to political arguments, including those that challenge their candidate preferences and their issue positions (Horrigan et al., 2004). Dutta-Bergman (2005) also found that Internet access in both individual levels and community levels are

positively associated with community participation. In other words, individuals living in communities with access to the Internet are more likely to be involved in their communities than individuals living in communities without access to the Internet.

The access measure, however, fails to explain the differential effects of the same form of media. Some began to argue that “it is not the form but the content of the media, which matters” (Newton, 1999, p. 598). Drawing from the 1996 British Social Attitudes survey data, Newton (1999) found a strong association between broadsheet newspaper reading and higher levels of political knowledge, self-assessed interest and understanding of politics but very weak correlation between tabloid reading and both mobilization and malaise. Likewise, Holz-Bacha and Norris (2001) as well as Aarts and Semetko (2003) found that preference for public television was associated with higher levels of political knowledge while preference for commercial television was associated with lower levels of knowledge. In addition, research showed that television news watching was positively related to political knowledge and civic activity whereas entertainment preference was negatively linked to knowledge and participation (Eveland, Shah, & Kwak, 2003; Hooghe, 2002; Norris, 1996; Prior, 2005; Putnam, 2000). The general conclusion of this research is that informational uses of the mass media, whether reading newspapers or watching news programs, have procivic consequences (Shah et al., 2005). We argue that the new media are an extension of old media (Golding, 2000), so that the actual use of new media should be more important than the access to new media. Therefore, the following hypotheses are to be tested:

H-1a: The informational use of new media is more strongly associated with political knowledge than the access to new media.

H-1b: The informational use of new media is more strongly associated with political participation than the access to new media.

Although the first two hypotheses are designated to test the associations between access to as well as informational use of new media and political knowledge/participation, a direction from Internet access/use to political knowledge/participation will be followed in the data analysis, particularly regression analysis.

It is possible that political knowledge and participation may lead to the access to and informational use of new media (and old media). Neuman (1986), for example, argues that having more political knowledge makes individuals more likely to seek further information about politics.

A large body of literature, however, suggests a path from media use to political knowledge and participation. Theoretically, Delli Carpini and Keeter (1996, p. 185) point out that “much of one’s observed knowledge about politics must come, at least initially, from the mass media.” Decades of political communication research has also empirically demonstrated the role of news media use in producing political knowledge (Brians & Wattenberg, 1996; Chaffee, Zhao, & Leshner, 1994; McLeod et al., 1996;

McLeod & McDonald, 1985; Neuman, Just, & Crigler, 1992; Palmgreen, 1979; Robinson & Levy, 1986, 1996).

Similarly, both theoretical and empirical work on the mobilizing potential of media advanced in political science, sociology, and communication supports the treatment of information seeking through mass media as antecedent to political participation (Almond & Verba, 1963; Coleman, 1990; Delli Carpini & Keeter, 1996; Habermas, 1979; McLeod et al., 1996; McLeod, Scheufele, & Moy, 1999; Putnam, 2000; Tönnies, 1940; Verba, Schlozman, & Brady, 1995; Zaller, 1992).

Most recently, communication researchers identified models of causality from media use to political knowledge (Eveland et al., 2005) and from media use to civic participation (Shah et al., 2005) to be the best fitting models among alternatives, after rigorous model comparisons using national panel data.

In light of these findings, a path from Internet access/use to political knowledge/participation will be used in the regression analysis to test the hypotheses.

New media vs. old media: The usage gap

While use could be more important than access, the new media and old media are different in terms of the magnitude of the possible usage gaps. The usage gap refers to the disparities in the use of various media between individuals with different socio-economic statuses (SES) or backgrounds. As new media, particularly the Internet, provides far more choices and less salience cues than do traditional forms of media, the usage gap could be greater for new media than for traditional

media. Newspapers, for example, provide readers with strong cues regarding the top stories of the day through headline size and prominence, as well as article position and length (Graber, 1988). Television can also set audiences' agenda by cues such as the order and length of the stories, as well as the times of repetition. Moreover, through a comparison of the readers of the print versus the online editions of the *New York Times*, Tewksbury and Althaus (1999) found online readers were exposed to fewer articles concerning international, national, or political issues and were less likely to attend to stories that traditionally were grouped in the front page of print newspapers.

As traditional media have relative emphasis either on news (e.g., newspapers) or on entertainment (e.g., television) (Chaffee & Frank, 1996; Fallows, 1997; Postman, 1986; Robinson, 1975; Shah, Kwak, et al., 2001), the forms of these media indeed exert significant influence over their users.

In contrast, the expansive freedom of the Internet attracts a wide range of users each with specialized sets of interests related to their backgrounds and status (Scheufele & Nisbet, 2002). People's SES would have greater impact on their use patterns of new media than on their use of traditional media.

The relatively homogeneous nature or content preferences of traditional media, to some extent, set a limit to the use patterns of individuals with different SES. For example, people with low status would have significant informational use of newspapers and people with high status would have fairly frequent entertainment use of television.

The explicitly heterogeneous nature of the Internet, however, makes people's use of it largely a reflection of their SES or social backgrounds. That is to say, people with low status would use new media primarily for entertainment whereas those with high status would use new media mainly for an informational purpose. And this distinction is expected to be greater for new media than for traditional media.

H-2: The usage gap of new media is greater than the usage gap of traditional media.

New media vs. old media: The impacts on knowledge and participation

The differential usage gaps of new media and traditional media would have some effects on political knowledge and participation. The knowledge gap hypothesis posits that as the infusion of mass media information into a social system increases, people with higher SES tend to acquire this information at a faster rate than the people with lower SES (Tichenor et al., 1970). In other words, the informational use of mass media would have different consequences in knowledge for individuals with different SES. This is assuming that people have the same extent of exposure to mass media information. In reality, however, this is hardly the case. As discussed earlier, people with different SES would have different use patterns of mass media. A most important difference is the gap between informational use and entertainment use.

Regarding political knowledge, it is intuitive that informational use would have a greater effect on knowledge acquisition than would entertainment use of mass media. The knowledge gap literature indicates that political knowledge is particularly a critical consequence of newspaper reading (Eveland & Scheufele, 2000; Tichenor et al., 1970; Viswanath & Finnegan, 1996), because newspapers place more emphasis on information than on entertainment. Research shows that newspaper readers tend to obtain and retain more political information (Chaffee & Frank, 1996; Chaffee et al., 1970; Chaffee, Zhao, & Leshner, 1994; Clarke & Fredin, 1978; Kessel, 1980; Klapper, 1960) and can better discriminate among issues compared to television viewers (Choi & Becker, 1987; Wagner, 1983). This suggests that the magnitude of the usage gap between different levels of informational use may influence the magnitude of the knowledge gap. Specifically, the usage gap of new media is expected to be more strongly associated with political knowledge than that of traditional media.

Similarly, political participation is influenced differently by different types of media use. Specifically, research found that informational uses of the Internet encourage community involvement and foster civic participation (Norris, 1998; Shah, Kwak, & Holbert, 2001; Shah, McLeod, et al., 2001), whereas entertainment uses of the Internet contribute to lower levels of political participation (Scheufele & Nisbet, 2002). Consequently, it could be expected that the usage gap of new media would be more strongly associated with political participation than that of traditional media.

H-3a: The usage gap of new media is more strongly associated with political knowledge than is the usage gap of traditional media.

H-3b: The usage gap of new media is more strongly associated with political participation than is the usage gap of traditional media.

Knowledge as dependent and independent variable

Political knowledge is not only an important dependent variable, but an equally important independent variable. Numerous studies (e.g., Delli Carpini & Keeter, 1996; Neuman, 1986; Rosenstone & Hansen, 1993; Verba et al., 1997; Verba & Nie, 1972; Verba, Scholzman, & Brady, 1995) have demonstrated that political knowledge is directly and positively associated with political participation. According to Wolfinger and Rosenstone (1980), factual or current-events knowledge allows citizens to make informed decisions, creates a sense of civic duty, and increases familiarity with bureaucratic institutions and political processes. Because these functions are critical to at least some forms of political participation, knowledge has been recognized as one of the key predictors of political participation.

Past research, however, has treated knowledge either as a dependent variable (Chaffee & Frank, 1996; Chaffee & Tims, 1982; Chaffee, Zhao, & Leshner, 1994; Eveland et al., 2005) or as an independent variable (Delli Carpini & Keeter, 1996; McCluskey et al., 2004; Milner, 2001; Pattie & Johnston, 2003). Few studies have incorporated media use, knowledge and participation measures in a single study (de Vreese & Boomgaarden, 2006; Scheufele, 2002; Tan, 1980). Consequently, we not

only examine the relationship between the digital divide and knowledge but also investigate the links between political knowledge and political participation.

H-4: People's political knowledge is positively associated with political participation.

CHAPTER THREE

METHODS

This chapter outlines the two studies used in the present research. One dataset, which is a national survey, was used to investigate the effects of the digital divide on political knowledge and participation in the general population. Another dataset, collected from a college student sample, was used to test the same set of hypotheses in a sub-sample of the population. This chapter also describes methods of data collection, measures of key variables, and statistical procedures used to test the hypotheses.

Pew political communications national survey (2004)

Data

Data for the present study came from the Pew Research Center for the People and the Press Early January 2004 Political Communications Study. The dataset was downloaded from <http://people-press.org/dataarchive/>. Telephone interviews for this survey were conducted under the direction of Princeton Survey Research Associates among a nationwide sample of 1,506 adults, 18 years of age or older (51.1% women, 48.9% men; $M_{\text{age}} = 47$, $SD = 17.36$; 83% White), between December 19, 2003 and January 4, 2004. Based on the total sample, at the 95% confidence level, the error attributable to sampling and other random effects is plus or minus 3 percentage points. Unweighted data were used to avoid the inflation of case number.

Measures

The access to the Internet. Internet access was measured by a single yes or no question: “Do you ever go online to access the Internet or World Wide Web or to send and receive email? (see Appendix B for question wording of all survey items)” Responses were measured on a dichotomous scale with “1” representing yes and “0” representing no (see Table 3.1 for descriptives for Internet access and other key variables in Pew national data).

The informational use of the Internet. Four questions were asked to measure people’s informational use of the Internet. Specifically, respondents were asked how often, if ever, they learn something about the presidential campaign or the candidates from: (a) the Internet, (b) the news pages of internet service providers such as AOL News or Yahoo News, (c) the web sites of news organizations such as CNN.com, the New York Times.com, or your local newspaper or TV stations’ websites, and (d) other kinds of online news magazine and opinion sites such as Slate.com or the National Review online. Responses were measured on a 4-point scale ranging from “1” (regularly) to “4” (never). “1”, “2”, “3” were recoded as “1”, and “4” was recoded as “0”. These four items were combined to an index of the informational use of the Internet ($\alpha = .78$) by averaging the scores (see Table 3.2).

The informational use of traditional media. The forms of traditional media surveyed in the present study include newspapers, television, magazine, and radio. Respondents were asked how often, if ever, they learn something about the presidential campaign or the candidates from these traditional media (see appendix

for exact question wording). The same recoding was applied as the informational use of the Internet. Newspapers, magazine and radio were measured by a single item, whereas television was measured by multiple items in the survey. An index was then created for the informational use of television ($\alpha = .66$) by averaging the scores (see Table 3.3). Table 3.4 shows that the correlations among these traditional media use measures are not strong enough to combine them in an index. Consequently, they were kept separate in subsequent analyses.

Usage gaps. According to the literature review, usage gaps were conceptualized the disparities in the use of various media between individuals with different SES. As education has been widely recognized as the surrogate of SES, and because informational use of mass media has a greater effect on knowledge and participation than entertainment use of mass media, the usage gaps can be operationalized as the interaction between education and the informational use of various media. Interaction terms were then created by multiplying education with each of the media use variables examined here.

It should be emphasized that the usage gap measure is based on informational use rather than on entertainment use. Although one could argue that an entertainment use gap might be related to knowledge and political participation (as in mobilizing information from internet exchanges with others via e-mail, chat rooms and blogs), previous literature generally supports the argument that informational uses of both new media and old media tend to have greater effects on political knowledge and participation, in contrast to entertainment uses of mass

media (Eveland, Shah, & Kwak, 2003; Hooghe, 2002; Norris, 1996; Prior, 2005; Putnam, 2000; Shah et al., 2005). This is also confirmed by WSU student data, in which most entertainment uses do not have a significant effect on political knowledge and participation (see Table 4.10-4.11). Consequently, the present research adopted a gap construct based on traditional notions of media use for information, and gaps in entertainment use were not analyzed.

Political knowledge. Four items in the survey asked respondent's political knowledge (see Table 3.5). Two of them asked respondents' knowledge about (a) Al Gore's endorsement of Howard Dean, and (b) Howard Dean's comment about wanting to win the votes of "guys with Confederate flags in their pickup trucks". Responses include "heard a lot" (1), "heard something" (2), "never heard about it" (3), and "don't know/refused" (9). To facilitate the analysis, the first two categories were collapsed as "1" and the rest as "0". The other two items asked, "Do you happen to know which of the presidential candidates, (a) served as an Army general (*correct=Wesley Clark*), (b) served as the Majority Leader in the House of Representatives (*correct=Richard Gephardt*)?" Correct answer was coded as "1", and other answers were coded as "0". The four items were summed to create an index of political knowledge, the alpha of which is .71.

Political participation. Political participation was measured by four items (a = .64): contributed money to a candidate running for public office, contacted any elected official, joined an organization in support of a particular cause, and attended a campaign event (see Table 3.6). The respondents were asked whether they have done

the above activities and whether they have done so within the last 12 months. The answer “yes, within the last 12 months” was coded as “1”; “yes, but NOT within the last 12 months” was coded as “2”; “no” was coded as “3”. “1” and “2” were recoded as “1”, and “3” was recoded as “0”.

Control Variables. Suggested by previous studies (see Delli Carpini & Keeter, 1996; Eveland, Jr. & Scheufele, 2000; McLeod, Scheufele, & Moy, 1999; Verba et al., 1995), several demographic variables play a key role in predicting media use and political knowledge. Specifically, age group (1-6 scale representing 6 groups, the youngest being 18-24, and the oldest being 65+), sex (dummy-coded male), race (dummy-coded white), income (a 1-9-point scale representing 9 ranges from the lowest [less than \$10,000] to the highest [\$150,000+]), and education (a 1-4-point scale from less than high school to higher than college) were used as basic controls. Besides, party affiliation (a 1-3-point scale from Democrat to independent and to Republican) and ideology (a 1-5-point scale from very liberal to very conservative) proved to have significant impact on political knowledge so that they were included as another set of control variables.

Table 3.1

Descriptive Statistics of Key Variables in Pew National Data

Variables	Minimum	Maximum	<i>M</i>	<i>SD</i>	alpha
Internet access	0	1	.67	.47	
Internet info use	0	1	.35	.36	.78
TV info use	0	1	.54	.25	.66
Newspapers info use	0	1	.78	.41	
Magazine info use	0	1	.52	.50	
Radio info use	0	1	.35	.48	
Political knowledge	0	4	1.86	1.38	.71
Political participation	0	4	1.04	1.21	.64

Note. *N* = 1, 506; unweighted data.

Table 3.2

Descriptive Statistics of Internet Informational Use Items in Pew National Data

Items	<i>M</i>	<i>SD</i>	Item-total cor.
Now I'd like to ask you about some specific ways in which you might be getting news about the presidential campaign. For each item that I read, please tell me how often, if ever, you learn something about the presidential campaign or the candidates from the Internet	.47	.50	.65
News pages of Internet service providers	.38	.48	.66
The web sites of news organizations	.39	.49	.59
Other kinds of online news magazine and opinion sites	.16	.36	.47

Note. $N = 1,506$; unweighted data.

Table 3.3

Descriptive Statistics of Television Informational Use Items in Pew National Data

Items	<i>M</i>	<i>SD</i>	Item-total cor.
Now I'd like to ask you about some specific ways in which you might be getting news about the presidential campaign. For each item that I read, please tell me how often, if ever, you learn something about the presidential campaign or the candidates from cable news networks	.82	.39	.36
C-Span	.43	.50	.37
Public TV shows	.49	.50	.36
National nightly network news	.80	.40	.29
Political talk shows	.58	.49	.48
Sunday morning network talk shows	.52	.50	.41
Local TV news	.41	.49	.25
Morning TV shows	.26	.44	.33

Note. $N = 1,506$; unweighted data.

Table 3.4

*Descriptive Statistics and Correlations of Informational Use of Traditional Media in
Pew National Data*

Variables	<i>M</i>	<i>SD</i>	1	2	3	4
1. Television	.54	.25	1			
2. Newspapers	.78	.41	.21***	1		
3. Magazine	.52	.50	.28***	.21***	1	
4. Radio	.35	.48	-.11***	.06*	.06*	1

Note. * $p < .05$. *** $p < .001$; $N = 1,491$; unweighted data.

Table 3.5

Descriptive Statistics of Political Knowledge Items in Pew National Data

Items	<i>M</i>	<i>SD</i>	Item-total cor.
Now I want to ask you a few questions about some things that have been in the news about the presidential campaign recently. Not everyone will have heard of them. As I read each item, tell me if you have heard a lot about it, something about it, or never heard about it. Al Gore's endorsement of Howard Dean	.73	.44	.40
Howard Dean's comment about wanting to win the votes of 'guys with Confederate flags in their pickup trucks'	.46	.50	.46
Do you happen to know which of the presidential candidates served as an Army general	.36	.48	.60
Do you happen to know which of the presidential candidates served as the Majority Leader in the House of Representatives	.31	.46	.52

Note. $N = 1,506$; unweighted data.

Table 3.6

Descriptive Statistics of Political Participation Items in Pew National Data

Items	<i>M</i>	<i>SD</i>	Item-total cor.
People express their opinions about politics and current events in a number of ways. I'm going to read a list of some of these ways. Have you ever contributed money to a candidate running for public office	.24	.42	.44
Contacted any elected official	.32	.47	.41
Joined an organization in support of a particular cause	.26	.44	.40
Attended a campaign event	.22	.42	.44

Note. $N = 1,506$; unweighted data.

Washington State University college student survey (2007)

Data

A convenience sample of 320 college communication majors in 6 classes at Washington State University was surveyed in late April and early May 2007. Institutional Review Board approval for the use of human subjects was acquired prior to the survey (Appendix A). A self-administered paper questionnaire was given to the participants (57.8% women, 42.2% men; $M_{\text{age}} = 21$, $SD = 2.22$) and was returned immediately after completion. Extra credit was granted to those who participated in this survey.

Measures

Internet access. Traditionally, Internet access has been assessed by a dichotomous measure of whether the physical artifacts of technology are available or not. This notion, however, obscures more subtle differences in the context of Internet access. For example, the provision of the Internet in a public library or other community centers may not necessarily mean people will actually go online from these places. A variety of issues, including cost, time, environment, quality of the technology, as well as “ease of use” all need to be taken into account (Davis, 1993; Selwyn et al., 2000). Therefore, it is important to distinguish an individual’s perceived (or effective) access in practice from theoretical (or formal) access to the Internet (Selwyn, 2004; Wilson, 2000). In addition, the disparities between theoretical access and effective access should be measured continuously rather than dichotomously, because any realistic notion of access “must be defined from the individual’s perspective” (Selwyn, 2004). Hence, we asked respondents how easy or difficult they feel able to access the Internet

at home, at work, at other places such as public library and community center, and their overall evaluation of the easiness of Internet access (see Appendix C for question wording of all survey items). These questions were measured by a 5-point scale (1 = very difficult, and 5 = very easy). As most students were not working, the Internet access at work item was dropped to increase the reliability of the scale ($\alpha = .62$) (see Table 3.7 for descriptives for the key variables in WSU student data and see Table 3.8 for descriptives for Internet access items). Descriptive statistics shows that the level of Internet access among college students is remarkably high ($M = 4.48$ at a 5-point scale, $SD = .58$), which indicates an Internet-saturated environment among the student population.

Internet use. Eleven questions from previous research (e.g., Shah et al., 2005; Shah et al., 2001; Pew Internet & American Life Project, 2007) were used to measure Internet use. An 8-point scale (0 = never, and 7 = 7 days) was used for each item. Three factors were emerged from a principal component analysis using varimax rotation (see Table 3.9). Other rotation methods, including promax, equamax, quartimax, and oblimin, produced the same factors.

One factor is about people's informational use of the Internet, which consists of questions such as how many days in the past week have you visited a news Web site (e.g., CNN.com), the Web site of a government agency, the Web site of a social group or cause, and the Web site of a politician. These items are consistent with those used in some previous studies (e.g., Shah et al., 2001; Shah et al., 2005). An index of the

informational use of the Internet (see Table 3.10) was then created by averaging these four items ($\alpha = .48$).

The other two factors were both related to the entertainment use of the Internet. One consists of three items asking respondent's e-mail use, Web surfing for fun, and social networking activities, the other contains four questions asking how often respondents are engaged in playing online games, listening to music online, downloading games, videos or pictures, or chatting online in the past week. Although these two factors might be different regarding the types of entertainment, they share the same nature of entertainment. Consequently, an index of entertainment use of the Internet (see Table 3.11) was created by averaging scores of these seven items ($\alpha = .63$).

Traditional media use. Both exposure and attention to different media and content were considered when measuring the traditional media use variable. Specifically, respondents were asked how many days in the past week they read articles or watched stories about national or local government and politics in newspapers or on television. Responses were recorded on an 8-point scale from 0 to 7 days. For attention measures, respondents were asked to report how much attention they paid to newspaper articles or television stories about national or local government and politics. Responses were recorded on a 5-point scale that ranges from *very little attention* to *very close attention*. An index of informational use of newspapers ($\alpha = .82$) was created by standardizing measures of exposure and attention into T scores (multiplying Z scores by 10 and adding 50 to each score) and averaging all the scores (see Table 3.12 for descriptives

before conversion). The same way was used to create an index for informational use of television ($\alpha = .77$) (see Table 3.13 for descriptives before conversion). Both exposure and attention measures of the informational use of traditional media come from the study conducted by Shah and his colleagues (2005).

Similarly, the entertainment use of traditional media was measured by exposure and attention to recreational content in newspapers or on television. For exposure, respondents were asked how many days in the past week they read food, lifestyle, and magazine sections in newspapers or watched drama, sitcoms and reality shows on television. The same 8-point scale was used to rate responses. For attention measures, respondents were asked how much attention they paid to food, lifestyle, and magazine sections in newspapers or drama, sitcoms and reality shows on television. Responses were recorded on a 5-point scale. These questions were adapted from Shah et al. (2001). The same strategy mentioned earlier was used to create indices of entertainment use of both newspapers ($\alpha = .78$) and television ($\alpha = .79$) (see Table 3.14-3.15 for descriptives before conversion).

Usage gap. As in Pew data, the usage gap was operationalized as the interaction between education and different levels of informational use in this student sample. Specifically, interaction terms were created by multiplying education with each of the media use variables. The present author would like to find out whether the education-based usage gap exists in this student sub-sample.

Political knowledge. As recommended by Delli Carpini and Keeter (1993, 1996), political knowledge was measured with both political system knowledge and factual,

current-events knowledge. Some of the national system knowledge questions come from American National Election Studies, such as “who is the current U.S. Secretary of Defense?” and “which party currently has the most members in the U.S. House of Representatives?”

Regarding national affairs knowledge, the *News Interest Index* launched by the Pew Research Center for the People & the Press is used as a criterion to select national political affairs. According to its survey findings released on February and March, 2007, Iraq war and 2008 campaign were two most followed and covered political news stories during that period of time. Hence, questions related to these two issues were asked to measure people’s national affairs knowledge. One question, for example, asked “whether President Bush agreed or disagreed to set a deadline for withdrawing U.S. troops from Iraq?”

Each dimension was measured by six questions. An additive index of political knowledge (see Table 3.16) was constructed by adding together the number of correct responses to all these 12 knowledge questions ($\alpha = .79$).

Political participation. Past research has consistently supported the notion of political participation as a multidimensional construct. According to the key works conducted by Verba and Nie (1972) and Verba et al. (1995), four dimensions can be identified to conceptualize political participation: (1) the frequency of voting in local and national elections; (2) campaign activities, such as persuading others, attending meetings, or contributing money; (3) citizen-initiated contacts to local, state, and

national officials; and (4) cooperative activities, namely, involving group or organizational activities.

Most researchers have differentiated voting from other forms of participatory behavior (e.g., Eveland & Scheufele, 2000; Milbrath & Goel, 1977; Rosenstone & Hansen, 1993; Verba et al., 1995). As voting is based on social norms and long-term gratifications, and does not require as much information and motivation as do most other political activities (Milbrath & Goel, 1977; Verba et al., 1995), general political participation could be more important for democracy than voting.

The present study therefore focuses on general political participation rather than on the frequency of voting in elections when investigating the political effects of the digital divide. Twenty one participation questions from Putnam's (2000) study were asked (see appendix for question wording). Three items, including involving in group that meets over the Internet, participating in veteran's group, and participating in labor union, were taken off the list to increase the alpha value to .75 (see Table 3.17).

Control variables. Suggested by previous studies (see Delli Carpini & Keeter, 1996; Eveland & Scheufele, 2000; McLeod, Scheufele, & Moy, 1999; Scheufele, 2002; Verba et al., 1995), several demographic variables play a key role in influencing the relationship of media use and political outcomes. Specifically, age, sex, income, education, ideological orientation, and party affiliation were used as basic controls. Besides, political interest proved to have significant impact on political knowledge and participation (Scheufele, 2002) so that it was controlled as well. Political interests at both national and local levels were controlled. A 4-point scale

ranging from not interested at all (0) to very interested (3) was used to record the responses.

Table 3.7

Descriptive Statistics of Key Variables in WSU Student Data

Variables	Minimum	Maximum	<i>M</i>	<i>SD</i>	alpha
Internet access	2	5	4.48	.58	.62
Internet info use	0	6.75	1.43	1.19	.48
Internet entertain use	.29	7	3.39	1.13	.63
Newspapers info use	37.53	72.36	50	8.03	.82
Newspapers entertain use	40.69	80.01	50	6.87	.78
TV info use	33.31	71.96	50	7.70	.77
TV entertain use	30.62	66.94	50	7.01	.79
Political knowledge	0	12	4.90	2.67	.79
Political participation	0	15	5.53	3.18	.75

Note. *N* = 320

Table 3.8

Descriptive Statistics of Internet Access Items in WSU Student Data

Items*	<i>M</i>	<i>SD</i>	Item-total cor.
How easy or difficult is it for you to access the Internet at home?	4.72	.74	.34
How easy or difficult is it for you to access the Internet at other places, such as public library and community center?	4.23	.91	.34
Overall, how easy or difficult is it for you to access the Internet?	4.50	.61	.69

* Range from 1 to 5, with 5 indicating easier access to the Internet. *N* = 320

Table 3.9

Principle Components Analysis of Internet Use in WSU Student Data

Survey item	Factor 1	Factor 2	Factor 3
Sent or read e-mail	0.81		
Surfed the Web for fun	0.70		
Used an online social networking site	0.75		
Played online games		0.51	
Listened to music online		0.67	
Downloaded other files such as games, videos, or pictures		0.76	
Chatted in a chat room or in an online discussion		0.69	
Visited a news Web site			0.65
Visited the Web site of a government agency			0.70
Visited the Web site of a social group or cause			0.52
Visited the Web site of a politician			0.73
Eigenvalues	1.97	1.84	1.81
% of variance	17.92	16.73	16.49

Note. Cell entries are rotated factor loadings. Rotation method: Varimax with Kaiser Normalization. $N = 320$

Table 3.10

Descriptive Statistics of Internet Informational Use Items in WSU Student Data

Items*	<i>M</i>	<i>SD</i>	Item-total cor.
How many days in the past week did you visit a news Web site?	2.95	2.43	.40
How many days in the past week did you visit the Web site of a government agency?	.42	.93	.28
How many days in the past week did you visit the Web site of a social group or cause?	2.16	2.69	.34
How many days in the past week did you visit the Web site of a politician?	.19	.68	.32

* Range from 0 to 7, with 7 indicating greater informational use of the Internet. *N* = 320

Table 3.11

Descriptive Statistics of Internet Entertainment Use Items in WSU Student Data

Items*	<i>M</i>	<i>SD</i>	Item-total cor.
How many days in the past week did you send or read e-mail?	6.36	1.29	.33
How many days in the past week did you surf the Web for fun?	5.49	2.16	.39
How many days in the past week did you use an online social networking site like MySpace, Facebook or Friendster?	5.88	1.97	.33
How many days in the past week did you play online games?	.84	1.74	.23
How many days in the past week did you listen to music online at a website?	2.32	2.50	.41
How many days in the past week did you download other files such as games, videos, or pictures?	1.95	2.42	.49
How many days in the past week did you chat in a chat room or in an online discussion?	.93	1.79	.23

* Range from 0 to 7, with 7 indicating greater informational use of the Internet. *N* = 320

Table 3.12

Descriptive Statistics of Newspapers Informational Use Items in WSU Student Data

Items	Min	Max	<i>M</i>	<i>SD</i>	Item-total cor.
How many days in the past week did you read articles about national government and politics in newspapers?	0	7	1.78	2.19	.76
How many days in the past week did you read articles about local government and politics in newspapers?	0	7	1.56	2.09	.73
How much attention do you pay to newspaper articles about national government and politics?	1	5	2.98	1.14	.59
How much attention do you pay to newspaper articles about local government and politics?	1	5	2.74	1.04	.50

Note. Entries are scores before converting to T scores. $N = 320$

Table 3.13

Descriptive Statistics of Television Informational Use Items in WSU Student Data

Items	Min	Max	<i>M</i>	<i>SD</i>	Item-total cor.
How many days in the past week did you watch stories about national government and politics on television?	0	7	1.94	2.18	.64
How many days in the past week did you watch stories about local government and politics on television?	0	7	1.30	1.91	.64
How much attention do you pay to television stories about national government and politics?	1	5	3.13	1.22	.50
How much attention do you pay to television stories about local government and politics?	1	5	2.83	1.11	.52

Note. Entries are scores before converting to T scores. $N = 320$

Table 3.14

Descriptive Statistics of Newspapers Entertainment Use Items in WSU Student Data

Items	Min	Max	<i>M</i>	<i>SD</i>	Item-total cor.
How many days in the past week did you read food section in newspapers?	0	7	.52	1.22	.46
How many days in the past week did you read lifestyle section in newspapers?	0	7	1.53	1.97	.56
How many days in the past week did you read magazine section in newspapers?	0	7	1.20	1.80	.56
How much attention do you pay to food section in newspapers?	1	5	2.12	1.07	.43
How much attention do you pay to lifestyle section in newspapers?	1	5	2.77	1.19	.59
How much attention do you pay to magazine section in newspapers?	1	5	2.43	1.21	.52

Note. Entries are scores before converting to T scores. $N = 320$

Table 3.15

Descriptive Statistics of Television Entertainment Use Items in WSU Student Data

Items	Min	Max	<i>M</i>	<i>SD</i>	Item-total cor.
How many days in the past week did you watch drama on television?	0	7	2.56	2.19	.54
How many days in the past week did you watch sitcoms on television?	0	7	2.66	2.33	.61
How many days in the past week did you watch reality shows on television?	0	7	2.09	2.20	.53
How much attention do you pay to drama on television?	1	5	3.50	1.14	.53
How much attention do you pay to sitcoms on television?	1	5	3.49	1.15	.58
How much attention do you pay to reality shows on television?	1	5	3.07	1.37	.42

Note. Entries are scores before converting to T scores. $N = 320$

Table 3.16

Descriptive Statistics of Political Knowledge Items in WSU Student Data

Items	<i>M</i>	<i>SD</i>	Item-total cor.
Who is the current U.S. Vice President?	.83	.38	.38
Who is the current U.S. Secretary of Defense?	.04	.19	.24
Who is the current Chief Justice of the Supreme Court?	.08	.26	.35
Who is the current U.S. Attorney General?	.15	.36	.59
Which party currently has the most members in the U.S. House of Representatives?	.60	.49	.50
Which party currently has the most members in the U.S. Senate?	.59	.49	.57
Do you happen to know whether President Bush agree or disagree to set a deadline for withdrawing U.S. troops from Iraq?	.72	.45	.30
What is the name of the army medical center where war-wounded soldiers were poorly treated?	.06	.24	.38
What is the name of the U.S. official who has been asked by some to resign because of his alleged involvement in the firings of eight U.S. attorneys?	.19	.39	.57
What is the name of the person who won an academy award for his film about global warming?	.70	.46	.40
What is the name of the presidential candidate whose wife is battling recurrence of cancer?	.32	.49	.47
What is the name of the 2008 presidential hopeful who was once mayor of New York City?	.63	.48	.49

Note. *N* = 320

Table 3.17

Descriptive Statistics of Political Participation Items in WSU Student Data

Items	<i>M</i>	<i>SD</i>	Item-total cor.
Have you attended a political meeting or rally?	.17	.37	.35
Have you participated in self-help program?	.12	.33	.16
Have you signed a petition?	.66	.49	.31
Have you participated in demonstrations, boycotts, or marches?	.11	.34	.29
Have you participated in ethnic, nationality, or civil rights organization?	.15	.38	.28
Have you participated in hobby, investment, or garden club?	.41	.51	.39
Have you participated in service or fraternal organization?	.44	.50	.30
Have you participated in organization affiliated with religion?	.47	.50	.29
Have you served as an officer or on a committee?	.45	.50	.37
Have you participated in sports club, league, or outdoor activity club?	.69	.46	.28
Have you participated in professional, trade, farm or business association?	.18	.39	.21
Have you belonged to any group that took local action for reform?	.07	.25	.31
Have you participated in parent association or other school support group?	.06	.24	.36
Have you participated in political group?	.12	.33	.32
Have you belonged to other kinds of clubs or organizations?	.67	.47	.40
Have you participated in youth organization?	.40	.49	.51
Have you participated in seniors' groups?	.06	.24	.29
Have you participated in charity or social welfare organization?	.35	.48	.43

Note. *N* = 320

Data analysis

SPSS 13.0 was used to perform the data analysis. Specifically, the following procedures were conducted to analyze the data and test the hypotheses:

Descriptive statistics. The means and standard deviations for each individual item and scale were computed and reported.

Scale assessment. A Cronbach's alpha was calculated and reported for each scale to evaluate whether it reaches an acceptable internal reliability.

Zero-order correlations. Simple correlations were computed and reported between all the key variables. This provides a preliminary test of hypotheses.

Regression analysis. In order to examine the relationships between key variables while controlling for demographics and other related factors, hierarchical multiple regressions were performed to test the hypotheses. β coefficients were calculated and reported to indicate the direction and magnitude of relationships. Specifically, the following regression analyses were performed for both datasets:

First, a hierarchical multiple regression was performed against political knowledge as well as participation to compare the effects of Internet access and use. Specifically, political knowledge and participation regressed on demographics, party affiliation and ideology, informational use of traditional media, Internet access, and informational use of the Internet in blocks.

Second, to compare the associations between education/sex and the informational use of different media, a set of multiple regression models were

produced with demographics as independent variables and the informational use of each form of media as dependent variables.

Next, a series of hierarchical multiple regressions were performed to examine the effects of usage gaps on political knowledge and participation. In particular, demographics, party affiliation and ideology were entered as a block first. Then, each of the interaction terms took turns to be entered, resulting in a set of multiple regression models for further comparison. As the sample size of all the models is above 1, 000 for the Pew national data, the cut-off point for statistical significance is set at the .001 level. The regular .05 level was used as the cut-off point for the WSU student data.

Path models. A path model was drawn for each dataset to simplify and summarize the results regarding the test of H-1a, H1-b, and H-4. Multiple regressions were performed to produce path coefficients of each endogenous variable on its priors.

The usage gap construct was not included in path models. Because usage gaps were operationalized as interaction terms (education \times informational use of various media), multiple regressions with all the interaction terms simultaneously entered into the model may introduce the problem of multicollinearity. Consequently, the usage gap related hypotheses (i.e., H-2, H-3a, and H-3b) were not reflected in path models.

CHAPTER FOUR

RESULTS

Bivariate tests

Pew national data

The first two hypotheses state that the informational use of the Internet is more strongly associated with political knowledge and participation than is the access to the Internet. According to Table 4.1, the Pearson correlation between informational use of the Internet and knowledge ($r = .22, p < .001$) is stronger than that of Internet access and knowledge ($r = .14, p < .001$). Similarly, the informational use of the Internet is more strongly related to participation ($r = .20, p < .001$) than is the access to the Internet ($r = .16, p < .001$). Hypothesis 1a and 1b are supported at the bivariate level.

Hypothesis 2 predicts that socio-economic status is more strongly associated with the informational use of the Internet than with that of the traditional media. As shown in Table 4.2, the Pearson correlation between education and informational use of the Internet is the strongest ($r = .26, p < .001$), followed by informational use of magazine ($r = .20, p < .001$) and television ($r = .12, p < .001$). The correlation for informational use of newspapers ($r = .07, p < .01$) is not statistically significant, given a cut-off significance point at the .001 level. Education is not significantly related to informational use of radio ($r = .05, p = .08$). The hypothesis is supported.

Hypothesis 3a and 3b predict that the usage gap of the Internet is more strongly associated with political knowledge than is the usage gap of traditional media. To test

this, five interaction terms of informational uses of various media and education are analyzed in relation to political knowledge and participation. Results in Table 4.1 show that the interaction term of informational use of television, not informational use of the Internet, has the strongest correlation with both political knowledge ($r = .36, p < .001$) and participation ($r = .30, p < .001$). The correlation for the Internet-education interaction term ranks the second with knowledge ($r = .29, p < .001$) and the third with participation ($r = .25, p < .001$). As a result, these two hypotheses are not supported.

Hypothesis 4 states that people's political knowledge is positively associated with political participation. Correlation analysis provides support to this hypothesis. Specifically, political knowledge is strongly associated with political participation ($r = .39, p < .001$), as shown in Table 4.1.

Table 4.1

Political Knowledge and Participation Correlations with Media Variables in Pew National Data

Variable	<i>M</i>	<i>SD</i>	<i>N</i>	Knowledge	Participation
1. Internet access	.67	.47	1,506	.14***	.16***
2. Info use of the Internet	.35	.36	1,506	.22***	.20***
3. Info use of television	.54	.25	1,506	.25***	.18***
4. Info use of newspapers	.78	.41	1,506	.16***	.08**
5. Info use of magazine	.52	.50	1,506	.17***	.21***
6. Info use of radio	.35	.48	1,506	.11***	.08**
7. Internet × Education	1.11	1.25	1,505	.29***	.25***
8. Television × Education	1.61	.98	1,503	.36***	.30***
9. Newspapers × Education	2.31	1.50	1,504	.29***	.21***
10. Magazine × Education	1.61	1.70	1,505	.25***	.27***
11. Radio × Education	1.04	1.53	1,504	.16***	.14***
12. Knowledge	1.86	1.38	1,506	1	.39***
13. Participation	1.04	1.21	1,506		1

Note. ** $p < .01$. *** $p < .001$; $N = 1,503$

Table 4.2

Education Correlations with Media Use Variables in Pew National Data

Variable	<i>M</i>	<i>SD</i>	Education
1. Info use of the Internet	.35	.36	.26***
2. Info use of television	.54	.25	.12***
3. Info use of newspapers	.78	.41	.07**
4. Info use of magazine	.52	.50	.20***
5. Info use of radio	.35	.48	.05

Note. ** $p < .01$. *** $p < .001$; $N = 1,503$

WSU student data

Table 4.3 shows the correlations between different media variables and political knowledge as well as participation. It can be found that the informational use of the Internet significantly correlates with political knowledge ($r = .24, p < .001$), but not with participation. In addition, Internet access does not have a statistically significant relationship with either knowledge or participation. In other words, the informational use of the Internet is more strongly associated with political knowledge than is the access to the Internet. This is, however, not true for participation. Consequently, hypothesis 1a is supported, but 1b is rejected.

Table 4.3 also confirms the different roles of informational use and entertainment use in predicting political knowledge and participation. Specifically, informational use of the Internet is significantly associated with knowledge ($r = .24, p < .001$), whereas entertainment use of the Internet is not. Similarly, informational use of television has a significant relationship with both political knowledge ($r = .43, p < .001$) and participation ($r = .15, p < .01$), whereas entertainment use of television does not. The same pattern is also found for newspapers, except both informational use and entertainment use of newspapers are related to political participation. However, informational use ($r = .21, p < .001$) still has a stronger relationship with participation than does entertainment use of newspapers ($r = .18, p < .01$). These findings are consistent with previous literature, which claims that informational use of mass media tends to have procivic consequences, in contrast to entertainment use of mass media. This also supports the rationale to operationalize the usage gap as the disparity

between different levels of informational use rather than between different levels of entertainment use, while examining the political effects of usage gaps.

As respondents in this student sample have very similar levels of education ($M = 14.41$, $SD = 1.63$), the education-based usage gap does not exist in this student sample, according to the correlation analysis of media use and education. None of the media use variables is significantly related to education (Table was omitted). However, the present author found that another demographic variable, sex, has a significant relationship with informational use of the Internet ($r = .15$, $p < .01$), as shown in Table 4.4. Specifically, men have more informational use of the Internet than women. This indicates that a gendered usage gap, instead of an education-based usage gap, exists among college students. As gender is one of the most important determinants of the digital divide (Korupp & Szydluk, 2005), this finding is not surprising. In addition, as shown in Table 4.4, sex is not significantly related to informational use of television and newspapers, which suggests that the gendered usage gap of the Internet is greater than that of traditional media. Consequently, hypothesis 2, which predicts that the usage gap of the Internet is greater than the usage gap of traditional media, is supported in another way. Given this extra finding of a gendered usage gap among college students, additional data analyses regarding the effects of such a gender-based usage gap will be performed with the student data in the following sections. Specifically, an interaction term between sex and informational use of the media will be created for the data analyses.

Hypothesis 3a and 3b state that the usage gap of the Internet is more strongly associated with political knowledge and participation than is the usage gap of traditional media. When considering the usage gap as a gendered gap, the interaction of sex and informational use of the Internet has a stronger relationship with political knowledge ($r = .13, p < .05$) than do television and newspapers, as shown in Table 4.3. In fact, the interaction terms for gender \times informational use of television, and gender \times informational use of newspapers do not have a statistically significant relationship with knowledge. Hypothesis 3a is therefore supported.

Concerning participation, the interaction term of gender \times informational use of the Internet ($r = .12, p < .05$) has a slightly weaker relationship with participation than does that of gender \times informational use of newspapers ($r = .13, p < .05$). Hypothesis 3b is rejected.

Table 4.3 shows that political knowledge is not significantly related to participation. This leads to a rejection of hypothesis 4, which states that people's political knowledge is positively associated with political participation.

Table 4.3

*Political Knowledge and Participation Correlations with Media Variables in WSU**Student Data*

Variable	<i>M</i>	<i>SD</i>	Knowledge	Participation
Internet access	4.48	.58	.01	-.05
Internet info use	1.43	1.19	.24***	.10
Internet entertain use	3.39	1.13	.03	.06
Television info use	50	7.70	.43***	.15**
Television entertain use	50	7.01	-.08	-.03
Newspapers info use	50	8.03	.47***	.21***
Newspapers entertain use	50	6.87	-.10	.18**
Internet info × sex	2.16	1.93	.13*	.12*
Television info × sex	78.67	27.23	-.05	.09
Newspapers info × sex	78.60	27.28	-.02	.13*
Knowledge	4.90	2.67	1	.03
Participation	5.53	3.18		1

Note. ** $p < .01$. *** $p < .001$; $N = 320$

Table 4.4

Sex Correlations with Media Use Variables in WSU Student Data

Variable	<i>M</i>	<i>SD</i>	Sex (male)
1. Info use of the Internet	1.43	1.19	.15**
2. Info use of television	50	7.70	.06
3. Info use of newspapers	50	8.03	.08

Note. ** $p < .01$; $N = 320$

Regression analysis

Pew national data

Table 4.5 shows the predictors of political knowledge and participation.

Regarding political knowledge, all the demographic variables are significant predictors, with age being the strongest predictor ($\beta = .36, p < .001$), followed by education ($\beta = .23, p < .001$), sex ($\beta = .21, p < .001$), income ($\beta = .10, p < .001$), and race ($\beta = .09, p < .001$). Respondent's party membership and ideology are not statistically significant predictors of political knowledge. When it comes to media variables, the informational use of television ($\beta = .14, p < .001$), Internet ($\beta = .12, p < .001$), and radio ($\beta = .08, p < .001$) can significantly predict political knowledge. Internet access, the informational use of newspapers and magazine, are not statistically significant predictors.

Concerning political participation, the strongest predictor is also age ($\beta = .24, p < .001$), followed by education ($\beta = .17, p < .001$), income ($\beta = .11, p < .001$), informational use of the Internet ($\beta = .10, p < .001$) and informational use of television ($\beta = .10, p < .001$), magazine ($\beta = .09, p < .001$), and race ($\beta = .08, p < .001$).

Hypothesis 1a and 1b predict that the informational use of the Internet is more strongly associated with political knowledge and participation than is the access to the Internet. It is clear that the informational use of the Internet is indeed more strongly associated with political knowledge and participation than is the access to the Internet,

after control for demographics, political orientation, and traditional media use.

Therefore, hypothesis 1a and 1b are supported.

The second hypothesis states that the usage gap of the Internet is greater than that of the traditional media. Results in Table 4.7 demonstrate that education is a stronger predictor of the informational use of the Internet ($\beta = .21, p < .001$) than that of magazine ($\beta = .15, p < .001$) and television ($\beta = .10, p < .001$), controlling for other demographic variables. There are no statistically significant associations between education and the informational use of newspapers and radio. In other words, the usage gap between high and low SES segments is greater for the Internet than for traditional media. This lent strong support to H-2.

In addition to education, Table 4.7 indicates a greater usage gap of the Internet based on several other demographic variables, compared to the usage gaps of traditional media. For example, sex significantly predicts Internet use ($\beta = .13, p < .001$), but does not predict old media use. This suggests a more significant gendered usage gap among the Internet users than among the traditional media users, even in the general population. Another example is the usage gap between people from different age groups. As shown in Table 4.7, age is the strongest predictor of Internet use ($\beta = -.24, p < .001$), although the relationship is negative. This indicates that the usage gap between young and old people is greater for Internet users than for old media users. These findings provide extra support to the assumption that the usage gap of the Internet is greater than that of the traditional media.

Hypothesis 3a and 3b state that the usage gap of the Internet will be more strongly associated with political knowledge and participation than will the usage gap of traditional media. Table 4.8 shows that the interaction term of education and the informational use of the Internet is the strongest predictor of political knowledge ($\beta = .24, p < .001$), followed by the interactions with television ($\beta = .21, p < .001$), newspapers ($\beta = .11, p < .001$), magazine ($\beta = .10, p < .001$), and radio ($\beta = .08, p < .001$).

As for political participation, the interaction term of the Internet \times education ($\beta = .19, p < .001$) has stronger effects than does the interaction term of television \times education ($\beta = .18, p < .001$) and magazine \times education ($\beta = .16, p < .001$), according to Table 4.9. The interaction term of newspapers and radio do not significantly predict political participation.

These findings indicate that the usage gap of new media is more strongly associated with political knowledge and participation than that of traditional media. Consequently, Hypothesis 3a and 3b are supported.

Hypothesis 4 predicts that people's political knowledge is positively associated with political participation. When analyzed as an independent variable, political knowledge significantly predicts dependent variable, political participation ($\beta = .24, p < .001$), as demonstrated in Table 4.6. These findings indicate that, controlled for demographics and other related variables, political knowledge is a statistically significant mediator of political participation. Hypothesis 4 is therefore supported.

The path model in Figure 4.1 outlines the relationships among Internet access, informational use of the Internet, political knowledge, and political participation. Path coefficients show that the informational use of the Internet has a greater effect on political knowledge ($\beta = .19, p < .001$) and participation ($\beta = .09, p < .001$) than does the access to the Internet ($\beta = .05, p > .05$ and $\beta = .07, p < .05$ respectively). In addition, political knowledge has a strong effect on participation ($\beta = .36, p < .001$). The informational use of the Internet not only has a direct impact on political participation, but has an indirect effect on it through political knowledge. Consequently, Hypothesis-1a, -1b, and -4 are supported by the path model.

Table 4.5

Predictors of Political Knowledge and Participation in Pew National Data

Independent/Dependent Variable	Knowledge	Participation
	β	β
Block 1		
Male	.21***	.04
Age	.36***	.24***
White	.09***	.08***
Education	.23***	.17***
Income	.10***	.11***
Block 2		
Democrat-Republican	-.02	-.02
Liberal-Conservative	.01	-.04
Block 3		
Television	.14***	.10***
Newspapers	.05*	-.02
Magazine	.01	.09***
Radio	.08***	.06*
Block 4		
Internet Access	.07**	.08*
Block 5		
Internet info use	.12***	.10***
R-square	.34	.19
F	59.22***	27.43***

Note. * $p < .05$. ** $p < .01$. *** $p < .001$; $N = 1,491$

Table 4.6

Predictors of Political Participation in Pew National Data

Variable	Model 1	Model 2
	β	β
Block 1		
Male	.04	-.01
Age	.24***	.16***
White	.08***	.06*
Education	.17***	.12***
Income	.11***	.08**
Democrat-Republican	-.02	-.01
Liberal-Conservative	-.04	-.04
Television	.10***	.07**
Newspapers	-.02	-.03
Magazine	.09***	.09***
Radio	.06*	.04
Internet Access	.08*	.06*
Internet info use	.10***	.07*
Block 2		
Knowledge		.24***
R-square	.19	.23
F	27.43***	31.70***

Note. * $p < .05$. ** $p < .01$. *** $p < .001$; $N = 1,491$

Table 4.7

Predictors of Informational Use of Different Forms of Media in Pew National Data

Independent/Dependent Variable	Internet	Television	Newspapers	Magazine	Radio
	β	β	β	β	β
Education	.21***	.10***	.05	.15***	.04
Male	.13***	.07**	.02	.02	.01
Age	-.24***	.07**	.10***	-.03	.01
White	-.08**	-.11***	-.04	-.04	-.01
Income	.12***	.09**	.08**	.15***	.03
R-square	.18	.04	.02	.06	.00
F	64.56***	12.34***	5.83***	19.93***	.96***

Note. ** $p < .01$. *** $p < .001$; $N = 1,491$

Table 4.8

Usage Gaps as Predictors of Political Knowledge in Pew National Data

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
	β	β	β	β	β
Block 1					
Male	.20***	.22***	.23***	.23***	.23***
Age	.36***	.30***	.31***	.32***	.32***
White	.08***	.08***	.07**	.07**	.07**
Education	.20***	.18***	.24***	.26***	.28***
Income	.12***	.13***	.14***	.13***	.14***
Democrat-Republican	-.02	-.02	-.03	-.03	-.03
Liberal-Conservative	.02	.01	.01	.02	.02
Block 2					
Internet \times Education	.24***				
Television \times Education		.21***			
Newspapers \times Education			.11***		
Magazine \times Education				.10***	
Radio \times Education					.08***
R-square	.32	.31	.29	.29	.29
F	86.23***	81.33***	74.57***	74.78***	73.74***

Note. ** $p < .01$. *** $p < .001$; $N = 1,491$

Table 4.9

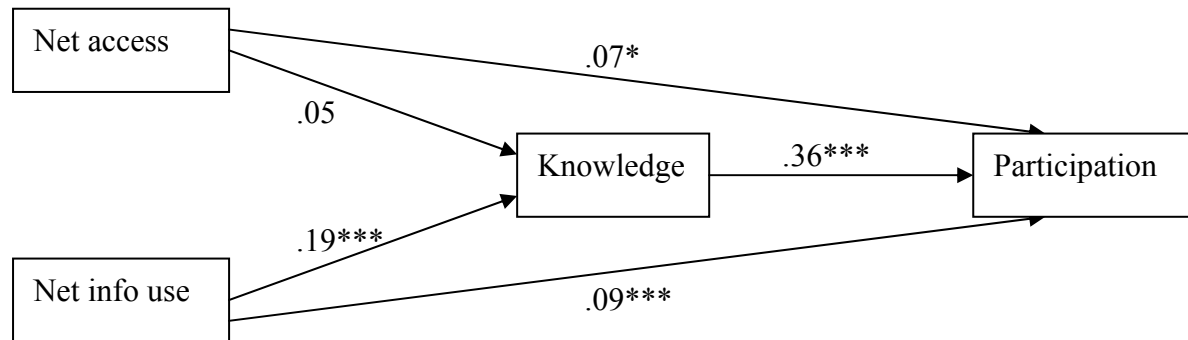
Usage Gaps as Predictors of Political Participation in Pew National Data

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Block 1	β	β	β	β	β
Male	.04	.05*	.06*	.06*	.06*
Age	.23***	.18***	.19***	.20***	.19***
White	.07**	.08**	.07**	.07**	.07**
Education	.16***	.13***	.22***	.17***	.23***
Income	.13***	.14***	.15***	.13***	.15***
Democrat-Republican	-.01	-.01	-.02	-.02	-.02
Liberal-Conservative	-.03	-.04	-.04	-.03	-.03
Block 2					
Internet \times Education	.19***				
Television \times Education		.18***			
Newspapers \times Education			.05		
Magazine \times Education				.16***	
Radio \times Education					.07**
R-square	.17	.16	.15	.16	.15
F	37.46***	35.95***	31.33***	36.13***	32.09***

Note. * $p < .05$. ** $p < .01$. *** $p < .001$; $N = 1,491$

Figure 4.1

Path Model for Pew National Data



Note. * $p < .05$. *** $p < .001$; $N = 1,491$

WSU student data

The predictors of political knowledge are shown in Table 4.10. Interest in national politics and sex are two significant demographic predictors of political knowledge. Students who are more interested in national politics and who are male, are more knowledgeable. The informational use of newspapers ($\beta = .33, p < .001$), of television ($\beta = .29, p < .001$), and of the Internet ($\beta = .13, p < .01$) can significantly predict political knowledge. None of the entertainment use variables is significantly associated with political knowledge.

The access to the Internet is not significantly associated with knowledge among college students. Hypothesis 1a is therefore supported in that the informational use of the Internet ($\beta = .13, p < .01$) is more strongly associated with political knowledge than is the access to the Internet.

Hypothesis 1b predicts that the informational use of the Internet is a stronger predictor of political participation than is the access to the Internet. Table 4.11 shows that interest in local politics ($\beta = .24, p < .001$), entertainment use of newspapers ($\beta = .19, p < .01$), and informational use of newspapers ($\beta = .13, p < .05$) are the three only variables that can significantly predict participation. Neither access to nor informational use of the Internet, can predict respondent's political participation. Hence, hypothesis 1b is rejected.

Regression analysis demonstrated in Table 4.12 confirmed the results of correlation analysis that there is no education-based usage gap among college students. Education predicts none of the media use variables. Sex, however, significantly

predicts student's informational use of the Internet ($\beta = .16, p < .01$). In other words, men have more informational use of the Internet than women, which suggests a gender-based usage gap among the college students. Such gender-based usage gap, however, does not exist among television and newspaper users, according to the non-significant β coefficients in the table.

Hypothesis 2 predicts that the usage gap of the Internet is greater than the usage gap of traditional media. Although there is no education-based usage gap in this student sample, the gender-based usage gap of the Internet is indeed greater and more significant than that of newspapers and television. Consequently, this hypothesis is supported.

Hypothesis 3a and 3b predict that the usage gap of the Internet will be more strongly associated with political knowledge and participation than will the usage gap of traditional media. When operationalized as an interaction between education and informational use of various media, neither the usage gap of the Internet and nor that of the traditional media can significantly predict political knowledge and participation (Table was omitted). When taken into account as an interaction between sex and informational use of media, the gendered usage gap of the Internet ($\beta = .12, p < .05$) has a weaker relationship with knowledge than do that of television ($\beta = .59, p < .001$) and newspapers ($\beta = .63, p < .001$), controlling for demographics, political orientation, and political interests (see Table 4.13). This suggests that the difference in knowledge between men and women Internet users is smaller than that between men and women newspaper users as well as television users.

Regarding political participation, the interaction term between informational use of newspapers and sex is the only interaction term that significantly predicts political participation ($\beta = .36, p < .01$), as shown in Table 4.14. The gender-based usage gap of television and the Internet do not have a statistically significant relationship with political participation. Consequently, hypothesis 3a and 3b are rejected.

Hypothesis 4 predicts that political knowledge is positively associated with political participation. As shown in Table 4.11, knowledge does not have a statistically significant effect on political participation. Therefore, the hypothesis is rejected.

A path model was drawn in Figure 4.2 to simplify the relationships hypothesized in H-1a, H-1b, and H-4. It demonstrates that the informational use of the Internet has a greater effect on political knowledge ($\beta = .24, p < .001$) than does the access to the Internet ($\beta = .01, p > .05$). All other path coefficients, however, are non-significant. This suggests that H-1a is supported whereas the other two hypotheses are rejected.

Table 4.10

Predictors of Political Knowledge in WSU Student Data

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Block 1	β	β	β	β	β	β	β
Male	.20***	.20***	.20***	.21***	.21***	.19***	.21***
Age	.05	.07	.08	.07	.07	.08	.07
Education	.08	.06	.08	.06	.05	.05	.05
Income	.09	.07	.06	.07	.08	.08	.07
Democrat-Republican	-.06	-.08	-.07	-.08	-.08	-.07	-.08
Liberal-Conservative	-.04	-.03	-.02	-.02	-.03	-.03	-.02
National interest	.34***	.48***	.38***	.48***	.48***	.46***	.48***
Local interest	-.13*	-.08	-.11*	-.08	-.08	-.08	-.08
Block 2							
Newspapers info	.33***						
Newspapers entertain		-.05					
Television info			.29***				
Television entertain				-.01			
Internet access					-.04		
Internet Info						.13**	
Internet entertain							-.01
R-square	.38	.31	.36	.31	.31	.32	.31
F	21.22***	15.22***	20.66***	15.09***	15.18***	16.27***	15.09***

Note. * $p < .05$. ** $p < .01$. *** $p < .001$; $N=320$

Table 4.11

Predictors of Political Participation in WSU Student Data

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	β	β	β	β	β	β	β	β
Block 1								
Male	-.02	.02	-.02	-.02	-.02	-.03	-.04	-.01
Age	-.02	.00	-.01	.00	-.01	-.01	.01	-.01
Education	-.01	-.02	-.01	-.02	-.02	-.03	-.02	-.02
Income	.04	.04	.03	.03	.04	.03	.03	.03
Democrat-Republican	.07	.07	.07	.07	.07	.07	.06	.06
Liberal-Conservative	-.05	-.02	-.04	-.04	-.05	-.05	-.03	-.04
National interest	.01	.06	.04	.06	.07	.05	.06	.08
Local interest	.22***	.24***	.24***	.24***	.24***	.24***	.26***	.24***
Block 2								
Newspapers info	.13*							
Newspapers entertain		.19**						
Television info			.07					
Television entertain				.00				
Internet access					-.07			
Internet Info						.09		
Internet entertain							.10	
Knowledge								-.04
R-square	.09	.12	.09	.08	.09	.09	.09	.08
F	3.56***	4.47***	3.19***	3.03**	3.19***	3.31***	3.43***	3.06**

Note. * $p < .05$. ** $p < .01$. *** $p < .001$; $N=320$

Table 4.12

Predictors of Informational Use of Different Forms of Media in WSU Student Data

Independent/Dependent Variable	Internet	Television	Newspapers
	β	β	β
Education	.07	-.07	-.08
Male	.16**	.06	.06
Age	-.04	-.02	.08
Income	-.01	.12*	.05
R-square	.03	.02	.02
F	2.36	1.96	1.47

Note. * $p < .05$. ** $p < .01$; $N = 320$

Table 4.13

Usage Gaps as Predictors of Political Knowledge in WSU Student Data

Variable	Model 1	Model 2	Model 3
Block 1	β	β	β
Male	.24***	.74***	.78***
Age	.07	.09	.05
Education	.05	.07	.08
Income	.08	.05	.08
Democrat-Republican	-.07	-.08	-.07
Liberal-Conservative	-.03	-.01	-.03
National interest	.46***	.39***	.35***
Local interest	-.08	-.11*	-.13*
Block 2			
Internet \times Sex	.12*		
Television \times Sex		.59***	
Newspapers \times Sex			.63***
R-square	.32	.32	.37
F	16.00***	15.05***	20.42***

Note. * $p < .05$. ** $p < .01$. *** $p < .001$; $N=320$

Table 4.14

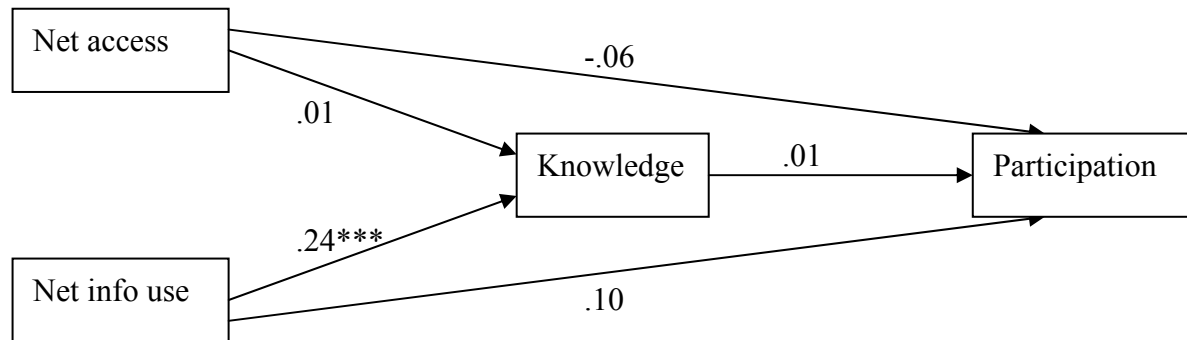
Usage Gaps as Predictors of Political Participation in WSU Student Data

Variable	Model 1	Model 2	Model 3
	β	β	β
Block 1			
Male	.00	.15	.30*
Age	.00	.00	-.02
Education	-.03	-.01	-.01
Income	.03	.02	.04
Democrat-Republican	.07	.07	.07
Liberal-Conservative	-.05	-.04	-.05*
National interest	.05	.03	-.01
Local interest	.24***	.23***	.22***
Block 2			
Internet \times Sex	.10		
Television \times Sex		.19	
Newspapers \times Sex			.36**
R-square	.09	.09	.10
F	3.39***	3.31***	3.93***

Note. * $p < .05$. ** $p < .01$. *** $p < .001$; $N = 320$

Figure 4.2

Path Model for WSU Student Data



Note. $^{***}p < .001$; $N = 1,491$

CHAPTER FIVE

DISCUSSION

This chapter discusses the theoretical contributions and implications of the present research. It also outlines the limitations of this study and suggests directions for future research.

Discussion

Based on two datasets of different natures, the present research provides insights into the political effects of the digital divide. Specifically, this study examines the different effects of Internet access and use on political knowledge and participation, compares the usage gaps of new media and old media and their differential impacts on knowledge and participation, and investigates the mediating role of political knowledge between the digital divide and political participation. A summary of the test of hypotheses with different datasets was presented in Table 5.1.

Table 5.1

Summary of the Test of Hypotheses

Hypotheses	National data	Student data
H-1a: The informational use of new media is more strongly associated with political knowledge than the access to new media.	Supported	Supported
H-1b: The informational use of new media is more strongly associated with political participation than the access to new media.	Supported	Not supported
H-2: The usage gap of new media is greater than the usage gap of traditional media.	Supported	Supported
H-3a: The usage gap of new media is more strongly associated with political knowledge than is the usage gap of traditional media.	Supported	Not supported
H-3b: The usage gap of new media is more strongly associated with political participation than is the usage gap of traditional media.	Supported	Not supported
H-4: People's political knowledge is positively associated with political participation.	Supported	Not supported

The impacts of Internet access and use

This study reveals that while both Internet access and use predict political knowledge and participation, the informational use of the Internet is more important than is access to the Internet. Access does indeed influence knowledge, but it is only the beginning of the process and it fails to capture the specific nature of the relationship between people and the Internet. Since people who have the same access to the Internet may use it in very different ways, the actual use patterns of the use of Internet will contribute more to people's knowledge than will simple access to the Internet. This is consistent with the findings regarding the importance of content versus form of traditional mass media. Similar to what has been found for traditional media, the content Internet users access is a more significant predictor of knowledge and participation than is Internet access per se.

This pattern, however, has not been found for political participation in the student sample. While the informational use of the Internet is more strongly associated with political knowledge than is the access to the Internet, neither of them predict political participation. A possible reason is that the political participation of college students is more likely influenced by their living arrangements and campus activities, and less likely affected by their media use, including their use of the Internet.

The differential usage gaps of new media and old media

Although it is found that the usage gap is more important than the access to new media, this is not new. The same pattern can be applied to traditional media. It is true, for example, that the actual use of television is more important than the access to

television in predicting knowledge and participation. Therefore, a more significant question is how the usage gaps of new media and old media are different and, why the usage gap of new media attracts much more attention than that of old media and have become a field of study, which is known as the digital divide.

The present study shows that the usage gap is larger for the Internet than for traditional media. Specifically, there is a greater education-based usage gap of the Internet than of the traditional media in the general population. The higher the individual's education, the higher his or her level of informational use. This relationship is stronger for Internet users than for the traditional media users, resulting in a greater usage gap on the Internet.

Usage gaps exist even in such a homogeneous group as college students. While no education-based usage gap has been found, data analysis of student sample demonstrates that there is a gender-based usage gap among the members of this group. Men tend to have more informational use of the Internet than women. Again, this relationship is stronger for Internet users than for newspapers or television users.

These findings illustrate that the usage gap of the Internet exists not only in the general population, but in specific social groups such as college students. More importantly, the usage gap of the Internet is greater than that of the traditional media. Due to the heterogeneous nature and expansive freedom of the Internet, the use patterns of the Internet are less restricted by the form of media but more influenced by the social background of the users.

The impacts of the differential usage gaps of new media and old media

Since the usage gap of the Internet is greater than that of the traditional media, a subsequent question is how such differential usage gaps influence political knowledge and participation differently. Pew national data show that the education-based usage gap of the Internet has a slightly greater effect on both political knowledge and participation than that of traditional media. WSU student data, however, produce different findings. Among college students, the interaction term of gender \times informational use of newspapers is more strongly associated with knowledge and participation than the interaction term of gender \times informational use of the Internet. This is because that, in this student sample, the informational use of the newspapers has a much stronger effect on knowledge and participation than the informational use of the Internet, as shown in Table 4.10. Interestingly, the net effect among an Internet-saturated population is not to exacerbate Internet-based gaps, but instead to amplify traditional media gaps. Internet use may drive heavy users to traditional media for supplemental and confirmatory information, which augments the effect of traditional media use on knowledge. As a result, the disparities in knowledge and participation between male and female with different newspaper reading are greater than those between male and female Internet users. To sum up, the education-based usage gap of the Internet has a greater effect on knowledge and participation in the general population, whereas the gender-based usage gap of the Internet has a weaker impact than that of traditional media in the student sample.

Political knowledge as a mediator

The mediating role of political knowledge in the relationship between the digital divide and political participation is supported by the Pew national sample. Both Internet access and use can significantly predict political knowledge. Knowledge, in addition, can predict people's political participation. This hypothesis, however, is not supported by the WSU student data. While the informational use of the Internet can predict political knowledge, there is no significant relationship between knowledge and participation. This might be due to the fact that other factors could be more important predictors of participation than knowledge, such as their living arrangements and social activities like sports clubs, etc.

Implications

The present study reveals that while both Internet access and use predict political knowledge, the informational use of the Internet is more important than is access to the Internet. The implication of this finding for the digital divide literature is that the definition of the digital divide should be reconsidered. The original definition as “the divide between those with access to new technologies and those without” (NTIA, 1999: xiii) need to be updated in light of the present study's findings. The Benton Foundation (2001), for example, defined the digital divide as the “gap between those who can effectively *use* new information and communication tools, such as the Internet, and those who cannot” (p. 1), which is supported by the findings of the present study. Consequently, the term “digital divide”, as Gunkel (2003: 504) argued,

“is originally and persistently plural.” On the one hand, there is a constellation of digital divides that represent various social, economic, and technological inequalities and discrepancies. On the other hand, this term is “a moving target” (Compaine, 2001: 5) which changes denotations at different times and in different contexts.

Another finding is that the usage gap is larger for the Internet than for traditional media. The stronger association between education or sex and Internet use justifies the necessity of the digital divide research. People have long been using traditional media in different ways. When it comes to the Internet, however, the usage gap has been labeled the “digital divide” and has been studied as a field. There is not an “analog divide” research though. This is not only because the new media are digitally different from the old media, but because the new media exacerbate the status-reinforcing qualities of traditional media. As demonstrated by the regression analyses of both datasets, the usage gap is more pronounced for the Internet than for traditional media, so that the “digital divide,” particularly “the second digital divide,” deserves more attention than the “analog divide”.

So what? The final contribution of the present research is to provide an answer to this question. As Selwyn (2004) noted, much contemporary debate over the digital divide focuses solely on the means, rather than the ends, of the use of information and communication technology (ICT). The consequence of accessing and using ICT remains a “fundamental yet often unvoiced element of the digital divide debate” (Selwyn, 2004: 349). Combining the questions of access to and use of ICT with the impact and consequences of interaction with ICT, the present study not only found

that the use of the Internet is more important than the access to the Internet in predicting political knowledge and participation, but also discovered that, among the general population, the usage gap of the Internet is more strongly associated with political knowledge and participation than that of traditional media. The digital divide *does* matter in the sense that it accentuates and extends gaps in political knowledge and participation that have long been observed to result from traditional media use. As political knowledge and political participation are critical to the democracy, the findings here empirically support the assumption that the digital divide has serious implications for democratic institutions.

It should be noted, however, that among an Internet-saturated population (which may predict future effects for the general population), Internet-based differences are attenuated relative to the general population, but the effects of traditional media gaps become more pronounced. The Internet may serve as a filter of information. Students who seek further information through traditional media because of something they found on the Internet would be more knowledgeable and politically active than those who do not. An implication of this finding is that, when Internet becomes saturated in the population, the effects of certain form of digital divide (e.g., gendered usage gap) would level off to some extent, and the effects of structural disparities in traditional media use would become more pronounced. Consequently, the endeavors of bridging the digital divide at the access level can indeed make a difference in the political effects of the digital divide. To reduce the negative social consequences of the digital

divide, government and organizations should continue to work on narrowing the digital divide at both the access level and the usage level.

Limitations

The present research has several limitations. The first weakness is regarding the measurement of a few constructs. Political knowledge and participation, for instance, has only four items in the Pew dataset. More questions of different types of political knowledge, say, candidate issue stance, party issue stance, political system knowledge, current affairs knowledge, etc., could significantly improve the measurement of political knowledge. Similarly, other questions than people's participation in campaign activities, including participating in demonstrations, petitions, and local reform actions could be asked to increase the reliability of the political participation measure. Moreover, many of the Pew measures have low item-total correlations (see Table 3.3, 3.5, and 3.6), which may possibly lead to low alphas.

In addition, the informational use of newspapers, magazine, and radio was measured by single item in this Pew national data. More items of informational use of traditional media should definitely be asked to increase the reliability of those measures.

As for WSU student data, a significant weakness is the measure of the informational use of the Internet. The scale measuring this construct has a Cronbach's alpha as low as .48. Although the four items of the scale come from previous studies (Shah et al., 2001; Shah et al., 2005), they were not able to achieve an acceptable

internal consistency. This measurement flaw might contribute to the weaker effects of the informational use of the Internet on political knowledge and participation. It also undermines the power of the data to test hypotheses in this study. More items asking various aspects of informational use of the Internet should be included to improve the measures of this important construct.

Moreover, different measures of variables were used in the WSU student data. This made the results from these two datasets less comparable.

The second weakness is that the examination of the values of β coefficients was based on the absolute values of β coefficients, rather than on the statistical analysis of their differences. Some of the differences are small (see Table 4.5, 4.8, 4.9) which are subject to questions.

Additionally, the problem of multicollinearity may exist in some regression analyses with interaction terms in the models. The inflation of the β coefficients of sex in Table 4.13, for example, could be caused by interaction terms in block 2. Solution might be removing the sex or education variable from the equation to avoid the problem of multicollinearity.

Another limitation is that WSU student sample was not random sample. The strengths of relationships obtained from statistical analysis can only be used to understand the relationships of variables within that sample. The results from this non-random sample cannot be generalized to any other population.

Finally, the effects demonstrated here are correlations rather than causal relationships. Although regression analysis and path models indicate a direction from

Internet access/use to political knowledge and participation, a causal relationship has to be built through more rigorous statistical analysis, such as Structural Equation Modeling preferably using panel data. Future studies are encouraged to further examine the causal relationships between the digital divide, political knowledge, and political participation.

Future research

This study explores the political effects of the digital divide, a “fundamental yet often unvoiced element of the digital divide debate” (Selwyn, 2004: 349). Results not only show that the use of the Internet is more important than the access to the Internet in predicting political knowledge and participation, but also demonstrate that the usage gap of the Internet is associated with a greater knowledge gap and greater disparities in participation than is the usage gap of traditional media. This study not only theoretically links the research of digital divide, knowledge gap, and political participation, but also provides some empirical support to a frequently stated assumption that the digital divide has serious implications for democratic institutions.

The present research, however, only taps a small fraction of the complex model of the political effects of the digital divide. New dimensions of the mechanism warrant further scrutiny. The nature of knowledge, for example, could be an even more important factor that should be included in the model. As knowledge is socially constructed, and media (both new and old) are professional manufacturers and disseminators of such knowledge, people’s different use patterns of media might have

some impacts on their acquisition, perception, and interpretation of socially constructed knowledge. Whether new media and old media construct knowledge differently, and whether the usage gaps of new media and old media have different effects on people's acquisition and understanding of knowledge, and their subsequent political attitudes and behaviors, are all interesting questions for future research.

Other social psychological factors could also be considered to facilitate people's understanding of the political effects of the digital divide. Internet or computer self-efficacy, for instance, is a potential variable that could play a role in the process. Self-efficacy refers to one's belief in the ability to perform a specific task (Bandura, 1997). Based on this concept, the Internet or computer self-efficacy is defined as one's general belief that he/she is capable of putting computer technologies to use (Compeau & Higgins, 1995; Vankatesh & Davis, 1996). As Internet or computer self-efficacy is influenced by people's experience of such new media technologies (Martocchio & Dulebohn, 1994; Potosky, 2002), and is influencing people's online and computing behavior (Fenech, 1998; Hartzel, 2003; Igarria & Ivori, 1995; Vankatesh & Davis, 1996), the effects of the digital divide on political knowledge and participation could be mediated by people's Internet self-efficacy. In other words, differential access to and use of the Internet may contribute to different levels of Internet self-efficacy, which in turn may lead to different gains in knowledge and different levels of participation, especially online participation.

Besides political effects, future research would continue to examine the social consequences of various dimensions of the digital divide. Possible aspects of the

consequences would include people's economic production, social interaction, cultural identification, and other facets of individuals' and communities' "social quality" (Berman & Phillips, 2001; Selwyn, 2004).

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APPENDIX A

HUMAN SUBJECTS APPROVAL FORM

MEMORANDUM

TO: Lu Wei
Communication, WSU Pullman (2520)

FROM: Malathi Jandhyala (for) Kris Miller, Chair, WSU Institutional Review Board (3005) *MEJ*

DATE: 2 April 2007

SUBJECT: Approved Human Subjects Protocol - New Protocol

Your Human Subjects Review Summary Form and additional information provided for the proposal titled "*The Political Effects of the Digital Divide*," IRB File Number **9715-a** was reviewed for the protection of the subjects participating in the study. Based on the information received from you, the WSU-IRB **approved** your human subjects protocol on **2 April 2007**.

IRB approval indicates that the study protocol as presented in the Human Subjects Form by the investigator, is designed to adequately protect the subjects participating in the study. This approval does not relieve the investigator from the responsibility of providing continuing attention to ethical considerations involved in the utilization of human subjects participating in the study.

This approval expires on 31 March 2008. If any significant changes are made to the study protocol you must notify the IRB before implementation. Request for modification forms are available online at <http://www.ogrd.wsu.edu/Forms.asp>.

In accordance with federal regulations, this approval letter and a copy of the approved protocol must be kept with any copies of signed consent forms by the principal investigator for THREE years after completion of the project.

Washington State University is covered under Human Subjects Assurance Number FWA00002946 which is on file with the Office for Human Research Protections.

If you have questions, please contact the Institutional Review Board at (509) 335-7183. Any revised materials can be mailed to the Office of Research Assurances (Campus Zip 3005), faxed to (509) 335-6410, or in some cases by electronic mail, to irb@mail.wsu.edu.

Review Type: NEW
Review Category: XMT
Date Received: 30 March 2007

OGRD No.: NF
Agency: NA

APPENDIX B

PEW NATIONAL SURVEY ITEMS (2004)

Pew national survey items (2004)

The informational use of the Internet (4 items, alpha = .78)

How often, if ever, do you learn something about the PRESIDENTIAL CAMPAIGN or the CANDIDATES from ... — regularly, sometimes, hardly ever, or never?

1. The Internet
2. The news pages of internet service providers such as AOL News or Yahoo News
3. The web sites of news organizations such as CNN.com, the New York Times.com, or your local newspaper's or TV station's websites
4. Other kinds of online news magazine and opinion sites such as Slate.com or the National Review online

The informational use of traditional media (TV info use, 8 items, alpha = .66)

Now I'd like to ask you about some specific ways in which you might be getting news about the presidential campaign. For each item that I read, please tell me how often, if ever, you LEARN SOMETHING about the PRESIDENTIAL CAMPAIGN or the CANDIDATES from this source. (First,) how often, if ever, do you LEARN SOMETHING about the PRESIDENTIAL CAMPAIGN or the CANDIDATES from... — regularly, sometimes, hardly ever, or never?

1. The local TV news about your viewing area
2. The national nightly network news on CBS, ABC and NBC
3. Cable news networks such as CNN, MSNBC and the FOX cable news channel
4. C-SPAN
5. Public television shows such as The NewsHour with Jim Lehrer and Washington Week in Review
6. The morning television shows such as The Today Show and Good Morning America
7. Political talk shows on cable TV, such as CNN's Crossfire and CNBC's Hardball
8. The Sunday morning network talk shows, such as ABC's This Week, and NBC's Meet the Press
9. Talk radio shows
10. News magazines such as Time, U.S. News, and Newsweek
11. Your daily newspaper

Political knowledge (4 items, alpha = .71)

Now I want to ask you a few questions about some things that have been in the news about the presidential campaign recently. Not everyone will have heard of them. As I read each item, tell me if you have heard A LOT about it, SOMETHING about it, or NEVER HEARD about it.

1. Al Gore's endorsement of Howard Dean
2. Howard Dean's comment about wanting to win the votes of "guys with Confederate flags in their pickup trucks"

Do you happen to know which of the presidential candidates

1. Served as an Army general (correct=Wesley Clark)
2. Served as the Majority Leader in the House of Representatives (correct=Richard Gephardt)

Political participation (4 items, alpha = .64)

1. Have you ever contributed money to a candidate running for public office?
2. Have you ever contacted any elected official?
3. Have you ever joined an organization in support of a particular cause?
4. Have you ever attended a campaign event?

APPENDIX C

WSU COLLEGE STUDENT SURVEY ITEMS (2007)

Washington State University college student survey items (2007)

Internet access (3 items, alpha = .62)

1. How easy or difficult is it for you to access the Internet at home?
2. How easy or difficult is it for you to access the Internet at other places, such as public library and community center?
3. Overall, how easy or difficult is it for you to access the Internet?

The informational use of the Internet (4 items, alpha = .48)

1. How many days in the past week did you visit a news Web site?
2. How many days in the past week did you visit the Web site of a government agency?
3. How many days in the past week did you visit the Web site of a social group or cause?
4. How many days in the past week did you visit the Web site of a politician?

The entertainment use of the Internet (7 items, alpha = .63)

1. How many days in the past week did you send or read e-mail?
2. How many days in the past week did you surf the Web for fun?
3. How many days in the past week did you use an online social networking site like MySpace, Facebook or Friendster?
4. How many days in the past week did you play online games?
5. How many days in the past week did you listen to music online at a website?
6. How many days in the past week did you download other files such as games, videos, or pictures?
7. How many days in the past week did you chat in a chat room or in an online discussion?

The informational use of newspapers (4 items, alpha = .82)

1. How many days in the past week did you read articles about national government and politics in newspapers?
2. How many days in the past week did you read articles about local government and politics in newspapers?
3. How much attention do you pay to newspaper articles about national government and politics?
4. How much attention do you pay to newspaper articles about local government and politics?

The informational use of television (4 items, alpha = .77)

1. How many days in the past week did you watch stories about national government and politics on television?
2. How many days in the past week did you watch stories about local government and politics on television?
3. How much attention do you pay to television stories about national government and politics?
4. How much attention do you pay to television stories about local government and politics?

The entertainment use of newspapers (6 items, alpha = .78)

1. How many days in the past week did you read food section in newspapers?
2. How many days in the past week did you read lifestyle section in newspapers?
3. How many days in the past week did you read magazine section in newspapers?
4. How much attention do you pay to food section in newspapers?
5. How much attention do you pay to lifestyle section in newspapers?
6. How much attention do you pay to magazine section in newspapers?

The entertainment use of television (6 items, alpha = .79)

1. How many days in the past week did you watch drama on television?
2. How many days in the past week did you watch sitcoms on television?
3. How many days in the past week did you watch reality shows on television?
4. How much attention do you pay to drama on television?
5. How much attention do you pay to sitcoms on television?
6. How much attention do you pay to reality shows on television?

Political knowledge (12 items, alpha = .79)

1. Who is the current U.S. Vice President?
2. Who is the current U.S. Secretary of Defense?
3. Who is the current Chief Justice of the Supreme Court?
4. Who is the current U.S. Attorney General?
5. Which party currently has the most members in the U.S. House of Representatives?
6. Which party currently has the most members in the U.S. Senate?
7. Do you happen to know whether President Bush agree or disagree to set a deadline for withdrawing U.S. troops from Iraq?
8. What is the name of the army medical center where war-wounded soldiers were poorly treated?
9. What is the name of the U.S. official who has been asked by some to resign because of his alleged involvement in the firings of eight U.S. attorneys?

10. What is the name of the person who won an academy award for his film about global warming?
11. What is the name of the presidential candidate whose wife is battling recurrence of cancer?
12. What is the name of the 2008 presidential hopeful who was once mayor of New York City?

Political participation (18 items, alpha = .75)

1. Have you attended a political meeting or rally?
2. Have you participated in self-help program?
3. Have you signed a petition?
4. Have you participated in demonstrations, boycotts, or marches?
5. Have you participated in ethnic, nationality, or civil rights organization?
6. Have you participated in hobby, investment, or garden club?
7. Have you participated in service or fraternal organization?
8. Have you participated in organization affiliated with religion?
9. Have you served as an officer or on a committee?
10. Have you participated in sports club, league, or outdoor activity club?
11. Have you participated in professional, trade, farm or business association?
12. Have you belonged to any group that took local action for reform?
13. Have you participated in parent association or other school support group?
14. Have you participated in political group?
15. Have you belonged to other kinds of clubs or organizations?
16. Have you participated in youth organization?
17. Have you participated in seniors' groups?
18. Have you participated in charity or social welfare organization?

APPENDIX D

QUESTIONNAIRE FOR WSU COLLEGE STUDENT SURVEY (2007)

Media Use and Political Participation in the Palouse

Dear Participant:

We are asking for your help with a study of media use and political participation in the Palouse area. You have been chosen for this survey as part of a sample of students at Washington State University. Your response is very important for us to get accurate results.

Your response is completely anonymous and will be released only as summaries in which no individual's answers can be identified. Your participation is entirely voluntary, and you may withdraw from participation at any time. However, we would greatly appreciate your help in making this a meaningful study about media use and political participation in the Palouse.

If you have any questions or comments about this study, we would be happy to talk with you. We can be reached at (509)339-3111 or rogerwei@wsu.edu. If you have questions about the rights of human research subjects, please contact the WSU Institutional Review Board at (509)335-9661. This project has been reviewed and approved for human participation by the WSU IRB.

Thank you very much for helping with this important study.

Sincerely,



Lu Wei
Ph.D Candidate
Edward R. Murrow School of Communication
Washington State University
P.O. Box 642520
Pullman, WA 99164-2520

1. How easy or difficult is it for you to access the Internet

	Very difficult				Very easy
	1	2	3	4	5
	▼	▼	▼	▼	▼
A. at home?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. at work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C. at other places, such as public library and community center?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D. Overall, how easy or difficult is it for you to access the Internet?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. How many days in the past week did you use the Internet in each of the following ways?

- A. Visited a news Web site (e.g., CNN.com) days
- B. Visited the Web site of a government agency days
- C. Visited the Web site of a social group or cause..... days
- D. Visited the Web site of a politician..... days
- E. Sent or read e-mail..... days
- F. Surfing the Web for fun days
- G. Used an online social networking site like MySpace, Facebook or Friendster... days
- H. Played online games days
- I. Listened to music online at a website days
- J. Downloaded other files such as games, videos, or pictures days
- K. Chatted in a chat room or in an online discussion days

3. How many days in the past week did you read newspapers for each of the following types of stories?

- A. Read articles about national government and politics days
- B. Read articles about local government and politics days
- C. Read food section days
- D. Read lifestyle section days
- E. Read magazine section days

4. How many days in the past week did you watch television in each of the following types of stories?

- A. Watched stories about national government and politics days
- B. Watched stories about local government and politics days
- C. Watched drama days
- D. Watched sitcoms days
- E. Watched reality shows days

5. When you come across the following kinds of media content, how much attention do you pay to them?

	Very little attention	1	2	3	4	5	Very close attention
	▼	▼	▼	▼	▼	▼	
A. newspaper articles about national government and politics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
B. newspaper articles about local government and politics.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
C. food section in newspapers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
D. lifestyle section in newspapers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E. magazine section in newspapers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
F. television stories about national government and politics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
G. television stories about local government and politics.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
H. drama on television	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I. sitcoms on television	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
J. reality shows on television	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

6. Next, I would like to ask you a few short “quiz-type” questions about national political system. If you don’t know or are not sure, just leave it blank and skip to the next question.

- A. Who is the current U.S. Vice President?
- B. Who is the current U.S. Secretary of Defense?
- C. Who is the current Chief Justice of the Supreme Court?
- D. Who is the current U.S. Attorney General?
- E. Which party currently has the most members in the U.S. House of Representatives?
- F. Which party currently has the most members in the U.S. Senate? ...

7. Next, I would like to ask you a few questions about current national political affairs.

- A. 1. Do you happen to know whether President Bush agree or disagree to set a deadline for withdrawing U.S. troops from Iraq?
- ☐ Agree
- ☐ Disagree
- ☐ Don't know
2. Do you agree or disagree to set a deadline for withdrawal?
- ☐ Agree
- ☐ Disagree
- ☐ Don't know
- B. 1. What is the name of the army medical center where war-wounded soldiers were poorly treated?
- _____ (Write name on the line)
2. Do you think veterans care is a big problem or it is OK the way it is?
- ☐ Big problem
- ☐ OK the way it is
- ☐ Don't know
- C. 1. What is the name of the U.S. official who has been asked by some to resign because of his alleged involvement in the firings of eight U.S. attorneys?
- _____ (Write name on the line)
2. Do you support or oppose the proposed resignation?
- ☐ Support
- ☐ Oppose
- ☐ Don't know
- D. 1. What is the name of the person who won an academy award for his film about global warming?
- _____ (Write name on the line)
2. Do you agree or disagree that global warming is a "true planetary emergency"?
- ☐ Agree
- ☐ Disagree
- ☐ Don't know
- E. 1. What is the name of the presidential candidate whose wife is battling recurrence of cancer?
- _____ (Write name on the line)

- F. 1. What is the name of the 2008 presidential hopeful who was once mayor of New York City?

_____ (Write name on the line)

8. **Now, a few questions about your participation in political or community life. Please tell me whether or not you have participated in the each of the following activities in the past 12 months.**

	YES	NO
	▼	▼
A. Have you attended a political meeting or rally?	<input type="checkbox"/>	<input type="checkbox"/>
B. Have you participated in self-help program?	<input type="checkbox"/>	<input type="checkbox"/>
C. Have you signed a petition?	<input type="checkbox"/>	<input type="checkbox"/>
D. Have you participated in demonstrations, boycotts, or marches?	<input type="checkbox"/>	<input type="checkbox"/>
E. Have you participated in ethnic, nationality, or civil rights organization?	<input type="checkbox"/>	<input type="checkbox"/>
F. Have you participated in hobby, investment, or garden club?	<input type="checkbox"/>	<input type="checkbox"/>
G. Have you participated in service or fraternal organization?	<input type="checkbox"/>	<input type="checkbox"/>
H. Have you participated in organization affiliated with religion?	<input type="checkbox"/>	<input type="checkbox"/>
I. Have you served as an officer or on a committee?	<input type="checkbox"/>	<input type="checkbox"/>
J. Have you involved in group that meets over the Internet?	<input type="checkbox"/>	<input type="checkbox"/>
K. Have you participated in sports club, league, or outdoor activity club?	<input type="checkbox"/>	<input type="checkbox"/>
L. Have you participated in professional, trade, farm or business association?	<input type="checkbox"/>	<input type="checkbox"/>
M. Have you participated in veterans' group?	<input type="checkbox"/>	<input type="checkbox"/>
N. Have you belonged to any group that took local action for reform?	<input type="checkbox"/>	<input type="checkbox"/>
O. Have you participated in parent association or other school support group?	<input type="checkbox"/>	<input type="checkbox"/>
P. Have you participated in political group?	<input type="checkbox"/>	<input type="checkbox"/>
Q. Have you belonged to other kinds of clubs or organizations?	<input type="checkbox"/>	<input type="checkbox"/>
R. Have you participated in youth organization?	<input type="checkbox"/>	<input type="checkbox"/>
S. Have you participated in seniors' groups?	<input type="checkbox"/>	<input type="checkbox"/>
T. Have you participated in charity or social welfare organization?	<input type="checkbox"/>	<input type="checkbox"/>
U. Have you participated in labor union?.....	<input type="checkbox"/>	<input type="checkbox"/>
V. Did you vote in the 2004 Presidential elections?	<input type="checkbox"/>	<input type="checkbox"/>
W. Do you plan to vote in the 2008 Presidential elections?	<input type="checkbox"/>	<input type="checkbox"/>

9. **Thinking about your local community, how interested are you in local community politics and local community affairs?**

- ☐ Very interested
- ☐ Fairly interested
- ☐ Slightly interested
- ☐ Not interested
- ☐ Don't know

10. How interested are you in national politics and national affairs?

- ☐ Very interested
- ☐ Fairly interested
- ☐ Slightly interested
- ☐ Not interested
- ☐ Don't know

Finally, a few questions about yourself.

11. First, how would you describe your political views?

- ☐ Very conservative
- ☐ Conservative
- ☐ Moderate
- ☐ Liberal
- ☐ Very liberal
- ☐ Don't know

12. Next, do you consider yourself a Democrat, a Republican, an Independent, or what?

- ☐ Democrat
- ☐ Republican
- ☐ Independent
- ☐ Other _____ (SPECIFY)
- ☐ Don't know

13. Would you say you lean towards the Democrats, the Republicans, or the Independents?

- ☐ Lean towards democrat
- ☐ Lean towards republican
- ☐ Lean towards independent
- ☐ Don't know

14. Next, I'd like to know how old you were on your last birthday?

(years)

15. What is your gender?

- ☐ Male
- ☐ Female

16. How many years of formal education you have completed? For example, a high school graduate has completed 12 years of education, a college graduate with a bachelor's degree has completed 16 years, a Master's degree is 18 years, and a Ph.D. or M.D. is 20 years.

(years)

17. Finally, what was the approximate annual income for your household, before taxes, last year, in 2006?

- ☐ Less than \$10,000
- ☐ \$10- to under \$20,000
- ☐ \$20- to under \$30,000
- ☐ \$30- to under \$40,000
- ☐ \$40- to under \$50,000
- ☐ \$50- to under \$75,000
- ☐ \$75- to under \$100,000
- ☐ \$100 to under \$150,000
- ☐ \$150,000 or more
- ☐ Don't know

That's all the questions we have. Thank you very much for your cooperation!