SOCIAL CAPITAL IN THE PRODUCTION GAP:
SOCIAL NETWORKING SERVICES AND THEIR TRANSFORMATIVE ROLE IN
CIVIC ENGAGEMENT

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DEDICATIONS

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Chapter One

INTRODUCTION

I intend to research the role of social networking services (SNS) in influencing civic engagement in the United States.¹ This dissertation empirically examines the determinants of social networking service usage, evaluating whether this collection of factors is separate from those influencing internet use or group affiliation. The effect of social networking intensity on attitudinal factors including generalized trust and external political efficacy is evaluated alongside demographic and association-level factors. The work concludes with an inquiry into the variables contributing to social capital modification. Social networking intensity reaches significance as a positive determinant of political efficacy and social capital; respondents perceive themselves to be more efficacious and possess greater amounts of social capital when social networking usage is increased. Social networking represents a possible solution to the digital divide and the production gap, proposed to be systemic blocks to civic engagement.

This dissertation expands upon previous social networking research, which focused on the relationship status of users (Young, Dutta, and Dommety, 2009), established a typology of social networking services (Richter and Koch, 2008), addressed social networking’s impact on individual-level attributes like shyness and addiction (Barker and Oswald, 2010; Kuss and Griffiths, 2012) and the utilization of SNS at the

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¹ Examples of social networking services include Myspace, Facebook, LinkedIn, and Twitter.
corporate level (El-Haddadeh, Weerakkody, and Peng, 2004; Majchrzak, Cherbakov, and Ives, 2009).

The United States suffers from a lack of civic engagement. In *Bowling Alone: The Collapse and Revival of American Community*, Robert Putnam (2000) provides evidence that membership rolls in voluntary organizations (fraternal, civic, and social) have declined from the peak they enjoyed in the middle of the twentieth century. Membership rolls swelled in the years following World War II as soldiers reintegrated into American society. Decreases in group attendance, invitation of guests to dinner, and casual sports leagues has fostered acute government distrust and decreased amounts of civic participation (Putnam, 2000).

Putnam defines social capital as the “features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit” (Putnam, 1995a, p. 67). Groups provide members with greater amounts of social capital and increase social discourse. For Putnam, group affiliation exceeds socioeconomic status as the most compelling explanation for social capital variance. Social capital is defined as the connections that citizens make, coupled with the benefits accruing from adherence to reciprocity and trustworthiness in these networks (Putnam, 2000, p. 19). Social capital is separated into bridging and bonding forms; bridging social capital is created through linkages made between groups and bonding social capital is established through in-group interaction.

The amount of social capital in the United States is declining as a consequence of shrinking membership numbers and attendance in voluntary organizations (Putnam,
Social networking websites are hypothesized to decrease the opportunity cost of creating and maintaining groups, facilitating civic engagement for their users. SNS utilization influences the amount of social capital a citizen holds. Increased amounts of activity on these services will affect social capital indirectly through influence on attitudinal factors and in a direct fashion (Zhang, Johnson, Seltzer, and Bichard, 2010, p. 86). Activity on social networking services impact civic engagement by influencing generalized trust attitudes and perceptions of political efficacy. Social networking’s influence on civic engagement will increase as the number of internet users climb.

**Social networking services**

Social networking services allow users to create a personal profile, create networks based on shared beliefs, experiences, or relations, and interact with other users; examples of these services include Bebo, Facebook, LinkedIn, and Orkut. This dissertation contends that utilization of social networking services impacts civic engagement in a fashion separate from that observed by activity in online or offline groups. Social networking represents a potential solution to the civic engagement problem described by Robert Putnam in *Bowling Alone*.

Understanding the protean nature of social networking services is integral to appreciate their unrivaled role in fostering civic engagement. Early methods of social

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2 Social networking services, social networking websites, and SNS are terms used in the dissertation to represent the same phenomenon.
interaction through computer networks allowed for users to contact others on a shared network. As internet access became available to a wider segment of society, users congregated on bulletin board systems (BBSs) and internet forums. Social networking services represented an evolution to these services, facilitating the creation and maintenance of networks. SNS streamlined functions (uploading pictures, viewing usage statistics, and sending private messages) that possessed large learning curves or were impossible to conduct on previous services. Social networking services provided additional centralization, which provided a benefit to users beyond previous online networking; users can establish a personal profile, express interests and beliefs, discuss experiences, connect with relations, and interact with other users. Social networking services (SNS) are defined as: “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system” (Boyd and Ellison, 2008, p. 211).

Social capital

Social capital scholars have conceptualized the titular term variously; research is hurt by the lack of a concise and common definition for the phenomenon (Fukuyama, 2002). Coleman (1988) conceptualizes social capital as involving structures and actors; structures facilitate the realization of actors’ desires. Coleman’s conception of social capital is delineated into obligations and expectations. Users benefit from the provision of information, while users are constrained from rent-seeking behaviors through adherence
to a set of organizational norms (Coleman, 1988, p. S95). Bourdieu and Wacquant (1992) conceive of social capital as “the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition” (p. 118-119).

Resources are qualities that are provided by the individual to the network. Putnam perceives social capital to be the benefits garnered by the individual through association with organizations, adherence to agreed-upon norms, and trustworthiness held toward society (2000).

Individuals are motivated to pursue social capital as it can facilitate the completion of desired policy goals, and political actors calculate the costs inherent in undertaking an action. Social networking services decrease the opportunity cost of action. Political actors affiliate with organizations when they believe that their association will yield a benefit in excess of the expected benefit of individual action. This expenditure of time and resources occurs whether the group is homogeneous (socioeconomic cohorts) or heterogeneous (interest-based organizations). Groups are endowed with transformative potential and provide positive externalities at a level exceeding that of the individual (Fukuyama, 2001, p. 7).

By providing social networking access and education about social networking services, policymakers can foster greater amounts of government trust and political efficacy held by constituents. As the potential for positive attitudes for political efficacy increases, the amount of trust actors invest into their government expands.
Citizens possessing higher amounts of social capital are better able to express desired policies to their government by means of the networks they associate (Boix and Posner, 1998, p. 691). Governments enact policies; citizens with larger amounts of social capital effectively enjoy a direct link to those modifying policy. Civic engagement is a “good” benefitting society at numerous levels; increased social capital has been associated with an efficacious government, decreases in crime rates, and an empowered citizenry (Kenski and Stroud, 2006). The United States has been impacted by the lack of civic involvement and suffers from low social capital. Social capital generated by the individual and by society as a whole is smaller at the current period than at other point in American history (Paxton, 1999; Putnam, 2000). For governments to be efficacious, citizens must feel as if they are involved in the policy-making process. The presence of the digital and skills divides represent systemic impediments to civic engagement. A decrease in social capital at the state level leads to a worsening of the attitudes held towards the government and lower government efficacy (Wacquant, 1998, p. 35; Fukuyama, 2001). Those citizens possessing low amounts of social capital feel detached from their government and are significantly less happy than those possessing higher amounts. Negative attitudes towards political efficacy remove citizens from society, decreasing their ability to impact government discourse (Bandura, 1977, p. 201).
**Digital Divide**

The digital divide is defined by Norris as “the difference between those who do, and do not, use the panoply of digital resources to engage, mobilize, and participate in public life” (Norris, 2001, p. 4), and examines the effect of differential rates of computer access and internet utilization. Digital divide theory explores the differences between similar populations varying in personal computer (PC) ownership. Min (2010) expands upon the digital divide framework by proposing the existence of a second-level digital divide, where the variance in internet skill levels affects a citizen’s ability to successfully interact with government (Norris, 2001, p. 5). Increased internet connectivity and usage rates led to the conception of the second-level digital divide as an explanation for civic engagement concerns (Norris, 2001; Mehra et al, 2004). The second-level divide gained explanatory power as internet-capable computer access became accessible (Mossberger et al, 2008). As citizens possess computer access and the opportunities to receive skills training through libraries, schools, and municipal institutions, the second-level skills divide must be considered alongside the digital divide as an explanation for the continued exclusion of individuals from civic engagement.

The democratic divide (Norris, 2001; Min, 2010) corresponds to the gap existing between early adopters of the internet and those that availed them of the internet at a later date. The initial user base, owing to the greater amounts of time spent online, is more skilled in online activities and digital involvement than populations connecting at later dates. Citizens impacted to the greatest degree by the digital divide are those that continue to be impacted by the democratic divide.
The production gap hypothesis claims that meaningful civic engagement online is limited to those possessing constant internet access and knowledge of methods of content production. Schradie (2008) finds that those at higher education and income levels are those that can afford the cost of a high-speed internet connection and the leisure time to familiarize themselves with content creation tools. Schradie’s “production gap” model represents an extension to the digital and democratic divides; in the model, those controlling greater resources have structured the way that content is created on the internet to discourage closure of the gap.

The production gap is characterized by Schradie (2011) as differential opportunity between those with access to content generation and those without. The production gap has increased in prominence as the online departments of traditional media outlets have garnered considerable audiences; CNN captures 1.50% of daily internet users, while Fox News is read by a further .70% of those online (Alexa, 2012a; Alexa, 2012b).3 These online media outlets have established a more passive role for visitors through an increased formality and rigidity in publishing. Social news websites, or those websites allowing user submission of news stories, have changed considerably over the space of a decade. Numerous social news websites – Backflip, Propeller, Showhype, and Mixx – have ceased operations. Social news websites have been plagued by “power users”- individuals that possess considerably greater chances of featured story placement. The prominence of the power user decreases the ability of the rank-and-file user to utilize social news websites for change (Lim, Kim, Park, and Lee, 2011).

3 Website ranking and reach statistics are available on Alexa via a search for the traditional news outlet websites.
The second-level digital divide is exhibited on major online portals for CNN and TheGuardian, where an employee base is solely imbued with the ability to create content for readers. This “production gap” is present on websites that are touted to promote equitable user access such as Reddit and Wikipedia (Schradie, 2011, p. 146). While users can add content to these websites, moderators can shape, limit, and remove contributions at their discretion. Social networking services represent one potential solution to the second-level skills divide, the democratic divide, and the “production gap”.

**Significance of proposed research**

![Diagram of Proposed Model for Indirect and Direct Social Capital Creation](image)

This research hypothesizes that social networking usage influences social capital in indirect and direct fashions. This dissertation examines four phenomena – social networking service (SNS) use, generalized trust, political efficacy, and social capital. A
determinant model is hypothesized for each of these factors, containing factors that reached significance in previous literature. Understanding the determinants of SNS usage provides policymakers with information regarding what matters in bringing citizens onto the services. Previous conceptions of the social capital generation process have posited the importance of demographic variables (Kawachi, 1997; Glaeser, 2001; Hetherington, 2005; Ellison, Steinfield, and Lampe, 2007; Burke et al, 2010). The dissertation hypothesizes that socioeconomic factors influence the decision to utilize social networking services. Socioeconomic factors are proposed to impact generalized trust and political efficacy, direct contributors to social capital, as well as social capital itself. Social networking services contribute to social capital indirectly through an effect on generalized trust and political efficacy attitudes, and are proposed to modify social capital in a direct fashion alongside socioeconomic factors.

Literature examining the role of social networking services in determining social capital captures an association between social networking usage and social capital levels. Ellison et al (2007) find a positive relationship between intensity of social networking usage and maintained social capital accumulation. Valenzuela, Park, and Kee (2009) link increases in social networking usage to an increase in the probability of civic involvement and possessing positive trust attitudes. The functionalities available to social networking users vary; any associations that are shown in one study may not be significant in another. Social media websites are more transitory than online and offline organizations; MySpace was brought online in 2003, was the world’s most-visited website from 2006 to 2008, and had fallen to 261st worldwide in unique monthly visits
by 2013. Microsoft’s Windows Live Spaces was established in 2004, possessed 27,000,000 users by 2007, and was taken offline in March of 2011. Social networking research is a time-sensitive phenomenon, as SNS regularly initiate changes leading to substantial shifts in users’ experiences on the services. Facebook is the most-visited social networking website and has made 73 service-level changes in 2010 and 2011 (Loomer, 2012). User bases of social networking services fluctuate considerably; Facebook users numbered 30 million in 2007 while users of the service currently exceed 1 billion (Facebook, 2013). The experience of a social networking user is different based on the modifications initiated by these services, decreasing the ability of research focusing on the relationship between SNS usage, generalized trust, political efficacy and social capital to generalize findings to the whole of social networking. A change initiated on a social networking website, such as Facebook’s opening up of their service to those without a college-assigned e-mail address, reduces the ability of previous research to be generalized to the whole of social networking activity.\(^4\) Allowing users to sign up for Facebook with any e-mail address considerably changed the user base of the service. The demographics of Facebook during the period preceding this policy change were different than those currently using the service.\(^5\) Those with a college email were those attending, who had recently attended, or had a position at an institution of higher learning. Any

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\(^4\) In their 2011 work, Vitak, Ellison, and Steinfeld claim that the Facebook Intensity measure created in the 2007 Ellison \textit{et al} work does not achieve significance because of Facebook’s changes in entry requirements.

\(^5\) College students had the resources available to attend college and possessed educational attainment to a degree beyond the average American citizen.
findings made by scholars focusing on the pre-change Facebook would be generalizable to the period when these changes were in effect.

The use of social networking services has increased exponentially between the initial wave of research and today. Literature focusing on social networking services explores the psychology and behavioral uses of these websites. Research exploring the political ramifications of social networking is limited in generalizability; system-level changes occur more rapidly than is observed in offline and online groups.⁶ Research into the effect of social networking activity on generalized trust, political efficacy, and social capital utilizes old or ill-fitting data. Research focusing on Facebook overwhelmingly uses data collected from college students; Ellison, Steinfeld, and Lampe (2007) evaluate the responses of Michigan State undergraduates, Valenzuela, Park and Kee (2009) base their findings on data from two Texas universities, while data from the 2006 National Annenberg Survey of Youth is examined in Pasek, More, and Romer (2008).

This dissertation presents research relevant for political science and policymakers, including an evaluation of the demographic and structural factors that are proposed to influence social networking use. Social networking services are hypothesized to indirectly and directly modify social capital. The theoretical framework provided in the dissertation posits that the digital divide is a compelling explanation for the variance in government accessibility. The production gap explains the structure of online mass media outlets as constraining effective and equitable discourse between users and governmental

⁶ Facebook initiated video calling in July 2011, updated the news application (the Ticker) in September, released an iPad application in October, and updated the profile (Facebook Timeline) in February of 2012. Each modification changed habits of use for users of the service.
representatives. As a unique form of communication, organization and networking, social networking websites are theorized to be a possible solution for the democratic divide and production gap.

These hypotheses are evaluated using Social Side of the Internet Survey data, conducted by the Internet and Social Life sub-section of the Pew Research Center. The Social Side of the Internet Survey was conducted in November and December of 2010; the population contains 2,303 responses for an assortment of questions. The decision to utilize social networking services will be determined by demographic factors separate from those influencing the decision to access the internet or to affiliate with offline groups. Social networking intensity is hypothesized to increase a respondent’s level of trust towards strangers (generalized trust) and their perceived ability to change their political system (external political efficacy). Social networking website use is conjectured to impact social capital creation.

Multiple methods are employed in this dissertation. Quantitative analysis is implemented to empirically evaluate the effect of social networking as a determinant of civic engagement when demographic and group-based factors are included. Ordinary least squares (OLS) and maximum likelihood estimation (MLE) models are implemented in this dissertation to estimate regression models. Multiple imputation addresses the problem of incomplete survey data, allowing for a larger N than would exist in a non-imputed dataset. Information about the generation of dependent and explanatory variables precedes a description of the models in which they are presented. Interaction variables examine the synergy between demographic factors and social networking utilization.
Qualitative methods are implemented to provide further explanation for the trends and relationships observed in the data.

Social media users use SNS to create a profile, establish political groups, write and publish content, generate polls, and publish links. The overall focus, goals, and suites of activities present on social networking services differ but the networking aspect afforded by their utilization is consistent. Social networking services occupy a unique role in American civic life that has been empirically explored at limited levels. Earlier social networking research has provided results that are not generalizable to the entirety of the American context; this dissertation utilizes nationwide data to examine social networking intensity as a determinant of indirect and direct forms of social capital. The effect of social media usage will increase in strength as individuals continue to sign up for and employ these services; this dissertation provides further specification of the role of social networking services through the inclusion of national data.

Social networking websites are proposed to be the way to avoid apathetic or negative attitudes towards the government as described by Putnam (2000), and are proposed to be a tool to decrease the severity of the democratic divide and production gap, which represent systemic forces hindering individuals from civic engagement.

The relationships examined in this dissertation possess tremendous potential to become more salient in the future; social networking services have been associated with increases in maintaining social capital, and the differentiation of social networking intensity and type may provide support for a relationship between SNS and bridging and bonding social capital (Ellison, Steinfield, and Lampe, 2007). The findings in this
dissertation are germane to policymakers and political scientists: social capital is hypothesized to be generated through a more complex set of factors than proposed in previous literature. Conceptions of social capital determinants would do well to consider the impact of social networking services.

Outline and Concluding Remarks

A discussion of the research questions presented in this dissertation is established through the conceptual framework of civic engagement. The study is situated in the social capital field, focusing on the relationship between social capital, demographic factors, group affiliations, and the utilization of the internet and social networking services. The literature review ends with a description of democratic divide and “production gap” scholarship.

The data and methods section of the empirical chapters describe the variables and processes utilized; an explanation of the multiple imputation (MI) process is included along with the decision to utilize MI in the dissertation. A set of hypotheses for each research question are provided and are tested in the empirical chapters. The first empirical chapter examines the determinants of social networking website use, comparing these factors to those influencing internet use and group affiliations when socioeconomic controls are included. The second empirical chapter explores social networking’s role in modifying generalized trust and personal efficacy attitudes. The role of social networking website use in the generation of social capital is investigated in the concluding experimental chapter. A results section synthesizes the findings from the
empirical chapters, while the conclusion considers the effect of the dissertation’s findings in policymaking and political science contexts.

The initial empirical chapter examines the determinants of social network usage, delving into the role of demographic and group affiliations in the decision to utilize social networking services. A description of relevant literature in the democratic divide and social networking fields is provided; a set of logit regressions measure the effects of demographic factors on the decision to utilize social networking websites, use the internet, or associate with traditional (offline) groups. The second empirical chapter tests hypotheses concerning the indirect role of social networking services in regard to civic engagement as a determinant of generalized trust and political efficacy attitudes. Generalized trust is defined in the dissertation as the attitude individuals possess regarding the trustworthiness of strangers. External political efficacy refers to the belief in the capacity of the individual to enact meaningful change (Campbell et al, 1954). Models comprising the determinants of generalized trust and political efficacy are proposed. The author hypothesizes that social networking service intensity will exhibit a significant relationship with both generalized trust and political efficacy. This relationship will remain significant when demographic and associational variables are included in the equation.

The final empirical chapter attempts to examine the hypothesized relationship between the intensity of social networking service usage and social capital. SNS intensity is evaluated as an explanatory variable alongside demographic and group variables, and is hypothesized to possess a significant relationship with social capital. Previous
explorations into social networking services and social capital provide support for this hypothesis. Early literature has claimed that social networking increases bonding and bridging forms of social capital (Norris, 2004; Steinfield, DiMicco, Ellison, and Lampe, 2009; Choi et al, 2011) and creates maintaining social capital (Ellison et al, 2007). A concluding chapter applies empirical results to social capital and civic engagement theories, and provides policy recommendations based on the findings. The conclusion ends with a description of the potential avenues and pitfalls for future research.

Social networking services possess the potential to influence civic engagement in indirect and direct fashions; social networking is proposed to affect generalized trust attitudes, political efficacy, and social capital. The author contributes to civic engagement, social capital, digital divide, and the “production gap” theories with this research, as the intensity of social networking service use is hypothesized to remain significant when presented alongside demographic factors in the determination of social capital. As social networking continues to grow in importance, the direct effect that it will have on social capital and the direct contributors to social capital will increase.
Chapter Two

LITERATURE REVIEW

The literature review establishes the dissertation as contributing to civic participation and digital divide research. Social capital literature has not explored the “production gap”, its effect on social capital, and the role that social networking services play in regards to this second-level divide. Second-level digital divide issues – a democratic (skills) divide and the production gap – represent structural impediments blocking equitable access to elected officials and the ability to set the agendas of these representatives (McCombs and Shaw, 1972; Schradie, 2011). Civic engagement research focuses on the factors influencing meaningful interactions for citizens in the public sphere. The digital divide framework conceptualizes that unequal computer access and educational achievement decrease civic engagement levels. Civic engagement is described as the actions taken “to make a difference in the civic life of our communities and developing…knowledge, skills, values, and motivation to make that difference” (Ehrlich, 2000, p. vi) and is defined in this dissertation as the activities bringing an individual into contact with other citizens, regardless of their government or organizational involvement. Actions exemplifying civic engagement are considerable; citizens can contact representatives, meet about municipal concerns, and initiate discourse.
Social capital literature

Salisbury (1969) explains the reasoning for joining organizations; individuals associate with groups because “group organizers invest in a set of benefits which they offer to potential members at a price – joining the group…members must receive benefits and leaders enough return…to warrant continued participation” (p. 1). Salisbury claims that social capital is created through the collection of transactions by rational, profit-seeking citizens. Group organizers require members to receive their desired policy, while individual members profit through the provision of materials, group solidarity, and purposive benefits provided by the leader (Salisbury, 1969, p. 16). Bourdieu and Wacquant define social capital as the “sum of the resources…that accrue to an individual or a group by virtue of more or less institutionalized relationships” (Bourdieu and Wacquant, 1992, p. 119). Putnam conceptualizes social capital as the “features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit” (Putnam, 1995a, p. 67).

Putnam (2001) incorporates the state into theories of social capital creation, contending that a state benefits from increased social capital: “When economic and political negotiation is embedded in dense networks of social interaction, incentives for opportunism are reduced. At the same time, networks of civic engagement embody past success at collaboration” (Putnam, 1995a, p. 67). Social capital is bolstered through the creation and promulgation of groups. Putnam further distinguishes social capital into bridging (inclusive) and bonding (exclusive) types. Bonding social capital is generated by the affiliation with homogenous (same-group) organizations, while bridging social capital
crosses social strata to grant heterogeneous group benefits. Examples of bonding social capital are evident in ethnic and racial organizations, where bridging social capital is generated by a variety of groups; examples include amateur sports teams, volunteer-based organizations, and religious groups.

Norris (1996) expands social capital research to consider non-traditional methods of association. Norris claims that television – described by Putnam (1995b) as a negative influence on the social fabric of the United States – has a more nuanced role in regards to social capital. Through the increasing prominence of news and political programming, television has a varied effect on social capital creation (Norris, 1996, p. 479). Norris’s work acts as a blueprint for subsequent discussions about new technology and their impact on social capital. Norris’ piece expands upon Putnam’s social capital typology as she posits that the reporting of a news anchor on television represents a substantially different form of social capital than that provided through a party leader’s oration or a newspaper staffer’s opinion piece.

Skocpol and Fiorina (1999) test Putnam’s conception of an earlier, more social capital-oriented United States, positing that “renditions of the imagined past do not always line up with one another, let alone with the facts” (Skocpol and Fiorina, 1999, p. 6). In response to the theory that the United States is fundamentally different in terms of civic life than Europe, Skocpol posits that American civic-mindedness is traced back to pre-immigration *mores* of Europeans that settled in the United States; Americans should not be seen as monolithic or separate in social capital generation (Skocpol and Fiorina, 1999, p. 31). Skocpol refers back to Almond and Verba (1963) whom claim that
distinctly different civic engagement patterns are observed between states, establishing that disparate conceptions of civic engagement provide an explanation to the civic disengagement issue brought forth by Putnam.

Fukuyama (2002) possesses a critical view of Putnam’s conception toward social capital, claiming that social capital research is hurt by the lack of a concise, agreed-upon definition for the phenomenon. Social capital is defined as “shared norms or values that promote social cooperation, instantiated in actual social relationships” (Fukuyama 2002, p. 34). Fukuyama highlights the variance of social capital types found in states: where traditional ethnic or religious groups (bonding social capital) provide valuable services in their countries of origin, a paucity of bridging social capital-generating groups exist in many of the developing states. While the establishment of bridging social groups would facilitate improvements in the political and economic realms, “many traditional groups embodying one form of social capital can actually be obstacles to development, because they are too insular or resistant to change” (Fukuyama 2002, p. 34). Fukuyama contributes to research in this field by conceptualizing social capital as a force that can negatively impact citizens.

Keele (2007) hypothesizes that social capital levels in the United States enact a statistically significant effect on the amount of trust that the citizenry holds towards their government. A decrease in social capital in the mid-1990s led to a constriction in government trust, where “[governmental] trust reached its nadir as less than 35% trusted the government in 1994…civic engagement and interpersonal trust both dipped during the same time period” (Keele 2007, p. 252). Keele’s examination of the determinants of
trust identifies a statistically significant role for social capital when variables controlling for the economic development, educational achievement, and the crime rate of a country are included (Keele 2007, p. 242). Keele’s measure for interpersonal trust maintains significance alongside variables for consumer sentiment, civic engagement levels, and Congressional approval rating as a determinant of social capital. Keele’s work is a foundational work in social capital research as he focuses on the interaction between social capital and trust.

*The Internet, social networking services and social capital*

Social capital scholarship is varied in terms of focus, discussing definitions of the term, its quantification, or how it is created. Internet access has the potential to facilitate government participation by citizens, but the prominence of the digital and the democratic divides privilege certain groups while excluding others from participation (Sylvester and McGlynn, 2010, p. 69-70). Nie (2001) posited that a relationship exists between internet utilization and the creation of social capital, and contends that accessing the Internet has negative implications for social capital – spending time away from face-to-face meetings with peers is deleterious to bonding and bridging forms of social capital.

While Nie concludes that it is too early to understand the role between the internet and social capital, Putnam and Feldman (2003) and Ellison *et al* (2007) focus on websites facilitating networking and social capital generation. Wellman *et al* (2001) asserts that the internet provides an increase to social capital (p. 4). Tolbert and McNeal (2003) expand upon Wellman’s claims, finding support for their contention that internet access
increases civic engagement. Internet use creates a different type of social interaction than traditional group affiliation: “there is no doubt that e-mail has produced a substantial and meaningful enhancement in interpersonal connectivity…e-mail through communication may not necessarily contain the same depth or emotion” (Nie 2001, p. 433).

Putnam and Feldstein (2003) focus on Craigslist, breaking down internet usage into an array of separate activities rather than conceptualizing the internet as having a uniform effect on social capital. Putnam and Feldstein are unable to conclude that the Internet possesses any transformative power in regards to social capital. Noting that Craigslist possesses social interactions comparable to those encountered in reality, Putnam and Feldstein reject Nie’s contention that internet usage has a negative effect on social capital. The pair claims that there might not be a “future in which masses of people will migrate from local traditional communities to communities of interest in cyberspace…but it does suggest a role for the Internet in the mix of ways that people come to know, trust, and connect with one another” (Putnam and Feldstein 2003, p. 240).

Bargh and McKenna (2004) assess the competing claims made by Nie (2001) and Putnam and Feldstein (2003), positing that the Internet uniquely affects the ability to meet and interact with others possessing similar racial, ethnic, or sexual identities. The internet’s effect on social capital varies regionally owing to the service’s availability as an internet connection “facilitates the formation of relationships on other, deeper bases such as shared values and beliefs” (Bargh and McKenna 2004, p. 586). The sheer amount of information available to internet users provides ample information to identify with causes, groups, and organizations that they would not possess otherwise. While not
explicitly adopting the concepts of bridging and bonding social capital, Bargh and McKenna support the premise that Internet utilization fosters the creation of each social capital type. Castells (2004) accords with Bargh and McKenna, asserting that technology represents an integral contributor to social capital. Internet use fosters social capital in a fashion that differs from the typology proposed by Putnam and Feldman (2003); Castells contends that “technology is a necessary, albeit not sufficient condition for the emergence of a new form of social organization based on networking.” The interactions established through social networking services do not neatly correspond to the types of social networking described in Putnam (2000).

Kazienko and Musiat (2006) explore the process by which social capital is fostered by social networking, building on Castells’ work. The duo establishes a typology of social networking services: social networking can be “dedicated (e.g. dating or business networks, networks of friends, graduates, fun clubs), indirect (online communicators, address books, e-mails), focused on common activities (e.g. co-authors of scientific papers, co-organizers of events), or local networks… families, employee networks, [and] hyperlink networks” (Kazienko and Musiat 2006, p. 417). Kazienko and Musiat claim that the social position of users in a network is a determinant for social capital accumulation. This typology allows scholars to conceptualize differential uses of social networking websites, leading to differing accumulations (either positive or negative) of social capital.

Ellison, Steinfield, and Lampe’s (2007) contribution to the Internet and social capital creation dialogue comes through the inclusion of social networking service usage
as a determinant along factors reaching significance in previous social capital research. In their examination of the presence of bridging and bonding social capital on social networking services, Ellison et al establish the idea of maintained social capital, defined as the creation of relationships with members of a previously-inhabited social organization (e.g. secondary school or college acquaintances). The maintenance of networks increases the creation of individual social capital. Sampling undergraduate students at Michigan State University, Ellison et al deduce that Facebook usage fosters levels of all three forms of social capital, with the strongest relationship observed between social networking use and bridging social capital.

Where Kazienko and Musiat establish a typology of social networks, Kobayashi, Ikeda, and Miyata (2006) pursue an empirical answer to the relationship “does Internet use promote social capital online…does it encourage rich online social relationships as a basis for democratic participation and the smooth operation of democracy…does social capital online spill over into social capital offline?” (Kobayashi, Ikeda, and Miyata 2006, p. 583). The authors posit that Internet use fosters social capital accumulation in opposition to Nie (2001). Using a data set comprised of 1,320 Japanese citizens, Kobayashi, Ikeda, and Miyata hypothesize that “Generalized reciprocity and generalized trust online are nourished by collective Internet use…Generalized trust and generalized reciprocity online have positive effects on political participation online” (Kobayashi, Ikeda, and Miyata, 2006, p. 583). While Kobayashi, Ikeda, and Miyata are unable to find strong support for a linkage existing between internet use and social capital when demographic variables (gender, age, education, occupation) are included, the online
social capital variable regarding reciprocity is highly significant. Kobayashi, Ikeda, and Miyata’s contribution to social capital literature comes in their conceptualization that intermediate factors (generalized reciprocity and trust) contribute to the generation of social capital.
Chapter Three
THE SECOND-LEVEL DIGITAL DIVIDE AND USE OF SOCIAL NETWORKING WEBSITES

The digital divide is defined as “the troubling gap between those who use computers and the Internet and those who do not” (Mehra, Merkel, and Bishop, 2004, p. 782); Mossberger, Tolbert, and McNeal (2008) couch the second level digital divide problem as being inimical to direct democracy. The second-level digital divide is defined as the variance in the internet skills possessed by groups and the variation in civic engagement and influence between individuals that are connected to the internet; the second-level digital divide represents a systemic block to individuals wishing to involve themselves with direct democracy online (Min 2010, p. 24). Literature in the digital divide field has demonstrated the continued prevalence of differential access to the Internet and its resources between age cohorts, races, gender, and geographic types. This chapter empirically evaluates the factors hypothesized to determine whether a respondent uses social networking services. The decision to access the internet, use social networking services, or associate with traditional groups represent decisions taken by citizens to facilitate social capital generation. Understanding the factors influencing the decision to utilize online and offline services provides policymakers with information that can impact future programs and legislation. This portion of the dissertation addresses whether the factors influencing the probability of SNS usage are comparable to those affecting internet usage and group affiliation. Should the factors relevant to the decision
to join SNS and traditional organizations vary, social networking services can be viewed as a potential tool to decrease the severity of the second-level digital divide (Min, 2010).

The decision to use the internet has been shown in previous research to be modified by a wide array of factors. This dissertation envisages the respondent’s decision to use social networking services as being influenced by factors distinct from associating with traditional groups and accessing the internet. Putnam and Feldstein (2003) hypothesized that the internet can be utilized in a variety of ways, proffering the example of Craigslist. Craigslist usage differs from other internet activities in terms of social capital generation; the dissertation contends that SNS usage creates social capital in a unique fashion from other internet activities. Findings made in this work expand upon social networking usage literature, evaluating whether factors germane in previous research maintain relevancy when utilizing a nationwide sample. Empirical examinations have focused on the range of activities conducted on social networking services, rather than understanding the factors which encourage and obstruct individuals from using the services.

Social networking service research focuses on quantifying the interactions occurring between users on these websites; articles testing the existence of the second-level digital divide have been hindered by older data, and research into the factors impacting an individual’s use of social networking services is limited in terms of sample size and generalizability. The chapter’s examination of social networking service determinants generalizes findings to a broader segment of United States citizens. The choice to adopt Social Side of the Internet data captures current social networking
experiences. Social networking research is still rudimentary; “scholars still have a limited understanding of who is and who is not using these websites, why, and for what purposes” (boyd and Ellison, 2009, p. 224).

This research contributes to social capital and digital divide literature in that it looks to examine the role of demographic and socioeconomic factors in the decision to utilize social networking services. A gap is present in analysis of social networking websites; what about a respondent’s race, income level, education, or other identifying elements influence the probability of social networking site use? Do the elements of social networking site use differ from those that determine internet use and activity in offline groups? Social networking services are a potential tool to bridge the digital and second-level divides, as social networking websites are not limited by the same set of factors modifying internet use. Social networking services are substantially different than offline and internet-based groups, and may represent a unique form of engagement which can ameliorate the involvement problem in a fashion separate from internet use nor traditional forms of meeting. A SNS user can join a group with a single click and be immediately able to begin discussion or add to a pre-existing dialogue. Social media groups require no fees, can be found through simple searches, and can be created instantaneously. The design of social networking allows users to begin a discussion, have friends or family members contribute, and even inspire friends of friends to comment on that discussion. In addition to focusing on the precedent factors of social networking website usage, the chapter hopes to add to social networking use literature through the inclusion and testing of interaction variables. Previous research has not examined the role
of interactions in influencing the probability that respondents use social networking websites.

The exploration of the determinants of social networking service use provides insights and policy implications for policymakers and political scientists. Structural factors limit respondents from accessing social networking websites; e-government resources are not equally accessible nor can they provide equitable service provision to all. If age or geography is shown to have an effect on SNS use, existing policies may benefit from changes that take these factors into consideration. For example, classes that focused on educating older citizens or those in rural areas may reduce the impact of differential social networking website use.

The findings described in this dissertation are germane to political scientists as research into social networking service’s determinants tests the explanatory power of digital divide theory. Comparison of the elements relevant to internet and social networking usage explores whether groups continue to be affected by the digital divide and provides information about the collection of demographic and structural factors modifying the probability of usage. This research expands upon the digital divide literature by focusing on the current realities of internet access – a preponderance of citizens possess computers, home internet access and internet-capable cellular phones. Does this increase in internet access and decrease in the cost to connect translate to greater ability to contact with like-minded individuals or representatives, or are there fundamental impediments to having a full voice realized in American society?
The literature review explains the evolution of the social networking service field through the initial conception of the “digital divide” into research hypothesizing the permanence of a gap in governmental access as made intransigent by a skills differential. Variables are chosen from the Social Side of the Internet survey; any missing data in these independent variables is generated using multiple imputations (MI). After missing data is imputed, a regression tests hypotheses by reporting and evaluating the significance of explanatory factors. A conclusion ties together research findings to broader civic engagement theory, placing it alongside previous contributions in the field. The conclusion contextualizes findings for political scientists and policymakers in light of the chapter’s results, proposing a course of action to address the digital divide and other barriers to unfettered civic engagement.

*Literature Review - Digital and Democratic Divides*

Research into individual propensities of social networking service activity is built off of previous studies considering the causal factors of Internet use. Research into the factors of internet use was initiated by the “Falling Through the Net” publications released by the National Telecommunications and Information Administration (NTIA). These articles were published in 1995, 1997, 1999 and 2000, and indicated that an array of factors represented structural barriers to equitable Internet access. The “Falling Through the Net” studies represent the framework on which later research would be based; the set of reports showcase socioeconomic factors as integral determinants modifying a citizen’s ability to access the Internet. The “Falling Through the Net” reports
point to policymakers as the greatest potential catalysts for change, asserting that citizens are unable to change the factors that the NTIA found to be relevant in determining internet use. Policymakers at all levels of government have the ability to bring the “have-nots” online (NTIA, 1995).

Norris (2001) provided readers with an initial theoretical framework encapsulating the findings proffered in the “Falling Through the Net” reports. Norris’ conception of the “digital divide” represented three impediments to internet access – the global, social, and democratic divides. The global divide is defined as the disparities observed between internet access rates in global north and global south states. The social and democratic divides described by Norris represent individual-level nuance to internet access issues: “the social divide concerns the gap between information rich and poor in each nation… the democratic divide may still exist between those who do and do not use the multiple political resources available on the Internet for civic engagement” (Norris, 2001, p. 4, 12). Norris touts the potential of the Internet to foster civic engagement as a force to tip the balance of power from established actors to anyone that possesses the technical ability to meaningfully use this service.

DiMaggio and Hargittai (2001) capture the shift from differential amounts of Internet access towards differential quality of access. Where the “Falling Through the Net” article elaborated on the hindrances to internet connectivity, DiMaggio and Hargittai write in a period where internet access is equalized; “students of inequality of access to the new information technologies should shift their attention from the ‘digital divide’… to digital inequality, by which we refer not just to differences in access, but also to
inequality among persons with formal access to the Internet” (DiMaggio and Hargittai, 2001, p. 1). DiMaggio, Hargittai, Celeste and Shafer (2004) measure digital inequality through five facets of internet use and access that constitute barriers to equitable online experiences; these facets include varying levels of internet-capable technology, the level of control over internet access, the different levels of internet abilities possessed, fluctuation in the amounts of technical support possessed by family and friends, and a wide range of ways to use the internet (DiMaggio et al, 2004, p. 31). Taken together, these five factors explain the continued variation existing between individuals as trends continue to support the typology of “haves” and “have nots” described in the “Falling Through the Net” studies.

The democratic divide decreases the potential for digital citizenship, where digital citizenship is defined as the ability to involve oneself on the internet in a regular fashion. (Mossberger, Tolbert, McNeal, 2008). A digital citizen is able to be heard by conducting tasks no more complex than posting on a forum or initiating an online petition. Traditional forms of civic engagement - establishing a neighborhood watch or attending town hall meetings – represent a large investment in time and finances when compared to online activities. As citizens shift away from face to face interactions to meetings and campaigns conducted online, the power wielded by these digital citizens will increase. Where early democratic divide literature contended that a connection to the internet would allow for an equality of voices, Mossberger, Tolbert and McNeal contend that casual internet use is not a sufficient condition to be a digital citizen. To provide individuals with the ability to become civically involved, skills training seminars or
classes should be made available. Mossberger, Tolbert, and McNeal establish that the
democratic divide is something that can be reduced in severity and those concerned with
providing equal access to government services should provide educational tools.

**Hypotheses & Predictions**

The Social Side of the Internet survey contains data used to determine whether an
individual uses social networking services. Two values correspond to whether the
respondent does (1) or does not use (0) social networking websites. A logistic regression
model is utilized in this chapter as the social networking usage variable is dichotomous.
The separation of groups between those using and not using social networking services
allows for greater understanding of relevant explanatory factors. The initial regression
contains those not using the internet; the second model evaluates the explanatory power
of a set of determinants in influencing the probability of using the internet. A third model
is generated to analyze whether the causal factors determining social networking site use
are comparable to those determining internet use. Regression models determine how
social networking service use compares to the factors influencing affiliation with
community, church, or professional organizations. As the dependent variables are binary
in construction, predicted probabilities are generated for each independent variable in the
model.
Social Networking Site Models:

Model 1: \[ SNSU = \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Education} + \beta_3 \text{Income} + \beta_4 \text{Internet} + \beta_5 \text{Technology} + \beta_6 \text{African} + \beta_7 \text{Hispanic} + \beta_8 \text{Geo. Type} + \beta_9 \text{Male} + \varepsilon \]

Model 2: \[ \text{Internet Use} = \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Education} + \beta_3 \text{Income} + \beta_4 \text{Technology} + \beta_5 \text{African} + \beta_6 \text{Hispanic} + \beta_7 \text{Geo. Type} + \beta_8 \text{Male} + \varepsilon \]

Model 3: \[ \text{SNSU Interaction} = \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Education} + \beta_3 \text{Income} + \beta_4 \text{Internet} + \beta_5 \text{Technology} + \beta_6 \text{African} + \beta_7 \text{Hispanic} + \beta_8 \text{Geo. Type} + \beta_9 \text{Male} + \beta_{10} \text{Internet*Age} + \beta_{11} \text{Internet*Education} + \varepsilon \]

Model 4: \[ \text{Community Group Activity} = \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Education} + \beta_3 \text{Income} + \beta_4 \text{Internet} + \beta_5 \text{Technology} + \beta_6 \text{African} + \beta_7 \text{Hispanic} + \beta_8 \text{Geo. Type} + \beta_9 \text{Male} + \varepsilon \]

Model 5: \[ \text{Church Group Activity} = \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Education} + \beta_3 \text{Income} + \beta_4 \text{Internet} + \beta_5 \text{Technology} + \beta_6 \text{African} + \beta_7 \text{Hispanic} + \beta_8 \text{Geo. Type} + \beta_9 \text{Male} + \varepsilon \]

Model 6: \[ \text{Professional Group Activity} = \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Education} + \beta_3 \text{Income} + \beta_4 \text{Internet} + \beta_5 \text{Technology} + \beta_6 \text{African} + \beta_7 \text{Hispanic} + \beta_8 \text{Geo. Type} + \beta_9 \text{Male} + \varepsilon \]

<table>
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<td>Income</td>
<td>+</td>
</tr>
<tr>
<td>African-American</td>
<td>-</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-</td>
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<tr>
<td>Geographic Type</td>
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<tr>
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</tr>
<tr>
<td>Technology</td>
<td>+</td>
</tr>
<tr>
<td>Internet</td>
<td>+</td>
</tr>
</tbody>
</table>

Table 3.1: Directional Hypotheses, Social Networking Usage

A number of independent variables are proposed to significantly influence the probability of social networking utilization. As a respondent increases in age, the probability of social networking service use decreases due to decreased familiarity with computers. Educational attainment will positively and significantly influence a respondent’s use of social networking websites as a learning curve exists to use social networking websites. Income and technology measures represent positive contributors to the probability of social networking service usage; the association between time spent on the internet and social networking site use is believed to exhibit a similar relation.
To test whether the digital divide affects the chance that a respondent uses social networking services, African-American and Hispanic racial membership is controlled alongside measures for geography and gender. Evidence regarding race and internet access is varied; Hoffman, Novak, and Schlosser (1998) claim that socioeconomic status and education matter rather than race; African and Hispanic respondents, females, and those not residing in urban settings are statistically less likely to purchase and maintain Internet access. Racial variables are hypothesized to effect social networking website use; African-American or Hispanic respondents are proposed to have a smaller chance to use social networking websites. The geography type variable is hypothesized to be a significant influence – as one resides in increasingly urban areas, the chance that social networking services are used increases. The respondent’s gender will affect social networking website use; females will be statistically more likely to use social networking than males.

Interaction variables marking the interplay between a respondent’s age, educational achievement and level of internet usage are added to a second set of regressions. These interaction variables are hypothesized to express a positive and statistically compelling increase in the probability that a respondent uses social networking websites.

Data and Methods

Quantitative methods empirically test hypotheses concerning relevant contributors to social networking service use, the influence of social networking intensity on
generalized trust and political efficacy, and the impact of SNS intensity on social capital. Regression models attempt to explain the variation in Social Side of the Internet survey data. Qualitative treatments of best cases provide information to policymakers, establishing a blueprint for successful utilization of factors relevant to civic engagement.

Maximum-likelihood estimation (MLE) regression models are utilized in regressions concerning binary dependent variables, including those examining the decision to affiliate with traditional groups, utilize the internet, become active on social networking services, and to determine the probability of possessing generalized trust attitudes. MLE models do not estimate values for the dependent variable that exceed the boundaries of paired (0, 1) responses. Predicted probabilities are generated for each explanatory variable in an MLE regression, which show the change in the chance of observing a specific outcome with a unit increase in the dependent variable. The amount of change in the dependent variable when the value of an independent variable is changed from its minimum to the maximum is reported.

The STATA 12.0 statistical package processes and analyzes Social Side of the Internet data; regression coefficients, diagnostics, and visual aids are estimated and generated using the program. Multiple imputation (MI) is employed in this regression. Missing data represents a drawback to the interpretation of survey data; the multiple imputation process forecasts values for missing data and is generated by STATA. Social

Appendix B compares the regression coefficients and significance levels between non-imputed and imputed social capital regressions. In the demographic variable model, age moves from p<.10 (non-imputed) to p<.05 after imputation. In the full model, education moves from significant to non-significant and African-American identity moves from non-significant to significant after imputation. In both non-imputed and imputed datasets, the level of robustness is broadly similar.
Side of the Internet data contains information regarding the explanatory factors proposed to affect internet and social networking usage. This data contains 1,791 cases responding to internet utilization prompts and 1,809 cases for social networking usage. Missing data present in the Social Side of the Internet survey is replaced by a value that is calculated through consideration of other data in the regression.

The Social Side of the Internet Survey was conducted by the Pew Internet & American Life Project during November and December of 2010; the dissertation empirically analyzes the data collected from this survey. Out of 52,780 phone numbers contacted, 2,467 were accepted into the survey (Pew 2011, p. 39). 2,303 of these individuals answered the survey, corresponding to a 93.34% completion rate. The survey sample contains 1,057 males (45.9%) and 1,246 females (54.2%). A broad section of ages were represented; 12.2% (275) were 18-25, a further 28.2% (636) were 26-45, and the remaining 59.6% (1,618) were older than 45. High school graduates numbered 668 (29.0%), while 622 (27.0%) began some form of college. 468 (20.3%) completed college, and a further 351 (15.3%) had enrolled in post-graduate studies. A wide array of incomes were reported in this survey; 594 (25.8%) members of the sample reported incomes of less than $30,000, while 727 (31.6%) claimed incomes of greater than $75,000. African-Americans comprised 12.2% of those polled and 199 respondents (8.6%) claimed Hispanic lineage. Respondents reported living in a wide variety of localities; 21% (483) respondents lived in large cities with an additional 23% (529) resided in suburban areas. The largest segment of those surveyed lived in a small city (35%) with an additional fifth (19%) of respondents declaring rural residence. The survey sample is fairly mobile; over
one-tenth (11%) have resided in their current housing for less than a year and three-tenths (30%) have lived in the same location for one to five years. Social Side of the Internet respondents identified with groups to a considerable degree: 578 (25.14%) of those queried claimed an affiliation with a sports organization, 191 (8.3%) associated with a labor union, and 405 (17.61%) of the sample surveyed identified as a member of a political fellowship.

A majority of those surveyed (62%) used some social networking service, while 12% of the data set used Twitter. Of the 1,833 people responding to queries about their level of internet activity, 15% spent more than 10 hours a week connected to the internet while 11% did not conduct any activities online. A preponderance of individuals (69%) spent between 1 and 10 hours online a week and 82% of the survey sample possessed technology providing mobile internet access.

### Table 3.2: Summary Information of Explanatory Variables

<table>
<thead>
<tr>
<th></th>
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<th>Std. Dev.</th>
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<th>Maximum</th>
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<td>1</td>
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<td>446</td>
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<td>.33</td>
<td>0</td>
<td>1</td>
<td>66</td>
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<tr>
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<td>.28</td>
<td>0</td>
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<td>43</td>
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<tr>
<td>Sex</td>
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<td>.50</td>
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<td>1</td>
<td>0</td>
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<tr>
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<td>3.57</td>
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<td>512</td>
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<td>Technology</td>
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<td>1.75</td>
<td>0</td>
<td>5</td>
<td>343</td>
</tr>
<tr>
<td>Years Lived</td>
<td>2.34</td>
<td>1.35</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Variables utilize the coding implemented in the Social Side of the Internet survey when possible; a description of the questions utilized in the creation of each explanatory
variable is presented in Appendix A. Adopting Pew’s coding increases the intuitiveness of the coefficients; establishing that a respondent’s social capital level increases .15 with each $10,000 increase in income assists with understanding the measure’s effect on social capital.

\textit{Descriptive Statistics}

This section reports the average values for demographic factors in the population of Social Side of the Internet survey respondents. The mean age for respondents is 50.82 (\(\mu = 3.81, \sigma = 19.17\)) years old; the average respondent reported an income level of between $20,000 and $30,000 (\(\mu = 4.00, \sigma = 2.4\)), have completed some amount of collegiate-level education (\(\mu = 3.04, \sigma = 1.24\)), and use the internet a majority of days every week (\(\mu = 4.48, \sigma = 3.57\)). The average citizen polled has lived in their residence for 6 to 10 years (\(\mu = 2.34, \sigma = 1.35\)) and lives in a small city (\(\mu = 1.38, \sigma = 1.03\)). Respondents possess considerable amounts of technology (\(\mu = 2.29, \sigma = 1.75\)) while maintaining one social networking profile; intensity of social networking usage (\(\mu = 1.02, \sigma = 1.13\)) does not include information regarding the frequency of posting or reading group information on SNS. 12.61\% (282) of the respondents claimed African-American racial identity, while Hispanic citizens comprised 8.74\% (199) of the survey sample. Female respondents comprised a majority of those polled; 54.10\% (1,246) of the respondents are females. The average Social Side of the Internet respondent varies slightly from population contours. Hispanic respondents are slightly underreported, while female respondents are overrepresented (United States Census Bureau, 2011). The
average respondent age is considerably older than the United States average of 37.2 years. Income levels of Social Side respondents are below that of the national average of $50,831 (United States Census Bureau, 2012).

**Missing Data and Multiple Imputation**

Missing data exists in all independent variables excepting gender, ranging from .5% (education) to 22.2% of the survey sample (internet use). The amount of missing data varies. The smallest amount of missing data occurs in age, where 49 (2.13%) cases of missing data were observed. There are 12 missing values for the education level of those surveyed. Income level represents the demographic variable with the most missing data; 19.3%, or 446 of the survey’s 2,303 respondents failed to provide a yearly income. Missing data for the race of those questioned exists; 219 declined to answer an African-American affiliation query, and 26 did not respond to a Hispanic racial identity prompt. Social Side of the Internet respondents overwhelmingly answered about their group affiliation. The three group types presented – concerning membership in a political group, a labor union, or a sports organization – each had response rates of nearly 100 percent.

Two distinct explanations for the variation in the number of missing data points exist. Variables with a small proportion of missing data are drawn from questions that are easily answered; factors that suffer increased incompleteness require additional time (finding tax documents, tallying information) to accurately answer. An alternate explanation concerning the variance in missing data rates corresponds to the types of
information requested by the survey. The yearly income, internet use habits, and amounts of technology owned could represent private data.

Multiple imputation (MI) - the process that generates values for the prompts which a respondent did not answer - is based on extant answers provided by that respondent. The Stata MI suite creates imputed values from the existing data through chained equations. Imputation creates “a small number, m, of copies of the data, each of which has the missing values suitably imputed…Estimates of parameters of interest are averaged across the m copies to give a single estimate” (Royston, 2004, p. 228). The mi estimate command estimates logit models and coefficients in this chapter.

The use of multiple imputations allows dependent variable data to be used that would be discarded; imputation of Social Side of the Internet survey data increased the sample size available to the social networking service usage regression by 36.84%, or 487 cases (Rubin, 2004). Gains of 469 (35.48%) were observed in the internet use regression and 328 (23.47%) and 657 (58.82%) cases were added to the generalized trust and political efficacy regressions respectively. 487 additional cases were utilized (36.84%) in the social capital model when the data set included imputed values. The N in each regression model is limited to those fully answering those questions comprising the dependent variable; this reduces the number of cases for the social networking service use regressions to 1,809. 1,718 respondents possessed some value for generalized trust, while 1,774 cases are enumerated in the political efficacy regressions. 1,484 observations exist comprising those survey respondents that answered the seven questions that comprise the social capital value.
### Table 3.3  Multiple Imputation Additions to Sample Size

<table>
<thead>
<tr>
<th>Variable</th>
<th>Imputed n</th>
<th>Cases Added</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Use</td>
<td>1791</td>
<td>469</td>
</tr>
<tr>
<td>SNS Use</td>
<td>1809</td>
<td>487</td>
</tr>
<tr>
<td>Community Group</td>
<td>2300</td>
<td>979</td>
</tr>
<tr>
<td>Church Group</td>
<td>2301</td>
<td>989</td>
</tr>
<tr>
<td>Professional Group</td>
<td>2295</td>
<td>976</td>
</tr>
<tr>
<td>Social Capital</td>
<td>1542</td>
<td>240</td>
</tr>
<tr>
<td>Generalized Trust</td>
<td>1718</td>
<td>328</td>
</tr>
<tr>
<td>Political Efficacy</td>
<td>1774</td>
<td>657</td>
</tr>
</tbody>
</table>

Twenty imputations are generated for every instance of missing data in respondents’ survey responses. The MI process assumes that data conform to a multivariate normal distribution.\(^8\) Interaction variables, present in determinant models for social networking service usage, generalized trust, political efficacy and social capital, are passively imputed in the imputation. Ignoring the relationship between the constituent measures of the interaction in imputation underestimates the power of the interaction (White, Royston, and Wood, 2010, p. 386). The number of imputations \(m\) required needs to be large for multiple imputation to approximate the model generated if data for all cases were available. Graham, Olchowski and Gilreath (2007) claim that the number of imputations required is influenced by the complexity of the variables modeled. Scholars should err on the safe side and include a value of \(m\) that exceeds 5; Graham, Olchowski and Gilreath (2007) explain through a Monte Carlo simulation that a greater \(m\) will increase the power of and decrease the standard errors present in regressions utilizing

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\(^8\) Mean imputation does not allow for sufficient randomness to be present in imputed survey values (Graham, Olchowski, and Gilreath (2007)).
imputed data. Modern computers generate and employ imputed data sets in seconds, ensuring there is no reason to keep a model’s $m$ low (Graham, Olchowski and Gilreath, 2007, p. 212). Imputation values can be created through the exploration of a smaller set of variables, but the MI modeling used allows for data to be generated using values from all other independent variables in the regression.

Each empirical chapter proposes regression models that add supplementary variables to preceding equations. A nested models framework is utilized in the analysis, as the concatenation of each variable suite evaluates the situational power of explanatory factors. The framework allows for comparison of variable significance and goodness of fit. An initial estimation tests the explanatory power of demographic and internet variables. The first model includes measures for a respondent’s age, education, income, racial identification, community type, gender and internet usage, and is constant through all examinations of dependent variables. The final regression includes interaction variables supported by previous literature. Interaction variables gauge the significance of nuanced relationships between explanatory variables in the determination of the dependent variable, and are included in equation modeling to evaluate whether the impact of internet or social networking service intensity on a dependent variable is conditional on the level of a demographic factor. The SNS usage model includes internet usage interactions with age and educational achievement.

The Social Side of the Internet survey inquires about group membership; a variety of group affiliations were chosen as they were identified in social capital literature as those providing members with additional social capital. Determinants of social
networking usage are compared to the factors proposed to influence respondents’ decisions to affiliate with community groups, church groups, and professional and trade organizations. Brown and Brown (2003) and Martes and Rodriguez (2004) discuss church groups and the accumulation of social capital, while Gregson et al (2004) and Viswanath, Steele, and Finnegan (2006) focus on the ability of community groups to foster social capital accumulation. de Janasz and Forret (2007) and Skeels and Grudin (2009) discuss the importance of professional and trade associations in social capital creation.

**Dependent Variable**

The variable measuring SNS use is coded with a “1” if the respondents reported that they have used social networking and a “0” if not. The inclusion of determinant models exploring whether respondents use the internet or associate with groups allows comparison of relevant explanatory variables against those influencing the decision to use social networking services. The variable capturing internet usage is scored as a “1” if the respondent utilizes the internet and “0” if no usage has occurred. The questions comprising group affiliation are similar; a respondent is active in or does not affiliate with (0) a community, church, or professional group. Group activity is measured through the response to “Please tell me if you are currently active in any of these types of groups.

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9 The internet activity variable utilizes data from the internet usage question in the Social Side of the Internet survey. Values for any amount of internet use are collapsed into a 1 value, while respondents that do not use the internet have a 0 value.
or organizations, or not (Pew 2010, 2).” A respondent is coded as a “0” if they are not active in the group and as a “1” if they are.

*Independent Variables*

Explanatory variable descriptions begin with a brief discussion of the effect of the digital divide upon variable cohorts. This description continues with the relationship of the explanatory variable on the dependent variables. Understanding the impact of the digital divide on demographic factors allows for social networking’s effect on social capital and civic engagement to be evaluated. If the elderly lagged behind other groups in computer ownership and internet access rates during the peak of the digital divide, their ability to be a “digital citizen” decreases due to a late adoption of computers and the internet. If the age variable is significant as a determinant of generalized trust, political efficacy, or social capital, possessing knowledge about how online civic engagement has been affected would allow for more precise policy prescriptions to be made. Demographic variables are hypothesized to affect the utilization of social networking services.

*Age*

Age is a factor contributing to the digital divide observed in the “Falling Through the Net” studies; the 1995 and 1998 reports proffer that elderly citizens and younger respondents possess significantly lower amounts of internet usage and computer ownership than those observed at the mean age (NTIA, 1999). Chaudhuri, Flamm, and Horrigan (2004) provide support to the hypothesized relationship between age and
purchasing basic Internet access in their examination of 2001 Pew Internet and American Life Project data. In Chaudhuri, Flamm, and Horrigan’s work, an increase in respondent age significantly decreases the possibility of purchasing Internet access when included alongside demographic variables.

Corrocher (2010) declares that respondent age is negatively associated with the probability of social networking website use. Nam (2011) utilizes 2008 Pew data, observing a highly significant and negative relationship between age and SNS use. This association is present even in those individuals that are “more politically engaged and committed than younger generations” (Nam, 2011, 145). Adoption of social networking services at older ages is contingent on individual interpretation of SNS utility and the fear of technology that a respondent holds (Maier, Laumer and Eckhardt, 2011). The age variable is broken into ten-year cohorts after an initial 18-25 designation.

Education

The “Falling Through the Net” studies collectively reported a robust correlation between educational achievement, computer ownership, and internet connectivity (NTIA, 1995; NTIA, 1998; NTIA, 1999). Chaudhuri, Flamm, and Horrigan (2004) ascertain a persistent and positive association between a respondent’s level of educational attainment and their propensity to purchase internet services. After high school, each subsequent level achieved provides a significant bump to the probability of acquiring internet services. A respondent’s level of education is striated into divisions indicating a sub-9th grade education to a high school or college diploma or a post-graduate degree.

Income
Income disparities between groups are described as contributing to divergent internet penetration rates (NTIA, 1998, p. 3, NTIA, 1999). Chaudhuri, Flamm, and Horrigan (2004) relate that higher income levels are positively associated with a respondent’s decision to pay for internet access. Qureshi and Trumbly-Lamsam (2008) posit that income levels matter in regards to purchasing broadband internet. The cheaper option to broadband internet - dial-up suffers from multiple drawbacks. For those that have a dial-up connection, the internet service provider’s phone line may be busy, one may be unable to pay for an additional personal phone line, and a number of websites are slow (or are inaccessible) for those without broadband. Nam (2011) discovers a weak and negative (p < .10) association between income and social networking service activity. Income is an essential factor in determining the probability of Internet use in political information queries; higher amounts of income led to an increased chance for a respondent to search online for political information (Min, 2010). Income is measured in $10,000 increments up until the $50,000 level, subsequent level increase limits to $75,000, $100,000, and $150,000.

Internet Use

Internet use is proposed to represent a separate phenomenon from social networking service use. Gangadharbatla (2008) polls undergraduates in order to understand underlying factors determining acceptance and use of social networking services. Internet self-efficacy exhibits a positive correlation with the respondent’s desire to join social networking websites in Gangadharbatla’s study alongside a respondent’s aspiration to belong and their self-esteem. Min (2010) finds strong (p < .001) evidence
that possessing greater online skills positively impact an individual’s ability to politically use the internet. Sylvester and McGlynn observe a strong and significant relationship between home internet use and successful governmental contact (2010, p. 70). Nam’s (2011) examination of the democratic divide’s effects during American election cycles was unable to show an effect for high-speed internet use on social networking site activity. The inclusion of an internet use variable is proposed to represent an explanation for social networking site activity. Internet use is measured in terms of work and home frequency; respondents can claim they do not use the internet or that it is used at various frequencies; the measure captures internet activity on a monthly, weekly, daily, or hourly basis.

Technology

Technology ownership influences the probability that a respondent utilizes social networking services; owning greater amounts of internet-capable technology is proposed to increase internet and social networking use through increasing online access. Min (2010) contributes to the internet and digital divide literature by suggesting that “the simple availability of the new technology is not enough to encourage the meaningful use of technology for politics” (Min, 2010, p. 32). There is a paucity of research examining the effect of greater amounts of technology ownership on internet access and social networking service usage. Modern technology (e.g. cell phones, laptops) provides respondents with methods to maintain familial, friendship, and associational links. A significantly higher potential to utilize social networking services and the internet are proposed to exist at higher levels of technology ownership. The technology variable is
generated as a tally of binary responses marking laptop ownership or utilization of email, text messaging, instant messaging, or internet access on a cellular phone.

**Racial Affiliation**

Without government support in facilitating civic engagement, racial groups established explicit support organizations (National Association for the Advancement of Colored People, American Indian Movement, American-Arab Anti-Discrimination Committee) alongside church and professional groups. These groups facilitate meaningful civic discourse for those individuals that they represent. Affinity groups provide networking opportunities and represent the potential of racial affiliation to have a direct and positive impact on the digital divide.

The “Falling Through the Net” studies encountered racial breaks in computer ownership and Internet access: “Black households in central cities and particularly rural areas have the lowest percentages of PCs, with central city Hispanics also ranked low” (NTIA, 1995, p. 4). This relationship increased in magnitude throughout the last years of the millennium (NTIA, 1998; NTIA, 1999). Talukdar and Gauri (2011) show a significant and negative relationship between African-American race and home Internet access. Chaudhuri, Flamm, and Horrigan (2004) find insufficient support for African-American racial identity as a determinant of internet purchasing; their variable for Asian-American race is significant and positively associated. Qureshi and Trumbly-Lamsam’s (2008) research on Native Americans provides evidence that the digital divide is applicable for minority groups in the United States. Indicator variables measuring
African-American and Hispanic racial membership are 1 when a respondent claims racial affiliation with the race and 0 when they do not.

**Geographic Setting**

Considerable evidence supports geography as a contributing factor to the digital divide (Qureshi and Trumbly-Lamsam, 2008). Telephone line availability provided an early explanation for the exclusion of citizens from the Internet; remote groups like the Native Americans did not have the same accessibility as did those that lived in urban areas, owing to decreased amounts of telephone infrastructure by the former (NTIA, 1995). The geographic type variable describes a respondent’s community type – a respondent can declare that they live in a large city (coded as a 3), a suburb (2), a small city (1), or a rural area (0).

**Sex**

Min (2010) finds support in 2004 General Social Survey (GSS) data that gender is a significant determinant of “political internet use,” which he breaks into information seeking and discussion behaviors conducted online (27). A variable measuring a respondent’s gender is coded with a 1 value when the respondent is female and a 0 value when the respondent is male.

**Results**

Logit regressions are generated utilizing the imputed data set. Imputation of explanatory variable data increases the sample size of the regression; 1,809 data points
are utilized in the examination of factors influencing social networking usage, while 1,791 cases are employed in the internet use regression. 2,300 cases exist with a response for community group affiliation, 2,301 respond to the church group association inquiry, and 2,295 respondents completed the prompt concerning professional group identification. The number of data points in each regression differ as imputation only generates values for the independent variables; the dataset available to each dependent variable is limited to the number of respondents that answered questions concerning their membership in the analyzed group.

The F-value of the social networking usage regression (54.63) is large enough to reject the null hypothesis that the collection of variables present has no effect on whether an individual uses social networking websites. Models exploring the determinants of internet use and group affiliation are able to reject a null hypothesis; in these cases, the large F-scores (35.33 for internet use, 18.71 for community group, 13.00 for church group, and 38.50 for professional group affiliation) indicate that the factors included in the regression significantly influence the dependent variable.
Table 3.4: Regression Results, Usage and Association Model

<table>
<thead>
<tr>
<th>Model</th>
<th>SNS Use</th>
<th>Int. Use</th>
<th>SNS Int. Var</th>
<th>Community Group</th>
<th>Church Group</th>
<th>Professional Group</th>
</tr>
</thead>
<tbody>
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<td>Age</td>
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<td>-</td>
<td>.291</td>
<td>.185</td>
<td>.114</td>
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<td>(.04)</td>
<td>(.05)**</td>
<td>(.07)**</td>
<td>(.04)**</td>
<td>(.03)**</td>
<td>(.04)**</td>
</tr>
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<td>.636</td>
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<tr>
<td></td>
<td>(.05)**</td>
<td>(.07)**</td>
<td>(.05)**</td>
<td>(.05)**</td>
<td>(.04)**</td>
<td>(.06)**</td>
</tr>
<tr>
<td>Income</td>
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<td>.100</td>
<td>.042</td>
<td>.147</td>
</tr>
<tr>
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<td>(.03)</td>
<td>(.05)</td>
<td>(.03)**</td>
<td>(.03)**</td>
<td>(.02)</td>
<td>(.03)**</td>
</tr>
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<td>Afr-American</td>
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<td>(.17)**</td>
<td>(.17)*</td>
<td>(.14)**</td>
<td>(.19)</td>
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<td>-.229</td>
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<td>(.23)</td>
<td>(.19)**</td>
<td>(.23)</td>
<td>(.17)</td>
<td>(.19)</td>
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<td>.086</td>
<td>.063</td>
<td>-.148</td>
<td>.007</td>
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<tr>
<td></td>
<td>(.05)</td>
<td>(.07)*</td>
<td>(.05)</td>
<td>(.05)</td>
<td>(.04)**</td>
<td>(.06)</td>
</tr>
<tr>
<td>Sex</td>
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<td>.506</td>
<td>.148</td>
<td>.232</td>
<td>.027</td>
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<td></td>
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<td>(.13)</td>
<td>(.10)**</td>
<td>(.11)</td>
<td>(.09)**</td>
<td>(.11)</td>
</tr>
<tr>
<td>Technology</td>
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<td>.170</td>
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<td>(.04)**</td>
<td>(.05)**</td>
<td>(.04)**</td>
<td>(.04)**</td>
<td>(.04)</td>
<td>(.04)**</td>
</tr>
<tr>
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<td>-.004</td>
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<td>.104</td>
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<tr>
<td></td>
<td>(.02)</td>
<td>(.05)**</td>
<td>(.02)</td>
<td>(.02)</td>
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<td>(.02)**</td>
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<td>Internet*Age</td>
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<td>.016</td>
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<td>.016</td>
<td>.104</td>
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<td></td>
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<td>(.01)</td>
<td>(.01)</td>
<td></td>
<td>(.01)</td>
<td>(.02)</td>
</tr>
<tr>
<td>Constant</td>
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<td>.673</td>
<td>.440</td>
<td>1.93</td>
<td>-4.32</td>
</tr>
<tr>
<td></td>
<td>(.32)</td>
<td>(.39)**</td>
<td>(.42)</td>
<td>(.37)**</td>
<td>(.30)**</td>
<td>(.38)**</td>
</tr>
<tr>
<td>F-Score</td>
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<td>35.33</td>
<td>43.79</td>
<td>18.29</td>
<td>12.94</td>
<td>37.67</td>
</tr>
<tr>
<td>N</td>
<td>1809</td>
<td>1791</td>
<td>1809</td>
<td>2300</td>
<td>2301</td>
<td>2295</td>
</tr>
</tbody>
</table>

* if p<0.05; ** if p<0.01, *** if p<.001
The results of the initial regression support a number of the demographic variable hypotheses. A respondent’s age and internet usage levels possess a significant and negative relationship with the probability of social networking website use. Educational achievement and technological ownership level were positively associated with the probability of social networking usage. African-Americans and males were statistically less likely to utilize social networking websites. Measures for income level and Hispanic racial identification failed to reach significance in the initial regression.

Demographic factors were highly significant in the decision to utilize the internet. Variables possessing a positive and significant influence on internet utilization included age and African-American descent, while educational achievement, income level, and technology ownership were substantial negative influences. The measure for neighborhood type was weakly significant, those in more urban areas possessed a substantial decrease to the probability of internet use.

The constituent factors influencing the decision to connect to the internet are separate in type and sign from those modifying social networking service usage. Hispanic racial identity and a respondent’s gender were insignificant determinants of internet use. African-Americans and older respondents were significantly more likely to utilize the internet. Educational achievement, income level and technology represent significant and negative deterrents to the potential of internet utilization. Results in this regression support the hypothesis that the digital divide maintains relevancy in explaining the variation in internet usage; the “Falling Through the Net” studies consistently found that
African-Americans and the elderly lagged behind similar cohorts in computer ownership and internet use.

The determinants found to impact internet usage differ from those influencing social networking usage; there exists no variable present in these regressions that maintains significance and sign in both equations. Those factors predating internet usage are similar to those modifying the decision to affiliate with traditional groups. The decision to associate with an organization is influenced by demographic factors; rises in age and educational achievement increases the probability of group affiliation throughout each examination, while income and technological levels are a positive force in community and professional group associations. The chance to associating with a church group is increased if a respondent resides in urban areas, is a female or an African-American. Professional groups differ from community or church groups in that internet usage is associated with a significant decrease in the probability to affiliate.

**Table 3.5: Predicted Probabilities, SNS Use**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Minimum-&gt;Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.537</td>
</tr>
<tr>
<td>Education</td>
<td>.204</td>
</tr>
<tr>
<td>Income</td>
<td>.012</td>
</tr>
<tr>
<td>Afr-American</td>
<td>-.147</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-.146</td>
</tr>
<tr>
<td>Geograph. Type</td>
<td>-.063</td>
</tr>
<tr>
<td>Sex</td>
<td>.125</td>
</tr>
<tr>
<td>Internet</td>
<td>-.124</td>
</tr>
<tr>
<td>Technology</td>
<td>.443</td>
</tr>
</tbody>
</table>

The predicted probability of a respondent’s SNS usage increases by .172 from the lower to upper limits of educational achievement. Females possess a 12.5% (.125) greater
probability of social networking usage than males; movement from ownership of no
technology to most possible technology owned bolsters the probability of using social
networking services by 44.3% (.443). The move from rural to urban areas modifies a
respondent’s probability to utilize social networking by 9% (.0900).

A number of variables in this regression decrease a respondent’s probability to
use social networking services. When other variables are kept constant, a shift from the
youngest age bracket (18-25) to the oldest (66 and up) decreases the probability of using
social networking services by 53.7% (.537). Increasing the intensity of internet use from
the minimum to the maximum degraded the probability of social networking usage by
-.124. African-Americans (-.147) and Hispanics (-.146) were about 15% less likely to
access social networking websites. While insignificant, an increase in income level and
urban status lowers the overall chance of using social networking services by 1.2% (.012)
and 6% (.063).

Interaction variables are established through the multiplication of internet use
with socioeconomic variables (age and education); the inclusion of interaction variables
test whether the effect of internet use is different at disparate levels of age and
educational achievement. The internet * age variable fails to reach significance while the
internet * education variable is significant at the .05 level. The significant effect of the
internet use * education variable supports the hypothesis that the effect of internet use
varies at each level of educational attainment. The change in the probability of social
networking service usage for respondents not utilizing the internet is represented by the
equation \( Y_{SNS} = .673 + .173 \text{educ} \). At a medium level of internet usage, \( Y_{SNS} = -.605 + \)
.269_{educ}, and at high levels of internet usage, the equation capturing the interaction effect is \( Y_{SNS} = -1.883 + .365_{educ} \)^10. As the level of internet utilization increases, the effect of educational achievement on the probability of social networking increases. Respondents spending large amounts of time online have the probability of using social networking affected to a greater degree by increases in educational attainment.

Variations exist in the set of factors influencing the probability of social networking service use, internet use, and group affiliation. A larger number of factors modify the probability of using social networking services when compared to the variable influencing group affiliation or internet use. The determinants of internet use are similar in type and sign to those influencing the decision to join community, church, or professional organizations. The probability of social networking website use is influenced by factors differing from those significant to overall internet use and offline group identification, establishing SNS usage as a separate form of civic engagement from internet usage and offline group affiliation.

Conclusion

Social networking services are a nascent phenomenon, and are potentially efficacious in alleviating digital divide and civic engagement issues. Social networking service determinants are substantially different than those determining internet use or offline group affiliations. The increased number of relevant determinants for social

^10 The author conceptualizes a “medium” amount of internet usage with a value of 6, and a “high” amount of internet usage as a 12.
Networking site usage is proposed to be a pathway providing disenfranchised individuals with the ability to connect with the government; if more factors matter, a wider selection of policies can be instituted by the government to bolster civic engagement.

Understanding a respondent’s probability to use social networking services has important implications for political scientists and policymakers. The availability of Internet access has increased since the initial wave of digital divide research but there remains a substantial subset of citizens whom are not active on SNS. Understanding influential factors facilitating or prohibiting access to social networking services is essential, as social networking services are hypothesized to promote civic involvement and the broadcasting of beliefs to a larger audience.

Citizens of all ages, races, educational achievements, income levels, and geographical areas can connect to the internet, but members of certain groups remain systematically excluded from voicing concerns on this service. Users of social networking services might do nothing more with their accounts than sign onto games and applications, answer surveys, post pictures, or regale their friends with daily updates, but the mere utilization of SNS provides users with the ability to broadcast their opinions to a wider audience than would otherwise be possible. Direct democracy can manifest itself online in many ways – “a political chat room, electronic voting, mobilization of virtual communities, and revitalizing of participation in public affairs” – and social networking represents one path to civic connectivity (Chen and Kidd, 2008, p. 133).

Findings made in this dissertation are important to policymakers as they showcase the factors limiting and bolstering social networking service access. As municipalities,
cities, and states move away from websites and forums towards interactive forms of community service, using and possessing a healthy attitude towards social networking services by policymakers is essential. Citizens want to utilize and gain proficiency in these services (NTIA, 1995, p. 4). Policymakers have an onus to provide citizens with equitable access and can provide this ability through workshops, skill-sharing and educational events. Ensuring equitable access to social networking services should be on the docket for any policymaker wishing to bolster democracy at the municipal, state, and national levels. The digital divide originally focused on disproportionate computer ownership and internet access rates. The democratic divide – a skills divide – remains prevalent alongside digital divide concerns; policy needs to concern itself with the mitigation of the gap’s effects while ensuring that citizens have constant access to internet-capable computers.

Factors relevant to joining a social networking service are drastically different to those contributing to internet use and group activity. The author claims that the calculus specific to social networking website utilization allows SNS users to avoid structural impediments to meaningful civic interaction; the effects of the democratic divide and the production gap are mitigated through social networking service usage. Social networking service use can facilitate direct democracy; a user can discuss candidates or proposed legislation, post political news, or establish a group on these websites. Understanding the factors relevant to bring users onto social networking services will assist with the investiture of a larger proportion of citizens into American civic life. The subsequent
chapter examines what these relationships mean for a citizen’s generalized trust, personal efficacy, and social capital.
Chapter Four

SOCIAL NETWORKING’S INDIRECT EFFECT ON SOCIAL CAPITAL: GENERALIZED TRUST AND POLITICAL EFFICACY

The preceding chapter explored the determinants of social networking website use and compared the factors to those influencing the decision to utilize the internet or join a group. This chapter includes the intensity of social networking service use as an independent variable, exploring the fashion by which SNS influence social capital. Social networking services have the potential to influence civic engagement in indirect and direct fashions. The intensity of social networking service usage is believed to impact a respondent’s level of generalized trust and political efficacy, attitudes which are proposed to impact social capital.

Intensity of social networking service use is hypothesized to influence social capital in indirect and direct fashions. Social networking website use is hypothesized to increase generalized trust and external political efficacy; these positive externalities bolster overall engagement in civic society (Zhang et al, 2010, p. 86). Social networking intensity is hypothesized to significantly modify a respondent’s generalized trust and political efficacy attitudes. Social networking services possess a unique relationship with a respondent’s investiture in civic society, occupying a transformative potential for political and social institutions.

Social networking services are proposed to be a solution for waning civic engagement (Park, Kee, Valenzuela, 2009; Pasek, More, Romer, 2009; Zhang, Johnson,
Seltzer, 2010). The explanation for the permanence of the lack of involvement varies; Putnam describes the membership decline in voluntary organizations as a primary cause, while Putnam and Nie propose that increased ownership in new technologies removes citizens from discourse (Putnam, 2001a; Nie, 2001). SNS are a potential solution to this lack in involvement as the services provide a way in which users can make their voices heard, increase users’ perceptions of self, and bolster the amount of trust held toward strangers (de Zúñiga et al, 2012).

Social networking services are less complex than discussion boards or e-mail frontends. This ease of use decreases the severity of the democratic divide and the production gap, as the learning curve necessary to achieve proficiency on SNS is considerably lower than that present in existing forms of communication. Social networking services are hypothesized to be a solution to the systemic exclusion of individuals and groups from civic engagement.

Traditional forms of group affiliation have not been able to significantly impact the severity of the democratic divide nor do they address the prevalence of the production gap. Social networking websites constitute a unique phenomenon allowing excluded groups to bridge these impediments. Regressions modeled in this section explore the factors contributing to a respondent’s generalized trust and political efficacy attitudes. Generalized trust influences civic engagement on a scale separate from possessing a direct relationship with social capital, as greater trust levels increase political consumerism at the individual and regional levels (Neilson and Paxton, 2010, p. 15).
Political efficacy attitudes are important to civic engagement; negative attitudes toward the ability to meaningfully interact with government decrease the probability of political involvement. Research into the factors influencing political efficacy provides valuable insight into what matters and what policies can be undertaken to address these concerns. Social networking websites are hypothesized to uniquely modify generalized trust and political efficacy attitudes.

Early research attempts to isolate the effects of social networking services on these attitudes (Keele, 2007; Nam and Sayogo, 2011). This research expands social capital literature as it examines and evaluates the potential of social networking websites to facilitate access to the civic sphere. This analysis asserts that the intensity of social networking website use is significant in the determination of generalized trust and political efficacy attitudes, and remains influential when additional explanatory variables are included. Exploring the pathways affecting these attitudes will provide important results to policymakers and political scientists. Clarifying the attitudinal effect of social networking websites allows for the generation of policies that bridge the divide between citizens, community, and government. Understanding the direction and significance of these relationships is important as it provides nuance to the larger problem of decreased citizen involvement.

This section evaluates the role of social networking services in the modification of generalized trust and personal efficacy attitudes when demographic and group-focused factors are included. The chapter contextualizes these findings alongside previous social capital research; hypotheses are presented describing the purported direction and
significance of relevant variables. Model descriptions follow, attempting to capture the contributing processes for each of the dependent variables. Regression results are presented and the conclusion follows, placing the findings into political science and policymaking contexts. The chapter concludes with policy recommendations based off of these findings.

**Literature Review**

This section examines the evolution of research regarding the determinants of generalized trust and political efficacy attitudes.

*Generalized Trust*

An individual’s trust toward strangers (generalized trust) represents a significant influence to social capital. The relationship existing between trust and social capital is variously defined. Putnam (1993) posits that trust creates social capital alongside “norms of reciprocity”, while Fukuyama (1995) conceives of trust as identical to social capital. Uslaner (2002) distinguishes between generalized trust and moralistic trust; generalized trust is transmitted through familial ties while moralistic trust is an assumption about the motivations of others. Social capital is intimately related to generalized trust, as generalized trust is defined as the attitudes regarding strangers’ trustworthiness (Uslaner, 2002). Social networking is posited to influence social capital in indirect (generalized trust and political efficacy) and direct fashions.

Research supports the hypothesis that generalized trust impacts civic engagement; citizens believing that strangers are trustworthy tend to place increased trust in their
government (Hall in Rothstein 443). The process in which generalized trust influences social capital has been described as a directional model (Wu, Wang, Liu, Hu and Hwang, 2012). This model posits that political efficacy leads to trust in government, which contributes to greater social capital accumulation (247). Putnam (1994) theorized that trust possesses transformative potential in regards to government efficiency. It is assumed that better attitudes towards generalized trust and political efficacy enable a respondent to take the steps to become involved in civil society.

Positive trust attitudes influence government in a number of ways. Individuals believing that strangers are trustworthy are able to more easily join mutual organizations. Trust is associated with a more efficient government (Citrin, 1974; Craig, Niemi, and Silver, 1990), an increase in the positivity of attitudes towards government (Rothstein, 2008), overall societal happiness (Putnam, 2000; Lane, 2001; Dekker and van den Brock, 2004), stronger economies (Fukuyama, 1995), and citizen investment in society (Brehm and Rahn, 1997). An increase in trust has been associated with greater judicial efficacy (Glaeser et al, 1999) and judicial capacity (La Porta et al, 1997)

Empirical research observes a significant relationship between generalized trust and civic engagement (Brehm and Rahn, 1997); Keele’s (2004) examination of the interplay between internet usage, social capital and trust provides support for the significance of trust as an social capital determinant; Park, Kee, and Valenzuela (2009) claim that generalized trust “facilitates associative behavior, fosters a strong civil society, and makes political institutions and officials more responsive” (p. 320). Research provides support for the hypothesis that generalized trust is influenced considerably by
socioeconomic factors including age, education, income, race, gender and the length of time spent in the neighborhood (Brisson and Usher, 2007; Rothstein and Stolle, 2008).

Previous research has posited the importance of demographic factors as contributing to generalized trust. Social networking services are hypothesized to provide respondents with a way to increase the trust that is held toward strangers. Individuals can use social networking websites in two ways; respondents can establish connections with individuals that would otherwise be strangers through casual games and activities (e.g. Farmville, random opponents on Words With Friends, hash tags on Twitter) or can organize along neighborhood lines (establishing a community group, initiating policy debates on a municipality’s wall). SNS use is believed to remain significant when variables capturing other methods of socialization are added. Generalized trust is hypothesized to be significantly affected through the intensity of social networking service use.

**Political efficacy**

Campbell *et al* (1954) describes political efficacy as the attitude by which “individual political action does have, or can have, an impact on the political process...political and social change is possible, and that the individual citizen can play a part in bringing about this change” (p. 187). Political efficacy is a facilitator of social capital; Bandura (1977) links better attitudes toward political efficacy to an increased number of positive outcomes.

Political efficacy is defined as the attitude held concerning the ability to meaningfully change society. This conception of political efficacy corresponds to the
external efficacy described by Finkel (1985). When examining the relationship between political participation and efficacy, Finkel affirms that external political efficacy is the assurance that the system is responsive to citizens’ desires. Acock et al (1985) test whether existing surveys measuring political efficacy accurately capture the phenomenon, pointing to the necessity of accurate modeling and techniques in any research implementing data utilizing these types of questions.

Internet usage is shown to impact external political efficacy attitudes (Kenski and Stroud, 2006; Lee, 2006). The activities which one is involved while online matter; Lee finds that visiting governmental agency websites decreases overall political efficacy, while possessing internet access is associated with increased efficacy (Kenski and Stroud, 2006, p. 184). Kenski and Stroud’s research utilizes 2000 NAES data and cannot determine whether early adopters of the internet possess better political efficacy attitudes by virtue of using the internet or if they held these attitudes before they utilized the internet. A complicating factor between internet usage and political efficacy is the respondent’s environment (Jennings and Zeitner, 2003). Jennings and Zeitner find that individuals that were not online received a significant increase to political efficacy levels by learning how to use the internet.

A respondent’s intensity of social networking service use is hypothesized to significantly affect political efficacy. The creation of groups, placement of articles and information graphics, and writing posts on a social networking profile contribute to positive political efficacy attitudes. The opportunity cost existing to express political
opinions (holding meetings, printing out fliers, or writing emails) has decreased as social networking websites have increased in popularity.

Contributions to Research

Little research exists looking to examine the causal mechanism between social networking services and generalized trust and political efficacy attitudes. Models proposing to describe this relationship cannot capture the experience currently available on social networking websites. Methodological problems exist in trust and efficacy literature; previous efforts have not standardized a typology of social networking usage. Gangadharbatla (2007) focuses on the relationship between social networking and internet political efficacy, a measure which he defines as the ability to successfully complete online tasks. Woolley and Peterson (2012) contextualize political efficacy in terms of health, surveying Facebook group members to determine whether group membership has modified their potential to live healthily. This chapter contributes to research by examining current data and evaluating the effect of social networking services on attitudes when controls for individual-level and group affiliation factors are included. Variables for the level of internet and social networking website activity by a group are present in regression models to evaluate the explanatory power of the group in individual social capital generation. Variables included in this model evaluate whether individuals benefit from online group activities or from their own intensity of social networking usage.
Hypotheses

This section of the chapter presents hypotheses regarding the relationships proposed to exist between response variables and predictors. Hypotheses possess direction and magnitude; this section presents models proposed to explain variation observed in the dependent variables.

H1: Social networking website use by the individual will exhibit a significant and positive effect on generalized trust.

H2: Social networking website use by the organization will be a significant and positive predictor of generalized trust.

H3: A respondent’s social networking website use is a significant and positive predictor of external political efficacy.

H4: A group’s social networking website use is a significant and positive predictor of external political efficacy.

Demographic Model

\[ \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Education} + \beta_3 \text{Income} + \beta_4 \text{African} + \beta_5 \text{Hispanic} + \beta_6 \text{Geo. Type} + \beta_7 \text{Sex} + \beta_8 \text{Years Lived} + \varepsilon \]

Social Networking Model

\[ \beta_0 + \beta_1 SNS + \beta_2 \text{Age} + \beta_3 \text{Education} + \beta_4 \text{Income} + \beta_5 \text{African} + \beta_6 \text{Hispanic} + \beta_7 \text{Geo. Type} + \beta_8 \text{Sex} + \beta_9 \text{Years Lived} + \beta_{10} \text{Internet} + \beta_{11} \text{Group SNS} + \beta_{12} \text{Group Internet} + \varepsilon \]

Interaction Variable Model

\[ \beta_0 + \beta_1 SNS + \beta_2 \text{Age} + \beta_3 \text{Education} + \beta_4 \text{Income} + \beta_5 \text{African} + \beta_6 \text{Hispanic} + \beta_7 \text{Geo. Type} + \beta_8 \text{Sex} + \beta_9 \text{Years Lived} + \beta_{10} \text{Internet} + \beta_{11} \text{Group SNS} + \beta_{12} \text{Group Internet} + \beta_{13} \text{Pol. Group} + \beta_{14} \text{Lab. Group} + \beta_{15} \text{Spo. Group} + \beta_{16} \text{Grp. SNS} + \beta_{17} \text{Grp. Internet} + \beta_{18} \text{SNS*Age} + \beta_{19} \text{SNS*Education} + \varepsilon \]

Data & Methods

Values for the criterion and independent variables are generated from responses to the Social Side of the Internet survey. Stata 12.0 is utilized to create statistical models that evaluate hypotheses alongside competing explanations of variance; the Stata MI suite
is employed to impute data, while the mibeta command is utilized to estimate OLS regressions and process adjusted R-squared coefficients for each regression. Multiple imputation of Social Side of the Internet data is utilized as respondents are free to skip questions in the survey. Cases including missing data in the dependent variable are removed from the analysis. Data from 1,718 survey respondents is examined in regressions examining social networking’s role in modifying generalized trust. 1,774 cases exist in the models exploring the determinants of political efficacy attitudes. The respondents surveyed represent a collection of individuals roughly equivalent to the demographics of the United States (Pew 2011, p. 38).

Ordinary Least Squares (OLS) regression models are implemented alongside Maximum Likelihood Estimation (MLE) models to evaluate hypotheses regarding external political efficacy attitudes and the factors of social capital generation; an OLS regression possesses a model equation assuming the form of \( Y = \alpha + \beta x + \varepsilon \). In an OLS equation, \( Y \) represents the dependent variable, \( \alpha \) corresponds to the equation’s constant, \( \beta \) are the coefficients of the explanatory variables, \( x \) are the explanatory variables, and \( \varepsilon \) is the error term. OLS regression models test the significance of the collection of independent variables on a dependent variable. The Gauss-Markov theorem asserts that OLS models provide the best linear unbiased estimator for dependent variables possessing a range of values, due to small amounts of mean squared error in the equation (MSE) (Gill, 2001). Adjusted R-squared values are generated for each OLS regression; adjusted R-squared amounts approaching the upper bound explain additional variance over models possessing a lower score. This coefficient of determination is utilized as it
corrects the linear increase that occurs in an R-squared value when explanatory variables are added to a model.

**Dependent Variables**

The intensity of social networking service usage is hypothesized to significantly impact generalized trust and political efficacy attitudes. Demographic and group-centered variables are included in regressions as previous research has shown a significant impact by these variables on generalized trust and political efficacy attitudes. The inclusion of demographic and socioeconomic status variables evaluate their effect on generalized trust and political efficacy alongside intensity of social networking website use.

**Generalized Trust**

Generalized trust is defined as the belief that one’s neighbors will not cause harm and will work towards betterment of society (Newton, 2001). A respondent’s attitude toward trust is scored based on the answer to “Would you say that most people can be trusted or that you can’t be too careful in dealing with people?” (Pew 2011, p. 3). The truth variable is binary; a respondent believes strangers to be trustworthy (coded as 1) or untrustworthy (coded as 0) (Pew 2010, p. 1). Uslaner (2012) supports the single-question conception of generalized trust; while competing representations of generalized trust may include a battery of responses, Uslaner contends that the inclusion of additional elements beyond the trustworthiness question decreases the parsimony of a trust variable. A multiple-question generalized trust variable does not capture the titular concept as it is
defined in previous literature. The design of this measure allows for greater ease in the interpretation of the impact of the chapter’s explanatory variables on generalized trust (Uslaner 2012, p. 76).

A positive generalized trust attitude has positive externalities for the individual and the civil society; citizens with positive trust attitudes “are also more inclined to have a positive view of their democratic institutions, to participate more in politics, and to be more active in civic organizations” (Rothstein and Uslaner, 2005, p. 41). This conceptualization of generalized trust utilized in this chapter is parsimonious, as it focuses on a respondent’s attitude toward the trustworthiness of outsiders. The decision to operationalize generalized trust in this fashion is supported by Rothstein & Stolle (2008) and Uslaner (2012); the inclusion of respondents’ answers to questions about group affiliation or organizational pride would obfuscate the model’s intuitiveness. A respondent’s upbringing, socioeconomic status, and institutional affiliation will influence the probability that fellow citizens can be trusted; Rahn et al (2009) find that nearly 20 variables exhibit significant leverage on trust (p. 1651). An amount of trust in excess of distrust is hypothesized to lead to greater amounts of civic engagement.
Table 4.1 Directional Hypotheses, Generalized Trust

<table>
<thead>
<tr>
<th>Explanatory Variable</th>
<th>Effect on DV</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNS Use</td>
<td>+</td>
</tr>
<tr>
<td>Age</td>
<td>+</td>
</tr>
<tr>
<td>Education</td>
<td>+</td>
</tr>
<tr>
<td>Income</td>
<td>+</td>
</tr>
<tr>
<td>Internet</td>
<td>+</td>
</tr>
<tr>
<td>African-American</td>
<td>-</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-</td>
</tr>
<tr>
<td>Geographic Type</td>
<td>-</td>
</tr>
<tr>
<td>Gender</td>
<td>-</td>
</tr>
<tr>
<td>Internet Group</td>
<td>+</td>
</tr>
<tr>
<td>SNS Group</td>
<td>+</td>
</tr>
</tbody>
</table>

Demographic and internet-based variables are proposed to affect generalized trust attitudes. While Hetherington (2005) and Burke et al. (2010) observe a negative relationship between age and generalized trust, a greater amount of research has supported a monotonic and positive relationship.\(^{11}\) Increases in educational attainment and income levels will boost trust attitudes, while racial affiliation will decrease the probability of possessing a positive attitude concerning the trustworthiness of strangers. Trust levels will be increased through internet and social networking use at the individual and the group level; greater ability to associate and converse with those holding similar beliefs will increase the probability of positive trust attitudes. Higher crime rates and greater population density will decrease the probability of positive trust attitudes, while females will have a better chance of trusting strangers (Jacobs, 1961; Putnam, 2007).

\(^{11}\) Rothstein and Uslaner (2005) and Putnam (2007) are two works positing a positive relationship between age and trust; a full list can be found in the data and methodology chapter.
**Political efficacy**

Social networking research has explored the role of SNS in influencing political efficacy attitudes. Research has not explored social networking’s influence on political efficacy; extant research focuses on knowledge generation and transference of knowledge in online networks generating social capital (Chiu, Hsu, and Wang, 2006). This research points toward an association between greater SNS intensity and positive political efficacy attitudes (Valenzuela et al, 2009).

Political efficacy is calculated through an individual’s responses to questions about efficacy proposed in the Social Side of the Internet survey. A respondent’s propensity to initiate change is measured through their response to “How much impact do you think people like you can have in making your community a better place to live”; a response of no, small, moderate, or big amounts of change correspond to the range of possible responses (Pew, 2011, p. 3). Personal accomplishment is assessed through the response to “In the past 12 months, have you, personally, accomplished something through a group?” (Pew, 2011, p. 7) The political efficacy measure contains information regarding whether an individual has established an organization: “Have you, personally, ever created a group of your own, or have you never done this?” (Pew, 2011, p. 22). A measure for whether a respondent has assumed a leadership position in a group is included based on the response to “In the past 30 days, have you taken a leadership role in a group you are active in?” (Pew, 2011, p. 8). Answers from these questions are tallied to create a measure of political efficacy. Responses for each inquiry presented in the
variable range from 0 to 1, ensuring that the variable is equally influenced by constituting questions. A scale from 0 to 4 constitutes a respondent’s political efficacy.

Positive attitudes towards political efficacy are associated with individual and governmental gains. The ability to locate individuals possessing similar views or beliefs on social networking services may foster greater affiliation with society. Identification with users establishes in-group relationships which increase political efficacy. The opportunity cost of finding users with comparable beliefs is considerably lower with the functionality afforded by social networking services. Clicking on the “Suggestions” tab of Facebook takes users to pages for politicians, local businesses, and companies. “Liking” President Barack Obama provides immediate affiliation with 35.5 million individuals, while a sidebar shows a listing of friends sharing the same interest.

The opportunity cost to initiate civic actions is substantially less on social networking services. One can establish an event, foster discussion, and hold elections on an organization’s Facebook page with a few clicks and sentences. Holding these functions at a brick and mortar location would increase the opportunity cost of civic actions when compared to similar activities conducted on a social networking service. For the traditional group, a venue needs to be booked, minutes need to be printed, and members have to ferry themselves to a central location. This larger opportunity cost precludes civic action for a large segment of the population. The options available to institutions utilizing Facebook provide numerous options to decrease the operational workload associated with running a group. Email contacts can be added through a batch uploading tool, friends can be invited to the organization, and a variety of administrative
roles and posting rights can be assigned (comments may require moderation and profanity can be blocked).

The potential for successful actions is greater in an online than in a physical format. The opportunity cost to attend meetings or continue discussions on social networking services is lower than that present in traditional and online associations; a member can respond to a thread at their own leisure without leaving their profile homepage. Group visibility on social networking is inordinate compared to offline and online services; one can miss phone calls, meetings, emails, or threads on a bulletin board while notifications and postings by an association are presented on the service’s home screen. As the time spent on social networking services increases, the power possessed by these groups will increase.

Table 4.2: Directional Hypotheses, Political Efficacy

<table>
<thead>
<tr>
<th>Explanatory Variable</th>
<th>Effect on DV</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNS Use</td>
<td>+</td>
</tr>
<tr>
<td>Age</td>
<td>+</td>
</tr>
<tr>
<td>Education</td>
<td>+</td>
</tr>
<tr>
<td>Income</td>
<td>+</td>
</tr>
<tr>
<td>Internet</td>
<td>+</td>
</tr>
<tr>
<td>African-American</td>
<td>+</td>
</tr>
<tr>
<td>Hispanic</td>
<td>+</td>
</tr>
<tr>
<td>Geographic Type</td>
<td>-</td>
</tr>
<tr>
<td>Sex</td>
<td>+</td>
</tr>
<tr>
<td>Years Lived</td>
<td>+</td>
</tr>
<tr>
<td>Internet by Group</td>
<td>+</td>
</tr>
<tr>
<td>SNS by Group</td>
<td>+</td>
</tr>
</tbody>
</table>

Demographic variables are included in determinant models as previous research has posited that they are significant in influencing political efficacy attitudes. The presence of demographic and group-based factors test whether social networking website
intensity can maintain significance in a fully-specified model. This inclusion presents additional information about the constellation of factors influencing political efficacy attitudes. Political efficacy is proposed to be modified by a number of demographic variables; an increase in the age, educational attainment, duration of time in neighborhood, and income levels of respondents are believed to increase the external political efficacy levels of respondents. Due to the nomination of Barack Obama, African-American and Hispanic identity will be associated with an increase in political efficacy attitudes. Living in a larger city or metropolis will have a negative pressure on political efficacy: the ability for an individual to modify a municipality’s agenda or influence will decrease as an area’s population grows. Females are hypothesized to possess better political efficacy attitudes due to their majority status and the continued prominence of supportive affinity groups.¹²

Internet and social networking usage factors are proposed to affect political efficacy. Internet and social networking utilization by the individual and their groups will uniformly increase political efficacy attitudes. Greater amounts of time spent online provide users with applied education regarding the policies and procedures required to impact the civic sphere. Social networking usage facilitates the creation of networks, decreasing the opportunity cost for action and increasing the probability of achieving desired policy outcomes. Internet and social networking usage by a respondent’s group increases the political efficacy of members through rapid dissemination of information.

¹² Examples of these groups include the Feminist Majority Leadership Alliance (FMLA), National Organization for Women (NOW), and the National Women’s Political Caucus (NWPC).
Table 4.3: Bivariate Regression on Social Capital Generation, Generalized Trust

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient (S.E.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalized Trust</td>
<td>.304 (.11)**</td>
</tr>
<tr>
<td>Constant</td>
<td>2.73 (.08)*****</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.005</td>
</tr>
<tr>
<td>N</td>
<td>1520</td>
</tr>
</tbody>
</table>

Table 4.4: Bivariate Regression on Social Capital Generation, Political Efficacy

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient (S.E.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political Efficacy</td>
<td>.611 (.04)***</td>
</tr>
<tr>
<td>Constant</td>
<td>1.07 (.12)***</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.163</td>
</tr>
<tr>
<td>N</td>
<td>1506</td>
</tr>
</tbody>
</table>

Generalized trust and political efficacy are hypothesized to contribute to social capital generation. Previous works have conceptualized trust as a component of social capital (Putnam, 2003; Fukuyama, 1995). Generalized trust is a quantity related to social capital, but it represents a separate phenomenon. Positive trust attitudes increase the probability that individuals will associate with strangers. Associations made with strangers lead to greater networking and increased social capital.

To evaluate this hypothesis, bivariate regressions evaluate the explanatory power of each attitude in explaining social capital variation. Generalized trust ($\beta = .304$, $p < .01$) and political efficacy ($\beta = .611$, $p < .001$) are significant influencers of social capital.
scores. Social capital is represented at a range of values between 0 and 7, representing a summation of respondent has (1) or has not (0) received a policy outcome.\textsuperscript{13}

The generalized trust measure captures .005 of variation while a respondent’s political efficacy explains .163 of social capital variation. While the power of political efficacy is considerably greater than that of generalized trust in explaining social capital variation, both factors are significant and in the expected direction. If the intensity of social networking service use achieves significance in a regression model, social networking can be considered to impact social capital in direct and indirect fashions. Subsequent regressions in this chapter evaluate the effect of social networking on generalized trust and political efficacy attitudes.

The multi-determinant models for a respondent’s political efficacy are established through a series of ordinary least squares (OLS) regressions, while those focusing on generalized trust utilize maximum likelihood estimation (MLE). OLS regressions assess the explanatory role of hypotheses concerning social networking services and the modification of a respondent’s political efficacy. The statistical import of explanatory variables and direction of relationships is scrutinized; empirical tools used in these models are appraised while a discussion of the chapter’s results follow.

\textsuperscript{13} The Social Side of the Internet Survey inquires about 7 activities, including problem solving at the local and higher levels, the provision of funds or support to those in need, having a supported candidate win an election, and increasing awareness and funding for a social issue. The social capital variable utilized in this chapter is the same as that utilized in the final empirical chapter.
Independent Variables

Independent variables included in this chapter evaluate whether variation in demographic factors, group affiliations, and respondents’ adoption and utilization of internet services represent significant determinants of attitudinal phenomena. The variables are evaluated singularly and as a whole for significance. Models test the power of explanatory variables in fitting the variation of generalized trust and political efficacy data. The initial regression tests the explanatory value of demographic variables, consisting of factors measuring a respondent’s age, sex, education, income, internet use, race (African-American and Hispanic-American), and geographic context (years spent in an area and neighborhood type). The second regression contains demographic variables, adopting measures for individual and group use of the internet and social networking websites.

The attitudinal and social capital models append interactions capturing the interaction between social networking usage intensity and a respondent’s age or educational achievement. The proposed determinants of political efficacy are evaluated using identical explanatory variables. The chapter concludes with a presentation of the findings of each regression and a discussion of their relevancy to the hypotheses presented in the chapter.

Intensity of social networking

Intensity of social networking (Mean = .56, S.D. = 1.09) usage is hypothesized to exhibit a positive and significant relationship with a respondent’s generalized trust and political efficacy attitudes, and to maintain this association through all model
Intensity of social networking service use is proposed to affect social capital creation in a positive and significant fashion when it is included as a social capital determinant. The intensity of social networking service usage is a highly significant determinant of generalized trust (Valenzuela, Park, and Kee, 2009, p. 892) and civic participation (Zhang et al., 2009, p.86). Intensity of social networking service use is scored with successive increases if a respondent uses Twitter, Facebook, has placed association news on Facebook or has posted on Twitter about the organizations with which they associate.

**Age**

Previous research is murky regarding the role of age in generalized trust attitudes; literature has observed increases in age with more positive attitudes towards the trustworthiness of others (Moy and Scheufele, 2000; Rothstein and Uslaner, 2005; Kumlin and Rothstein, 2005; Putnam, 2007. Hetherington (2005) and Burke et al (2010) provide evidence that a respondent’s age exhibits a strong negative relationship with social capital, supporting the claims made by Glaeser (2001) and Kawachi (1997). Age is associated with political efficacy; older respondents in the Hero and Tolbert examination of 1988-1998 NES post-election surveys hold more negative political efficacy attitudes (2004, p. 119).

The relationship between education and trust has been explored extensively; a significant and positive relationship exists in the modification of the latter by the former

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14 Social networking website usage captures whether a respondent utilizes social networking services, and is a dependent variable in the initial empirical chapter. The intensity of social networking usage corresponds to the amount of user activities conducted on social networking services, and is an independent variable in the generalized trust, political efficacy, and social capital chapters.
(Brehm and Rahn, 1997; Moy and Scheufele, 2000; Marschall and Stolle, 2004). Nie, Junn, and Stehlik-Barry (1996) state that education has a considerable effect on civic engagement. Helliwell and Putnam (2007) utilize Nie, Junn, and Stehlik-Barry’s data, and are unable to find a significant relationship between educational achievement and social capital. Corrocher (2010) finds no support for the claim that education affects SNS intensity.

Hetherington includes a variable for educational attainment in a generalized trust determinant model that possesses a highly significant effect alongside competing factors for demographics, policy satisfaction levels, and political thermometers (1998, p. 801). Educational achievement at the high school and collegiate levels exert considerable strength in influencing generalized trust attitudes (Rothstein and Uslaner, 2005, p. 62; Anderson, 2010). The education level of a respondent’s parents significantly impacts social trust attitudes in a similar fashion (Valenzuela, Park, and Kee, 2009, p. 892).

**Income**

Form and Huber (1971) examined white and African-American voting habits, proposing that income would significantly impact political efficacy levels. The pair found that a greater proportion of white respondents held a high attitude regarding their political efficacy at each subsequent income level. The political efficacy of African-Americans was influenced in a substantial fashion by income; 35% of respondents coded at a “poor” income level viewed themselves as highly efficacious with only 21% of those at the “middle” income possessing high political efficacy (Form and Huber, 1971, p. 669). McCluskey et al (2004) do not observe any significant relationship between a citizen’s
income level and actual or desired levels of political efficacy (445). Research has observed a significant and positive relationship between income level and generalized trust (Moy and Scheufele, 2000; Putnam, 2007; Anderson, 2010).

**Internet Use**

Online networks allow users to easily find information about political topics and others possessing compatible beliefs. Larger amounts of internet use are proposed to increase the positivity of trust and political self-efficacy attitudes.

**Racial Affiliation**

Considerable research has observed negative attitudes towards the trustworthiness of others when comparing African-Americans to other races (Brehm and Rahn, 1997; Hetherington, 1998; Marschall and Stolle, 2004; Rothstein and Uslaner, 2005; Putnam, 2007). Research has presented a strong negative correlation between African-Americans and external political efficacy (Hero and Tolbert, 2004, p. 119). The historical relationship between race and political efficacy attitudes indicated that African-American and Hispanic-Americans possessed greater negativity in these attitudes as these races have experienced systemic exclusion from civic engagement. Alvarez et al proposed that the presence of Barack Obama in the presidential election of 2008 increased the political efficacy of non-White voters (30). As the data collected by the Social Side of the Internet survey follows the 2008 presidential election, non-white racial identity (African-American and Hispanic-American) is hypothesized to positively impact generalized trust and political efficacy attitudes.
**Geographic Setting**

The geographic setting of a respondent is proposed to be significant in the determination of social networking usage and attitudinal factors. Increased crime rates in urban areas will decrease the level of generalized trust possessed by inhabitants of these areas (Woldoff, 2002). Political efficacy levels of urban inhabitants will be lower vis-à-vis rural citizens, as government representatives will be beholden to the policy desires of larger segments of the population.

**Years Lived**

An additional variable is added to the generalized trust and political efficacy regressions. The years lived variable is hypothesized to exhibit a linear and positive relationship with trust; additional years spent in the same area will lead to an increase in the probability of possessing a positive trust attitude. Respondents will become familiar with those inhabiting their community; conversations may occur during yard cleaning, a lost cat may be returned or tools borrowed and returned. As one lives in an area for an increased amount of time, their overall attitude towards the trustworthiness of strangers will increase.

The duration of time spent in an area is included in this chapter’s regression equations as it is proposed to influence generalized trust and political efficacy attitudes. Marschall and Stolle (2004) promote the neighborhood as one of the contributing factors integral to the development of trust attitudes. The hypothesized relationship between the amount of years lived and trust is proposed to be positive; those living in the same area

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15 “Years lived”, “duration in neighborhood” “years spent in the neighborhood” and “time spent in neighborhood” all represent the same phenomenon.
for longer periods have established relationships with their neighbors and can more easily place trust in strangers (Coleman, 1988, p. S119). Time spent in a neighborhood will directly and significantly impact a respondent’s perception of their political efficacy. Living in an area for an extended period will increase the respondent’s familiarity with their surroundings and capacity to organize. The Years Lived variable captures the length of time that a respondent has lived in the same area, possessing values from 0 to 4; a respondent living in their current domicile for less than a year is coded as a 0, while those living in the same location for more than twenty years are coded at a 4. Values exist for 1-5 year (1), 6-10 year (2), and 11-20 year (3) residencies. 

Sex

Putnam (2007) reports a significant difference in the positivity of trust attitudes between genders; females possess a greater propensity for positive attitudes towards their neighbors than males. Kenski and Stroud (2004) observe a significant relationship between gender and external political efficacy: this relationship remains significant when a control for internet use is included (184). Females are proposed to possess greater amounts of social capital than males as their exclusion from civic engagement in previous generations necessitated the establishment of affinity organizations (Zúñiga, Jung, and Valenzuela, 2012, p. 326). The continued relevance of organizations such as the National Organization for Women (NOW) boosts the probability of positive political efficacy for females.

Interaction Variables
Interaction variables are included to examine the differential effects of demographic variables at various levels of internet usage and social networking intensity. Interaction variables multiplying age or educational achievement scores with their level of social networking intensity are added to the regression equation. While interaction terms decrease the parsimony of a regression equation and increase the complexity of model interpretation, the inclusion of interaction variables is valuable as their addition analyzes whether the social capital generation process is significantly different between younger and older respondents or at various levels of educational achievement (Pfeil, Arjan, and Zaphiris, 2009). Age and education and social networking service use interactions are presented in the final regression examining social capital determinants. Their presence bolsters the explanatory power of the model, exploring the hypothesis that citizens generate social capital in a fundamentally different way at disparate demographic levels; research poses that individuals possessing distinct educational achievements garner social capital on social networking services differently than their lesser-achieving counterparts (Pfeil et al, 2009, p. 654).

Regression Diagnostics

The variance inflation factor (VIF) is calculated for each OLS regression model. This factor tests the multicollinearity existing between independent variables in a regression. VIF scores above the cutoff provide evidence for multicollinearity. VIF

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16 The mivif command is utilized here as the vif command does not generate coefficients for multiple imputations; the module may be downloaded through the ssc install command.
scores in excess of a 4.0 cutoff indicate an increased standard error and increased probability of Type II errors in a model. Each regression modeled possesses a VIF score at the variable and equation level below the 4.0 cutoff.

The dissertation measures the significance of independent variables at the $P < 0.05$, 0.01, and 0.001 levels. Factors that reach a $p$-value of 0.05 but are in excess of 0.01 are weakly significant determinants of the dependent variable. Those variables that possess probabilities at the 0.01 $p$-level are considered to be significant determinants of the dependent variable, while those that are at levels under the 0.001 mark are highly significant factors in the regression. The sample size in each equation is sufficiently large to decrease the probability of Type II error.

Data Issues

The empirical evaluation of social networking’s role in civic engagement is limited by the data that exists. The Social Side of the Internet survey inquires about whether a user is active on Facebook and Twitter and if the organization with which they associate uses those services. In the survey, a question about the length of time that a respondent spends on the internet is present, but no such question exists about the quantity of social networking use. The Pew Internet and Social Life Project probes respondents about whether the internet plays a role in achieving a variety of certain goals, but the survey does not ask questions regarding the effect of social networking usage on policy outcomes.

17 Variables in excess of the .05 cutoff but below a .10 $p$-value are reported in footnotes.
Results

This section describes the data employed in the regression models and specifies the significant factors in each regression. Models are established to examine the impact of demographic variables on generalized trust and political efficacy attitudes. Subsequent equations append social networking variables to the demographic model. An alternative model specification considers the role of interactions in explaining changes in each attitude. The interaction variables implemented capture a respondent’s social networking site use at different educational achievements and ages. The significance of explanatory variables, coefficients and standard errors are reported for each model. The section concludes with a description of the policy implications borne by the chapter’s findings.

Generalized Trust

Table 4.5: Regression Results, Generalized Trust

<table>
<thead>
<tr>
<th>Variable</th>
<th>Demographic Model</th>
<th>Proposed Model</th>
<th>Interaction Var.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.089(.03)**</td>
<td>.110(.03)**</td>
<td>.110(.04)****</td>
</tr>
<tr>
<td>Education</td>
<td>.275(.04)***</td>
<td>.260(.05)***</td>
<td>.257(.05)***</td>
</tr>
<tr>
<td>Income</td>
<td>.124(.02)***</td>
<td>.120(.02)***</td>
<td>.121(.02) ***</td>
</tr>
<tr>
<td>Afr-American</td>
<td>-.611(.15)***</td>
<td>-.613(.15)***</td>
<td>-.613(.15)***</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-.676(.18)***</td>
<td>-.682(.18)***</td>
<td>-.683(.18)***</td>
</tr>
<tr>
<td>Geograph. Type</td>
<td>-.128(.05)**</td>
<td>-.134(.05)**</td>
<td>-.134(.05)****</td>
</tr>
<tr>
<td>Sex</td>
<td>-.182(.09)*</td>
<td>-.196(.09)*</td>
<td>-.196(.09)***</td>
</tr>
<tr>
<td>Years Lived</td>
<td>-.071(.04)</td>
<td>-.068(.04)</td>
<td>-.068(.04)</td>
</tr>
<tr>
<td>Internet</td>
<td>-.006(.02)</td>
<td>-.006(.02)</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>.095(.06)</td>
<td>.083(.15)</td>
<td></td>
</tr>
<tr>
<td>Networking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group SNS Use</td>
<td>.012(.11)</td>
<td>.012(.11)</td>
<td></td>
</tr>
<tr>
<td>Group Int. Use</td>
<td>-.017(.06)</td>
<td>-.017(.06)</td>
<td></td>
</tr>
<tr>
<td>Soc. Net*Age</td>
<td>-.003(.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soc. Net*Educ.</td>
<td>.006(.04)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-.985(.23)***</td>
<td>-.973(.28)***</td>
<td>-.970(.29)****</td>
</tr>
<tr>
<td>F-Score</td>
<td>24.59</td>
<td>15.16</td>
<td>13.21</td>
</tr>
<tr>
<td>N</td>
<td>1718</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Social networking service intensity at the individual and the corporate level is hypothesized to substantially increase the probability of possessing a positive trust attitude. Social Side of the Internet Survey data allows the null hypothesis that a respondent’s social networking website use has no effect on generalized trust attitudes to be rejected. The fully-specified model supports the hypothesis that social networking service intensity impacts generalized trust in a significant fashion.

Demographic variables comprise those included in the initial regression, and exhibit significant relationships in the determination of generalized trust attitudes (F = 24.59, p < .0000). A respondent’s residence mattered; those in urban settings possessed a decreased trust level (β = -.128, p < .01). Identification as an African-American (β = -.611, p < .001) or a Hispanic-American (β = -.676, p < .001) led to a decrease in trust. A positive shift in a respondent’s age (β = .089, p < .01), educational achievement (β = .275, p < .001) and income (β = .124, p < .001) were all associated with a greater potential of possessing a positive trust attitude. When all other variables are kept constant, a respondent’s sex is significant (β = .182, p < .05); females possess significantly more trust than male counterparts. The years lived variable (β = -.071) had an insignificant influence on generalized trust.

The model continued to significantly influence trust attitudes (F = 17.20, p < .0000) when variables for a social networking use and internet activity were added. Variables for the age (β = .110, p = .01), educational achievement (β = .260, p < .001), income (β = .120, p < .001), geographic type (β = -.134, p < .01), African-American (β =
.613, p < .001) and Hispanic (β = -.682, p < .001) racial identity, and sex (β = -.196, p < .001) of a respondent maintained their significance and direction. Measures for years lived, social networking usage, and internet usage are insignificant individual-level determinants of generalized trust attitudes; group-focused measures (internet and SNS utilization) were insignificant as a contributor to trust attitudes. The alternative specification of the full generalized trust model contains interaction variables evaluating a synergetic effect between social networking service usage and demographic factors (F = 13.21, p < .0000). Neither interaction variable reached significance in the regression model; social networking’s role in generalized trust attitudes is constant throughout variations in age and educational achievement.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Minimum-&gt;Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.153</td>
</tr>
<tr>
<td>Education</td>
<td>.311</td>
</tr>
<tr>
<td>Income</td>
<td>.227</td>
</tr>
<tr>
<td>Afr-American</td>
<td>-.155</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-.170</td>
</tr>
<tr>
<td>Geograph. Type</td>
<td>-.101</td>
</tr>
<tr>
<td>Sex</td>
<td>-.048</td>
</tr>
<tr>
<td>Years Lived</td>
<td>-.094</td>
</tr>
<tr>
<td>Internet</td>
<td>-.048</td>
</tr>
<tr>
<td>Social Networking</td>
<td>.014</td>
</tr>
<tr>
<td>Group SNS Use</td>
<td>-.045</td>
</tr>
<tr>
<td>Group Int. Use</td>
<td>.065</td>
</tr>
</tbody>
</table>

The years lived and social networking usage variables are significant at the .10 cutoff.
As the interaction variables do not achieve significance or increase the F-test statistic, the proposed model excludes these measures. Trust attitudes increase by .153 as one moves from the youngest to oldest age category and by a probability of .311 when a similar shift in educational attainment is observed. A respondent’s income level achieved a significance relationship with generalized trust; the probability of possessing a positive trust attitude increases by a total of .227 when income increases from the minimum to the maximum levels. Racial affiliation decreased the probability of trusting strangers by .155 for African-Americans and .170 for Hispanic-Americans. When competing variables were held constant, the probability of trusting strangers was .101 lower for those living in urban areas compared to those inhabiting rural areas. Females possessed a smaller chance (.048) than males to believe that citizens can be trusted. Internet usage (-.048), duration of time in an area (-.094), and a group’s utilization of internet (.065) and social networking (-.045) measures insignificantly influenced the probability of possessing a positive generalized trust attitude.
Political efficacy

Table 4.7 Regression Results, Political Efficacy

<table>
<thead>
<tr>
<th>Model</th>
<th>Demographic</th>
<th>Proposed Model</th>
<th>Interaction Var.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.043(.02)</td>
<td>.011(.02)</td>
<td>.013(.03)</td>
</tr>
<tr>
<td>Education</td>
<td>.266(.03)**</td>
<td>.221(.03)***</td>
<td>.207(.04)***</td>
</tr>
<tr>
<td>Income</td>
<td>.045(.02)**</td>
<td>.027(.02)</td>
<td>.027(.02)</td>
</tr>
<tr>
<td>Afr-American</td>
<td>.430(.10)***</td>
<td>.437(.10)***</td>
<td>.437(.10)***</td>
</tr>
<tr>
<td>Hispanic</td>
<td>.082(.13)</td>
<td>.044(.13)</td>
<td>.044(.13)</td>
</tr>
<tr>
<td>Geograph. Type</td>
<td>-.042(.03)</td>
<td>-.059(.03)</td>
<td>-.060(.03)</td>
</tr>
<tr>
<td>Sex</td>
<td>.072(.07)</td>
<td>.049(.07)</td>
<td>.049(.07)</td>
</tr>
<tr>
<td>Years Lived</td>
<td>.020(.03)</td>
<td>.033(.03)</td>
<td>.033(.03)</td>
</tr>
<tr>
<td>Social Networking</td>
<td></td>
<td>.101(.04)**</td>
<td>.046(.10)</td>
</tr>
<tr>
<td>Group SNS Use</td>
<td>.034(.07)</td>
<td>.034(.07)</td>
<td></td>
</tr>
<tr>
<td>Group Int. Use</td>
<td>.080(.04)**</td>
<td>.081(.04)*</td>
<td></td>
</tr>
<tr>
<td>Soc. Net*Age</td>
<td></td>
<td>-.005(.02)</td>
<td></td>
</tr>
<tr>
<td>Soc. Net*Educ.</td>
<td></td>
<td>.020(.02)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.88(.17)***</td>
<td>1.77(.20)***</td>
<td>1.80(.22)***</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.069</td>
<td>.089</td>
<td>.089</td>
</tr>
<tr>
<td>N</td>
<td>1774</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* if p<0.05; ** if p<0.01, *** if p<.001

Demographic measures significantly explain the variation in external political efficacy attitudes (F = 16.54, p < .0000), allowing for the null hypothesis for the model to be rejected. Variables measuring a respondent’s educational achievement, income level and racial identification (African-American) reach significance. An increase in education by one level leads to a .266 augmentation to a respondent’s political efficacy (p < .001); each increase in income boosted political efficacy expectations by .045. When other variables are held constant, African-American identification highly enlarged perceptions (.430) of political efficacy at the .001 level. Hispanic racial identity, neighborhood type and duration, and gender were insignificant determinants of political efficacy. The demographic model explained .069 (6.9%) of the variance encountered in the data.
The second regression model included variables for a respondent’s intensity of social networking use, social capital, and their group’s internet and social networking website use \( (F = 13.94, p < .0000) \). Variables for educational achievement \( (p < .001) \) and African-American racial identity remained significant at the .001 level; an increase in education bolstered efficacy by .221, while African-American respondents possessed political efficacy values .437 higher than white respondents. Measures for age, income level, Hispanic racial identification, neighborhood type, gender, and duration in area were insignificant determinants of political efficacy.

The suite of internet and social networking service use variables possessed a highly significant relationship with political efficacy. Internet usage by a respondent was significant at the .05 level; each unit increase in internet use decreased political efficacy attitudes by .024. A one-unit increase in social networking intensity increased attitude positivity by .101, while internet usage by an organization led to a .080 per-unit increase in efficacy. Organizational social networking utilization failed to achieve significance at the .05 level. The inclusion of these variables in the model lead to a .020 change in the adjusted R-squared value; .089 of the variation present in the Social Side of the Internet study was forecasted by this model. Interaction variables are added to the previous model but do not achieve significance at the .05 level. The adjusted R-squared value achieved by the equation does not increase when interactions are included. The model adopted in this chapter excludes interaction variables to maximize the model’s parsimony while decreasing the complexity of coefficient interpretation.
Findings

The intensity of social networking service use by the individual is a significant determinant of external political efficacy. Evidence supports the proposed relationship between social networking service utilization and external political efficacy, but does not observe a significant effect of social networking intensity on generalized trust attitudes. Social networking presents a very weak ($p < .10$) influence to generalized trust when factors for demographics and group affiliation are present.

The author contends that the modification of generalized trust attitudes occurs over a longer time period. The null result of social networking intensity observed in the creation of generalized trust attitudes is important as this relationship supports the contention that a citizen’s trust is formed through longer-term familial and societal interactions. Social Side of the Internet respondents have not used social networking for a sufficient enough time to modify trust attitudes in a significant fashion. Actions conducted on the internet and social networking services utilized by associations do not significantly impact trust or political efficacy attitudes.

Political Scientists

Social networking’s effect on attitude creation is germane to political scientists as it provides a potential solution to the decreasing civic participation and government trust levels discussed in Putnam (2003). The dissertation provides early evidence for the relationship between social networking services and political efficacy. These findings support social networking services as a potential curative for civic engagement concerns,
including those disproportionately affecting certain classes - the digital divide and production gap.

Social networking services provide a significant modification to political efficacy, providing pathways through which the effect of the digital divide and production gap can be diminished. Creating an account and spending time on social networking services provides users with skills that they require to be involved civically. The ability to choose the content placed on a wall or locating friends possessing similar interests are unique to social networking services when compared to traditional or online forms of organization. Social networking services exist as potential facilitators to civic engagement. Those using social networking websites possess increased potential for improved perceptions of political efficacy; users can connect with their civic representatives in a facile and capable way.

Policymakers

Exploring the constellation of factors influencing generalized trust and political efficacy attitudes has important implications for policymakers. The chapter’s findings provide information and tactics to policymakers to decrease the severity of the democratic divide and the production gap. The question posed about generalized trust contains a response – “it depends” – meriting follow-up inquiries to better understand the relationship between trust and social networking intensity. Subsequent inquiries could question whether strangers at varying demographics (e.g. age, sex, gender) are trustworthy or could ask whether different circumstances (e.g. a back alley, a highly-
trafficked area) would modify a respondent’s calculus towards the trustworthiness of individuals.

While social networking represents a significant determinant of generalized trust only at the .10 level, policymakers could impact the social capital possessed by members of their community by taking steps to bolster trust. The Brimfield, Ohio police department has actively taken up social networking services as a way to increase overall trust. On the department’s Facebook profile, Chief David Oliver initiates discussion and responds to concerns directly. With the citizens of Brimfield able to directly contact a representative of their government, they likely possess an amount of trust beyond that of inhabitants of a comparable municipality without a social networking venue.

A respondent’s perception of external political efficiency is significantly raised by greater intensity of social networking service use; previous research posits that efficiency and social capital are connected. Evidence from the Social Side of the Internet dataset supports the hypothesis concerning social networking intensity and political efficacy. Policymakers desiring to open dialogue with constituents would benefit if they provide citizens with tools (education, computer access) facilitating access to social networking services and the skills to meaningfully use them. Understanding how to use these services as a government representative is imperative for those wishing to decrease the prevalence of differential access for their constituents.

While the generalized trust variable is generated through a respondent’s answer to “would you say that most people can be trusted or that you can’t be too careful in dealing with people”, considerable amount of literature exists privileging multi-question trust
variables over singular question measures; Soroka et al (2006) establish a comprehensive 8-point measure providing additional information about a respondent’s trust attitudes. The inclusion of additional questions concerning trust in subsequent surveys would allow scholars to examine whether the findings presented in this chapter would be supported with an increase in information. The inclusion of additional questions to the Social Side of the Internet Survey would allow for differentiation between types of social networking use and the specific types, intensities, and amounts of trust and political efficacy generated through these activities. The establishment of a longitudinal study with additional observations or a geographically diffuse survey sample would increase the generalizability of the findings.

Conclusion

Explanatory variables representing generalized trust and political efficacy attitudes are significant when included in bivariate regressions with social capital. Social networking services are hypothesized to influence perceptions of generalized trust and external personal efficacy. The evaluation of Social Side of the Internet survey data provides support for an indirect effect of social networking intensity on social capital, as political efficacy attitudes are significantly determined by social networking intensity. Social networking intensity maintains significance and direction as a political efficacy determinant when variables for demographic and internet factors are added. The exploration of these proposed relationships provide relevant findings to political scientists
and for policymakers, as they provide potential ways to address differential access issues in the civic sphere.

Popular conceptions of civic engagement (Putnam, 1995a) envision the internet (and by extension, social networking services) as a similar technology to television; the internet allows users to “turn on, tune in, [and] drop out.” While Facebook is primarily used to comment on daily minutia, play casual games, and keep in touch with friends and family, social networking websites can assist in group affiliation, the promotion of specific political and social causes, and a direct connection to government representatives. Social networking services provide a potential way to bolster perceptions of political efficacy, no matter the age, race, education, income or the technological prowess of a citizen.

The intensity of social networking service utilization effects political efficacy in a highly significant fashion. SNS intensity possesses a weakly significant effect on generalized trust attitudes at the $p < .10$ level. Trust attitudes are resistant to change, and social networking services have not been widely used to the degree to impact trust in a substantive fashion. Zaller (1992) explains the inflexibility of political attitudes in his Receive, Accept, Sample (RAS) model; the RAS model proposes that information will be selected through a process of shortcuts. While active on social networking websites, individuals may ignore statuses, news posts, and policy stances (e.g. abortion, LGBT rights) which they do not agree.

Understanding the relationship between SNS intensity and the dependent variables in the modification of trust and efficacy attitudes is important for policymakers
and political scientists. Previous research indicates that political participation by younger generations is declining. Putnam (2000) theorizes that the weakening of civil society in the United States can be explained in part by a lack of youth involvement. Then-Senator Barack Obama’s 2008 presidential campaign heavily utilized social networking in youth outreach; this focus contributed to the largest gap between Democratic and Republican identification in voters of the 18-29 age bracket observed in an election cycle (Pew, 2008).

Policymakers interested in providing equitable governmental access can promote social networking service education and install greater capacity for SNS usage in public places. Results provide evidence that those using social networking websites possess a better attitude towards their ability to enact meaningful change. Social networking services matter in regards to determining political efficacy attitudes. By providing facilities and fostering user skills on these services, policymakers can ensure that citizens stay content and involved. The full specification of the determinant model provides evidence for the hypothesis that social networking services statistically influence political efficacy. Ensuring that citizens believe that their actions matter is indispensable in fostering civic engagement and social networking websites are a way to bolster this attitude. Social networking websites facilitate interaction between individuals of varying economic, racial, education, income, and age cohorts. As political efficacy attitudes increase in positivity, greater civic engagement will occur.

Social networking services maintain their relevancy as they continue to impact the American social fabric. The ability of social networking websites to assist with
constructing and modifying trust and efficacy attitudes will increase in the future. Social networking services are able to provide individuals with the tools required to uproot the digital divide and the production gap. The ability to post in, join, and create groups on social networking websites provide a bridge over second-level divides. Intensity of social networking service activity significantly affects political efficacy; social networking websites influence these attitudes, representing an answer to the civic engagement problem effecting American society.
Chapter Five
THE THIRD PATH: SOCIAL NETWORKING AND A DIRECT PATH TO CIVIC ENGAGEMENT

A number of factors influence the intensity of social networking service use. After a citizen joins a social networking service, they create and build social capital in a fashion unique to these websites. Social networking mobilizes social capital indirectly through a relationship with external political efficacy. This chapter examines the impact of the intensity of social networking service use on the generation of social capital. A respondent’s amount of SNS usage is hypothesized to directly cultivate a respondent’s social capital. When a social networking intensity variable is included alongside demographic and group factors, social networking’s role in direct social capital creation is evaluated. Social networking services are conjectured to maintain significance alongside demographic and group-based explanations for social capital generation, significantly affecting social capital scores. The intensity of social networking service use is a significant and direct determinant of social capital; results presented in this chapter are important for political scientists and policymakers.

Social networking services have been shown to affect social capital (Valenzula, Park, and Kee, 2009, p. 892); SNS’s open-ended design allows ostracized groups the opportunity to advocate efficaciously. The omnipresence of these websites couples with increasing user relevancy to create a highly-mobile and fusible base. Recent examples
showcase social networking’s potential for change. Social networking services do not close; a citizen can network with like-minded individuals or announce concerns at their own leisure.

Social networking services create social capital in a fundamentally different configuration than other organizational types. Social networking services do not contain forum moderators, nor do they limit publications of ideas, stories, or columns to a subset of writers. To evaluate whether this chapter’s proposed framework increases explanatory power over previous social capital models, SNS use is included as a potential determinant of social capital; social networking intensity is hypothesized to remain significant as a social capital modifier when individual and group-based variables are considered.

The effect of social networking services in social capital creation is examined alongside a respondent’s demographics (age, race, household income, level of educational attainment, and gender), group affiliation, and internet use factors. A new structure for determining social capital is proposed where demographic, group-focused, and social networking factors are those influencing social capital creation. This new determinant structure allows for an accurate assessment of the factors affecting social capital. The multi-faceted framework provides policy avenues that may precipitate overall increases in social capital at the individual and community levels. Leaders could invest resources to establish a social networking presence for their organizations, which would allow workers to establish connections and express concerns. An examination into groups possessing larger amounts of social capital presents idiosyncratic qualities (best

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19 Examples of this potential for change include the Kony 2012 and Ron Paul 2012 campaigns.
cases) to policymakers which can then be transferred to the larger populace. Policymakers can create programs that would provide citizens with the skills to utilize social networking services in an efficacious manner.

Social networking services provide a unique pathway to meaningful civic engagement. The calcification of online news and media outlets along conventional lines exacerbates the skills divide existing among internet users. Exploring the proposed relationship between social networking services and social capital may bridge these democratic and second-level divides.

There exists a considerable portion of internet users that have not acquired the skills to voice their concerns online. A second segment of the population possessing considerable internet skills is precluded from asserting themselves due to a reduction in social news aggregators and the ability to access content production functions provided by current news websites. Social news websites, which allowed users to propagate content widely and vote stories to the front page, have decreased in number. Gnolia and Simpy ceased operations in 2010, while Showhype, Tagfoot, and Yahoo! Buzz all closed in 2011. Active social networking websites (Fark, Digg) – modified their functionality in ways that users’ ability to submit content decreased. The dominance of moderators and “power users”, those holding disproportionate authority compared to the rank-and-file user, reduce avenues to publishing content. The openness of social networking services can bridge the “production gap” described by Schradie (2011), representing the way through which excluded groups can organize and engage. Social networking’s structure affords users with unfettered access to meet, discuss, and tackle important social issues.
A literature review examines previous contributions to the social capital field, expanding on the effect of proposed social capital contributors including the intensity of social networking website usage. The chapter expands on the unparalleled position theorized held by social networking websites, and emphasizes how SNS can alleviate the digital, democratic, and second-level divides. A discussion of the methods utilized in this chapter follow the literature review; a set of regression models are proposed and evaluated utilizing data imputed from Pew’s Social Side of the Internet survey.

Hypotheses are presented concerning the potential effect of modeled variables on social capital. An initial model tests demographic variables proposed to exhibit a significant relationship with social capital. The second iteration of the model includes variables demarcating group affiliation, while a third model introduces variables for social networking and internet use to test hypotheses regarding social networking intensity. The results section concludes with the addition of social networking-based interaction variables into a final model. Results from each model demonstrate the effect of explanatory variables on social capital. The chapter’s results provide explication about the set of factors influencing a respondent’s social capital. A discussion about social networking services’ potential to alleviate democratic and second-level divides and structural impediments to civic access conclude the chapter.

The research question explores social networking services’ power when controlling for demographic and group-centered factors. If the mechanism through which social networking services generate social capital is substantively different from that employed by online or traditional (offline) groups, social networking services represent a
technique which could counter the democratic divide of Norris (2001) and the “production gap” of Schradie (2011).

Precedent social capital literature represents the framework by which social networking services can be spotlighted; literature examines social networking services’ effect on social capital at an earlier stage of SNS development (Steinfield, Ellison, Lampe, 2008; Subrahmanyam et al, 2008; Park, Kee, Valenzuela, 2009; Pasek, more, Romer, 2009). Earlier researchers surveyed undergraduate students. Through the application of Social Side of the Internet data, findings made in this chapter can be generalized to a larger context. This chapter investigates the differences existing between social networking services, online groups, and groups conducting business offline in the accumulation of social capital. Contrasting the explanatory power enacted by disparate types of associations evaluates the hypothesis that social networking services represent a unique phenomenon in social capital generation. Existing social capital literature is expanded upon through the examination of the role of social networking services in social capital generation and the important policy and political implications following from these results.

Literature has not considered the contemporary relevance of social networking services in the generation of social capital. This section represents an early effort to include SNS measures alongside individual and affiliation factors as social capital predictors. A respondent’s demographics, group affiliations, and social networking services are hypothesized to be significant contributors to social capital, establishing SNS intensity as a necessary inclusion alongside other social capital resources.
Conceptualization of social networking services as a constituent part of social capital creation is pertinent to policymakers. A significant and positive relationship would affirm that SNS represent a pathway to allowed disinvested citizens the ability to be involved in civic society. If the process by which social networking services generate social capital is different from that employed by traditional factors covered in social capital literature, the future of civic society may not be as desolate as it was described in Putnam (2000).

Literature Review

Proposing that social networking services would significantly influence social capital represents an addition to relevant literature. Current social capital literature falls into those focusing on demographic factors or groups as the primary contributors to social capital. Each conception provides theoretical traction in regards to the phenomenon of social capital, but the increasing relevancy of social networking services is not fully captured in existing frameworks. Social networking services are hypothesized to represent a separate phenomenon from the typology established by the literature, and do not fit easily into demographic or group-based explanations. A third school is proposed, stressing that the transformative potential of social networking services be considered alongside demographic and group-based factors. Adding a measure for the intensity of social networking usage will capture increased variation in social capital data when compared to previous models.
**Contributions to Social Capital Literature**

The explanatory power of social networking intensity is empirically tested using nationwide data, which has not occurred in previous literature. Social capital creation theories are expanded through empirical testing as social networking’s effect on social capital is compared to that exerted by competing factors. The explanatory power of social networking intensity is analyzed alongside offline and online group affiliation and internet usage; a distinction is drawn between the entirety of the internet and social networking services in regards to social capital generation.

Social networking is a distinct type of internet utilization with a free-form design; users organize, post news, or promote their opinions through status updates. Social networking services conform to Putnam’s (2000) conception of social capital generation as social networking services operate under and foster networking through specific norms. Social capital is generated by interactions on social networking websites through the placement of relevant news, informational posts, or opinions on a user’s profile. A user immediately broadcasts their interests in a public fashion. Social capital is generated when a respondent’s friends, family, or acquaintances respond to these missives.\(^{20}\) This chapter is important to literature as it builds upon earlier conceptions of social capital determinants, establishing social networking services as a vital addition to demographic and group concepts of social capital generation.

\(^{20}\) Depending on how a user set their privacy settings, any individual that possesses a profile may be able to read and respond to the user’s comments or conversations.
Hypotheses

H1: Demographic factors significantly modify social capital.

H2: Affiliation with a group significantly impacts a respondent’s social capital generation.

H3: Increases in social networking service intensity is associated with higher levels of social capital.

H4: A respondent’s intensity of social networking service use will remain significant when variables measuring demographic factors and group affiliations are included.

H5: Greater social networking service usage by a respondent’s group is associated with higher levels of social capital.

Dependent Variable

This model operationalizes social capital as the accumulated set of positive policy outcomes accruing to the individual. The Pew Research Center lists seven different policy outcomes – solving a difficult problem at local and larger societal levels, giving money or emotional support to those in need, providing necessary support for a candidate to win an election, or raising funds or awareness for a social issue – comprising the social capital variable. Respondents are asked whether their group achieved these goals; the social capital measure is generated by assigning a binary value to each activity. Every respondent in the dataset with a full complement of answers to the social capital inquiries possess a value for the dependent variable ranging from 0 to 7.
Independent Variables

Hypotheses for the proposed influence of independent variables are supported by statements about the significance and direction of the variable’s relationship with social capital. Social capital literature has posited the importance of demographics as contributing factors. Demographic variables are hypothesized to affect social networking utilization and the creation of social capital. Early social capital research (Hanifan, 1920; Schultz, 1961; Salisbury, 1969) focused on benefits received from individual and group interactions. This initial research separated into two schools in which social capital is conceptualized as a top-down (Schultz, Salisbury) or a bottom-up (Hanifan) phenomenon. Organizations are key contributors to social capital generation in the top-down approach; social capital is generated through associational attachments. The bottom-up conception theorized social capital generation as occurring through actions undertaken by individuals.

Contemporary literature maintains that demographic factors are significant determinants in social capital generation. Interactions with networks propagate larger social capital gains; the bottom-up view of social capital conceptualizes networks as established along age, gender, education, and related individual boundaries. Skocpol and Fiorina (1999) propose that differences exist between generations of United States citizens; earlier generations are hypothesized to inherently possess a different relationship with social capital than current ones.
Table 5.1: Directional Hypotheses, Social Capital Generation

<table>
<thead>
<tr>
<th>Explanatory Variable</th>
<th>Effect on DV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-</td>
</tr>
<tr>
<td>Education</td>
<td>+</td>
</tr>
<tr>
<td>Income</td>
<td>+</td>
</tr>
<tr>
<td>Internet</td>
<td>+</td>
</tr>
<tr>
<td>Technology</td>
<td>+</td>
</tr>
<tr>
<td>African-American</td>
<td>-</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-</td>
</tr>
<tr>
<td>Geographic Type</td>
<td>+</td>
</tr>
<tr>
<td>Sex</td>
<td>+</td>
</tr>
<tr>
<td>Internet Group</td>
<td>+</td>
</tr>
<tr>
<td>SNS Group</td>
<td>+</td>
</tr>
<tr>
<td>Political Group</td>
<td>+</td>
</tr>
<tr>
<td>Labor Group</td>
<td>+</td>
</tr>
<tr>
<td>Sports Group</td>
<td>+</td>
</tr>
<tr>
<td>Generalized Trust</td>
<td>+</td>
</tr>
<tr>
<td>Political Efficacy</td>
<td>+</td>
</tr>
</tbody>
</table>

**Social Networking Service Use**

The intensity of social networking service usage variable is proposed to exhibit a significant and positive effect on social capital. The variable is hypothesized to remain significant when included in regressions alongside demographic and group identification factors. Social networking services are designed to allow individuals the ability to outwardly express themselves and locate users possessing similar beliefs. SNS facilitate both group creation and attendance, decreasing the opportunity cost to be active in a group. A monotonic and positive relationship with social capital is expected, as increased use of social networking services grant familiarity with the services provided.

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22 To create a group on Facebook, one just needs to click on “Create a Page”. After this group is created, one can invite friends, give leadership powers to others, and initiate conversation threads.
A description of each explanatory variable begins with a brief discussion of the historical effect of the digital divide upon variable cohorts. This section discusses the relationship of the explanatory variable on the dependent variables. Understanding the impact of the digital divide on demographic factors permits evaluation of social networking’s effect on social capital and civic engagement. If the elderly lagged behind other groups in computer ownership and internet access rates during the peak of the digital divide, their ability to be a “digital citizen” decreases due to a late adoption of computers and the internet. If the age variable is significant as a determinant of generalized trust, political efficacy, or social capital, possessing knowledge about how online civic engagement has been affected would allow for more precise policy prescriptions to be made.

**Age**

The impact of age on social capital varies; older respondents can increase their level of social capital by virtue of a larger amount of network connections than those at lower age brackets. The tendency of older individuals to hold higher levels of social capital vis-à-vis younger respondents is explained by older respondents maintaining networks with wider circles of friends. Those at accelerated ages wield more power in their organizations and possess greater knowledge about how to achieve specific goals. A respondent’s age is proposed to impact social capital in a constant fashion as a direct contributor to social capital.
Education

Educational achievement has been shown to be positively and significantly related to social capital (Kawachi, 1997). As a respondent completes higher levels of education, increased educational attainment is associated with greater efficacy in social capital pursuits. The additional time spent at educational institutions aids in the creation and maintenance of networks, while the knowledge received at educational institutions facilitate access to the civic sphere. The tendency of respondents to network at higher levels of education (joining a fraternity during college, interning at a job) will increase social capital scores.

Income

Increases in income are proposed to positively and significantly relate to social capital. Greater financial resource possession by the individual is believed to facilitate social capital accumulation. Additional income allows funding for social issues and political candidates, advertising to be procured, and workers hired to raise awareness about a specific policy outcome. Burke et al (2010) provide evidence that increased income levels are linked to greater social capital accumulation.

Internet Use

The amount of time that a respondent accesses the internet will impact their social capital scores. Increases in internet use will be associated with higher levels of social capital. Greater familiarity with the internet provides respondents increased efficacy in location and affiliation with different subgroups and the achievement of personal goals. While internet use is purported to increase indirect contributors to social capital, the
prominence of the production gap will decrease the effect of internet utilization to insignificance in social capital determinant models.

Race

The racial identification of the respondent is proposed to effect social capital through indirect and direct pathways. African-American and Hispanic respondents are hypothesized to possess significantly smaller amounts of social capital. Members of these races were systemically excluded from meaningful civic engagement in *de jure* and *de facto* ways, inculcating in-group reliance. *De jure* limitations of African-Americans occurred in the Jim Crow laws of the 20th centuries, while an example of *de facto* limitations are the reduced quantity of phone lines present in urban settings (Falling Through The Net, 1995).

Geography Type

A respondent’s neighborhood is proposed to have a significant effect on social capital. When a respondent lives in increasingly urban settings, the geographical proximity of inhabitants will promote greater social capital creation. While urban life has exhibited a negative impact on civic engagement (Brehm and Rahn, 1997, 1012), neighborhood type is proposed to significantly determine social capital. Brehm and Rahn suggest those in urban areas control larger amounts of social capital. As one moves away from farmland and smaller cities towards urban areas, the amount of social capital one possesses will increase linearly. Respondents are hypothesized to have greater ease to

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23 Neighborhood type, geographic type, urban geography and neighborhood context represent the same phenomenon.
access to governmental resources when inhabiting urban settings; the proximity of
individuals and groups holding similar beliefs facilitates social capital growth.

Sex

To rectify historical exclusion from civic engagement, groups focusing on
women’s issues were founded and continue to assist females. The continued relevance of
these groups ensures greater ease for females to achieve policy desires. Programs are
created by these groups to assist their members, further increasing social capital. Males
do not have the same number of sex-focused affinity groups, and will have a statistically
smaller amount of social capital than a female when other variables are held constant.

Group Affiliation

The Social Side of the Internet Survey provides respondents the ability to identify
as a member of a variety of groups. The three types of groups chosen possess different
foci, time commitments, and requirements of their members. Group affiliation with labor,
political, and sport groups are included as explanatory variables as Putnam (2000)
conceptualizes groups as important contributors to social capital. Group affiliation has
important implications for the civic health of a society. Nie (2001) posited that eschewing
group socialization would decrease the amounts of social capital available to a citizen.

The effect of a change from no affiliation with a group to being in a group will
have an effect on a respondent’s social capital. Affiliation with a sports group will have a
weaker effect on social capital than that exhibited by either labor or political groups, as
sporting fans are hypothesized to have a large turnover due to bandwagon effects and
more casual in-group relationships. Labor unions will be a social capital boon to their
members, as a labor group deals with both job security concerns and political beliefs. Political groups are likely to exhibit a stronger relationship with social capital than that provided by labor or sporting groups. While it is true that political groups possess a narrower focus than other organizations, the importance of these issues to group members surpasses that of other groups. Sporting groups are comprised of fans from a wide array of backgrounds; a political group focuses on the furtherance of policy outcomes, and labor groups contain members privileging their occupation over leisure or political activities.

Membership in labor and political groups are hypothesized to have a positive and significant effect on social capital. A greater impact on social capital by labor and political groups than sporting groups is explained by the more rigid leadership, greater funding and organizational capacity of the former groups. The group affiliations considered in this chapter captures considerable variance between associations. The inclusion of group affiliation evaluates the explanatory power of organizations without increasing the model’s complexity. The associational affiliation of a respondent is measured by indicator variables demarking membership in political, labor, or sporting groups; a 1 is scored with a response in the affirmative.

Organizational Activity

Two variables describe the magnitude of organizational activity conducted on the internet. These variables are hypothesized to exhibit a positive and significant change in a respondent’s social capital. This hypothesis holds that any additional ease of discussion provided individuals by groups will facilitate civic engagement for the individual.
Variables for both group internet and social networking site use are hypothesized to significantly and positively influence social capital. The group internet and social networking intensity variables are tallied as a summation of relevant activities conducted by the organization. Activities comprising the institutional internet utilization variable include weblog ownership, founding of a website, maintenance of message boards, or the utilization of email for group activities. Social networking website use by the group measures whether a respondent’s organization uses Facebook or Twitter. The social networking intensity of an association is scored as a 0 if there is no use of social networking, 1 if Facebook or Twitter is utilized, and a 2 if the group has an account on both services.

*Internet / Social Networking Factors*

Social capital research has evolved to consider the increasing relevance of the internet in civic engagement. Early research into mass media and social capital generation pointed toward a negative or a null effect on social capital from television and the Internet, while contemporary research has shown a positive role for the latter (Norris, 1996; Nie, 2001). Norris (1996) elucidated this sentiment, presenting early evidence to support the claim that mass media outlets did not negatively affect social capital. Nie (2001) was unable to find any linkage between social capital and internet use. Social capital research has discredited the conception of the internet as a monolithic entity providing a uniform effect to users; research has examined the effect of bulletin boards, classified-ad websites, and social networking services on social capital (Putnam, 2003, p. 240; Kobayashi, Ikeda, and Miyata, 2006). Investigations into social networking and
social capital demonstrate that social networking services facilitate the creation of affinity groups (Bargh and McKenna, 2004, p. 586), the promotion of bridging and bonding social capital (Ellison, Steinfield, and Lampe, 2006; Vitak, Ellison, and Steinfield, 2011), and an increase of reciprocity levels and governmental trust (Kobayashi, Ikeda, and Miyata, 2006, p. 583).

Social Networking Models

Social Capital (Initial Model) = $\beta_0 + \beta_1 \text{Age} + \beta_2 \text{Education} + \beta_3 \text{Income} + \beta_4 \text{Internet} + 
+ \beta_5 \text{Geo. Type} + \beta_6 \text{Sex} + \beta_7 \text{African} + \beta_8 \text{Hispanic} + \varepsilon$

Social Capital (Group Variable Model) = $\beta_0 + \beta_1 \text{Age} + \beta_2 \text{Education} + \beta_3 \text{Income} + \beta_4 \text{Internet} + 
+ \beta_5 \text{Geo. Type} + \beta_6 \text{Sex} + \beta_7 \text{African} + \beta_8 \text{Hispanic} + \beta_9 \text{Political Group} + \beta_{10} \text{Labor Group} + 
\beta_{11} \text{Sports Group} + \varepsilon$

Social Capital (Internet Suite Model) = $\beta_0 + \beta_1 \text{Age} + \beta_2 \text{Education} + \beta_3 \text{Income} + \beta_4 \text{Internet} + 
+ \beta_5 \text{Geo. Type} + \beta_6 \text{Sex} + \beta_7 \text{African} + \beta_8 \text{Hispanic} + \beta_9 \text{Political Group} + \beta_{10} \text{Labor Group} + 
\beta_{11} \text{Sports Group} + \beta_{12} \text{Group SNS} + \beta_{13} \text{Group Internet} + \beta_{14} \text{Internet} + \beta_{15} \text{SNS Use} + \beta_{16} \text{Generalized Trust} + \beta_{17} \text{Political Efficacy} + \varepsilon$

Social Capital (Interaction Variable Model) = $\beta_0 + \beta_1 \text{Age} + \beta_2 \text{Education} + \beta_3 \text{Income} + \beta_4 \text{Internet} + 
+ \beta_5 \text{Geo. Type} + \beta_6 \text{Sex} + \beta_7 \text{African} + \beta_8 \text{Hispanic} + \beta_9 \text{Political Group} + \beta_{10} \text{Labor Group} + 
\beta_{11} \text{Sports Group} + \beta_{12} \text{Group SNS} + \beta_{13} \text{Group Internet} + \beta_{14} \text{Internet} + \beta_{15} \text{SNS Use} + \beta_{16} \text{Generalized Trust} + \beta_{17} \text{Political Efficacy} + \varepsilon$

Data & Methods

The data and methods section begins with a description of the survey sample utilized in the chapter. This section explains the drawbacks present in earlier data sets and the processes used to rectify these issues. Later discussion describes the collection, measurement, and orientation of explanatory variables and their contributions to the regression model. Each of the chapter’s four regressions is explained in greater detail at the section’s conclusion.
The regression model for the proposed social capital creation equation employs 1,484 data points (N); this number includes data from those surveyed answering a full complement of social capital questions. Multiple imputations replace missing data present in the independent variables; a full description of the process can be found in the dissertation’s methodology and data chapter. When independent variable data is missing in a case, twenty values are generated for the missing data by the multiple imputation process. An ordinary least squares (OLS) regression examines the factors proposed to be significant in determining a respondent’s social capital level, and is employed to test hypotheses concerning social capital and social networking service utilization. By implementing an OLS model, regression results are unbiased, possess small amounts of variance, and forecast only possible values for the dependent variable. This regression is implemented to test hypotheses surrounding social capital determinants and to examine factors contributing to the variation in observed social capital data (Pew Internet & American Life Project, 2011, p. 2). The independent variables utilized in social capital regressions parallel those employed in the generalized trust and political efficacy chapter, providing a greater ease of comparison of regression findings between chapters. This process generates an intuitive model for the direct contributors to social capital.

The first regression examines demographic variables reaching significance in previous social capital literature. The second regression appends dummy variables indicating membership in sports, labor, or political groups to the model. A third equation

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24 The social capital variable is generated through a respondent’s answers on Question 35, parts A-G.
25 The seed for this imputation is 91583.
utilizes variables from each of the previous regressions alongside variables measuring internet activity, intensity of social networking service use, and the internet and social networking services conducted by a respondent’s group. A final regression incorporates interaction variables; the presence of interaction variables in the final regression evaluates whether the effect of SNS intensity on social capital varies at different cohorts of age and educational achievement.

Results

The imputation of Survey Side of the Internet data allows cases in the dataset to be utilized that would otherwise be removed from the sample because of missing data. The 20 imputations of Social Side of the Internet data increase the respondents utilized in this chapter from 1,302 to 1,484 cases.²⁶

²⁶ The results generated from a logit regression are similar to those reported here. Instead of collapsing dependent variable data into a binary response to permit for this type of regression, I have chosen to utilize an ordinal dependent variable.
Table 5.2: Regression Results, Social Capital Generation

<table>
<thead>
<tr>
<th>Model</th>
<th>Demographic</th>
<th>Group-Focused</th>
<th>Internet / Social Networking</th>
<th>Interaction Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.075 (.03)**</td>
<td>-.080 (.03)*</td>
<td>.033 (.04)</td>
<td>.067 (.04)</td>
</tr>
<tr>
<td>Education</td>
<td>.198 (.05)***</td>
<td>.164 (.05)**</td>
<td>-.018 (.05)</td>
<td>-.002 (.06)</td>
</tr>
<tr>
<td>Income</td>
<td>.090 (.03)**</td>
<td>.056 (.03)*</td>
<td>.018 (.03)</td>
<td>.023 (.03)</td>
</tr>
<tr>
<td>Afr-American</td>
<td>.448 (.17)**</td>
<td>.436 (.16)**</td>
<td>.259 (.15)</td>
<td>.243 (.15)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>.182 (.22)</td>
<td>.141 (.21)</td>
<td>.069 (.20)</td>
<td>.075 (.20)</td>
</tr>
<tr>
<td>Geograph. Type Sex</td>
<td>-.025 (.05)</td>
<td>-.039 (.05)</td>
<td>-.043 (.05)</td>
<td>-.044 (.05)</td>
</tr>
<tr>
<td>Afr-American</td>
<td>.392 (.11)***</td>
<td>.405 (.11)**</td>
<td>.308 (.10)**</td>
<td>.317 (.10)**</td>
</tr>
<tr>
<td>Politics Group</td>
<td>.868 (.10)***</td>
<td>.577 (.09)***</td>
<td>.582 (.09)***</td>
<td></td>
</tr>
<tr>
<td>Labor Group</td>
<td>.338 (.17)*</td>
<td>.214 (.16)</td>
<td>.220 (.16)</td>
<td></td>
</tr>
<tr>
<td>Sports Group</td>
<td>.494 (.11)***</td>
<td>.300 (.11)**</td>
<td>.302 (.11)**</td>
<td></td>
</tr>
<tr>
<td>Internet</td>
<td>-.009 (.02)</td>
<td>.005 (.02)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generaliz. Trust</td>
<td>.055 (.10)</td>
<td>.054 (.10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Politic. Efficacy</td>
<td></td>
<td>.482 (.04)***</td>
<td>.482 (.04)***</td>
<td></td>
</tr>
<tr>
<td>Social Networking</td>
<td></td>
<td>.130 (.05)**</td>
<td>.347 (.14)**</td>
<td></td>
</tr>
<tr>
<td>Group SNS Use</td>
<td></td>
<td>.183 (.11)</td>
<td>.193 (.11)</td>
<td></td>
</tr>
<tr>
<td>Group Int. Use</td>
<td></td>
<td>.283 (.05)***</td>
<td>.286 (.05)***</td>
<td></td>
</tr>
<tr>
<td>Soc. Net*Age</td>
<td></td>
<td></td>
<td>-.049 (.03)</td>
<td></td>
</tr>
<tr>
<td>Soc. Net*Educ.</td>
<td></td>
<td></td>
<td>-.021 (.04)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.50 (.28)***</td>
<td>1.38 (.27)***</td>
<td>.482 (.04)</td>
<td>-.521 (.35)</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.041</td>
<td>.102</td>
<td>.257</td>
<td>.258</td>
</tr>
<tr>
<td>N</td>
<td>1484</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p<0.05; ** p<.01, *** p<.001

The measure for group social networking use would achieve significance if a cutoff for P<.10 was included.
Regression 1 – Demographic Variables

An OLS regression determines the effect of a suite of demographic variables on social capital. The regression’s F-score is acceptably large (F = 8.85, p < .0000) to reject that demographic variables do not significantly explain the variation that exists in social capital data; this regression explains .041 of the data’s variation. A number of independent variables in this model exhibit a positive and significant relationship with social capital. Variables measuring Hispanic racial identity and community type fail to reach significance. A one-unit increase in a respondent’s age leads to a .08 social capital decrease. Each unit change in a respondent’s educational achievement led to a .198 increase in social capital, while a similar movement in income brought a .090 increase. A respondent’s gender and African-American racial identification boosted social capital by .392 and .448. Findings from the initial regression support the hypothesis that demographic factors are meaningful descriptors of social capital; age, education, income, and gender all significantly impact social capital levels. Demographic variables for age, income level, and gender are significant in the direction proposed by previous literature. This finding breaks from previous educational attainment literature; Helliwell and Putnam (2007) and Corrocher (2010) observe an insignificant effect for education as a social capital determinant. Subsequent regressions present variables for group

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28 The independent variables in this regression include measures for a respondent’s age, education, income, sex, presence in African-American or Hispanic races, and neighborhood types.
29 The R-squared value was generated by the mibeta command.
30 The age variable is negative, supporting the findings of Hetherington (2005) and Burke et al (2010). A respondent’s income is positive and significant, according with Burke et al. The positive effect of female gender on social capital accumulation was initially posited by Zúñiga, Jung, and Valenzuela (2012).
identification, intensity of social networking site use at the individual and group level, and interactions between social networking website use and demographic variables.

Regression 2 – Demographic and Group Variables Model

The second regression contains demographic and group affiliation measures; the regressions’ F-score \(F = 16.81, p < .0000\) allows the null hypothesis to be rejected. Age maintains relevance as a social capital determinant; each increase in age is associated with a .080 social capital decrease. Income level and education variables are highly significant, increasing social capital per unit change by .056 and .164. When holding other variables constant, those initiating post-graduate studies possessed a social capital score larger by .984 than those with sub-9th grade education. African-American racial identification and gender remain significant in the second regression; identification as African-American or a female increased social capital by .436 and .405. Group affiliation represents a highly salient factor in the determination of social capital; affiliation with a political group was associated with .868 higher social capital, while those in labor unions had .338 higher social capital. Sporting group membership is accompanied by a social capital increase of .493. Measures for Hispanic racial identification (.141) and neighborhood type (-.039) failed to significantly affect social capital. This model explains .102 of the variation present in the social capital variable.

Regression 3 – Proposed Model

The third regression includes individual and group measures for magnitude of internet use and social networking intensity; the model captures a significant amount of social capital variation \(F = 27.75, p < .0000\) Demographic measures are insignificant
when controls for internet usage are included. A respondent’s age (.067), educational attainment (-.002), income level (.023), African-American (.243) and Hispanic racial identities (.075), and neighborhood type (-.067) are insignificant social capital determinants. Female respondents control social capital greater by .317 than males.

Professing group membership in sports or political groups maintained significance for members, increasing social capital stores by .302 and .582. Labor union affiliation failed to impact social capital in this model. The amount of time spent online (-.009) is an insignificant determinant, but a respondent’s intensity of social networking is highly (p < .0000) and positively associated with social capital. Each increase in social networking intensity is associated with social capital scores greater by .183. Actions taken at the group level influence social capital for the respondent; groups using internet tools to conduct business or contact users provided a per-unit boost of .322 to their members. Those associations utilizing social networking services insignificantly increased affiliates’ social capital by .201. The inclusion of political efficacy and generalized trust variables into the social capital model decrease African-American racial identification from significance. This relationship provides evidence that the significant relationship that African-American inhabitants possess with social capital is influenced by their political efficiency. This model explains .257 of social capital variation - the inclusion of internet and social networking factors nearly double the fit of the model.

31 Social networking by the organization achieved significance at the .10 level.
Regression 4 – Interaction Variable Model

The final specification of the social capital model includes interaction variables created by multiplying measures for a respondent’s age and education levels with their social networking service intensity levels. Including interaction variables increases the fit of the proposed model by .001; interaction variables individually and collectively fail to reach significance as social capital predictors. The hypothesis that social networking service use has a conditionally different effect at distinct levels of age or educational achievement is not supported by the regression results. The chapter fails to reject the null hypothesis to necessitate that interaction variables should be included in this regression. The proposed model excludes the interaction terms, increasing model parsimony and decreasing complexity.

Social networking services are a unique phenomenon as factors capturing SNS intensity remain significant when demographic and group affiliation variables are included in social capital determinant models. Using social networking services allows respondents to generate social capital in a significantly dissimilar way to those attending offline meetings or identifying with groups active online. The number of statistically significant factors supports the hypothesis that multiple pathways exist to social capital generation. Any conception of social capital creation must consider demographic, group-focused, and social networking intensity variables as determinants.
Conclusion

Social Side of the Internet Survey data supports the theory that the intensity of social networking service usage influences social capital. The process through which social networking services modify social capital is unique; social networking website use matters in the generation of social capital at the individual or the group levels when controls for demographics and group association are included. Those with a high intensity of social networking service use possess statistically greater amounts of social capital than those using SNS less often. Results indicate that social networking represents an integral part of social capital generation for the 21st century American. The findings presented provide support for the hypothesis that social capital is multi-faceted and determined by a variety of disparate factors. Social networking service intensity acts as a “replacement effect” for demographic factors and as a unique determinant of social capital. Social networking websites represent a new way in facilitating civic engagement, avoiding the constraints afflicting internet users and those affiliating with traditional groups.

Social networking services are *sui generis*, working in tandem with demographic and group-focused factors to create social capital. Understanding factors relevant to social capital modification provides policymakers and political scientists with options to conceivably decrease the severity of the democratic divide and the production gap. The transformative potential of social networking services represents a pathway in which civic problems can be solved, as SNS activity facilitates equitable access to social capital and societal representation in a unique fashion from other factors contributing to social
capital generation. Intensity of social networking site use is linked to overall increases in social capital. At a period when the salience of the production gap is more effecting to Americans than the digital divide, social networking services represent a way in which equitable civic access can be achieved.

Findings made in this chapter expand upon social capital literature, supporting the hypothesis that social capital is generated through demographic, group-focused, and social networking factors. Variables representing each explanation for social capital determination reached significance. Measures representing race (African-American) and sex were significant demographic determinants of social capital, while group-focused variables maintained significance through each model in which they were present. Social networking website use by the individual is a highly significant determinant of social capital.

This section’s results have important ramifications for policymakers. Where town hall meetings limit the number allowed to attend and respond and many online forums require account and post approval by moderators, a municipality’s Facebook page allows for broad, unfettered discussion. For individuals possessing limited ability to join traditional or online groups, social networking services offer a free and approachable way to increase social capital. Individuals can be involved on their own schedules as social networking services are continually accessible. These members can sign petitions, contact their local representative, or debate politics far beyond the constraints of a municipality’s business hours or organizational capacity.
It is important to note that bolstering social networking service adoption alone does not solve the problems associated with a lack of social capital. Social networking site use, demographic, and group-focused factors cannot accurately describe the variation existing in social capital scores. To better understand the social capital problem, political scientists would do well to consider SNS to be a powerful facilitator of civic engagement. To establish efficacious engagement programs, policymakers have to take advantage of factors shown to increase social capital. By providing rudimentary evidence that social networking service use at the individual and group levels impact social capital, more efficacious philosophies and policies can be implemented. Understanding that intensity of social networking website use grants, alongside demographic and group-focused factors, a better explanation of social capital variance represents an evolution in thought concerning the phenomenon.

With the finding that intensity of social networking service use is relevant in regards to social capital for Social Side of the Internet Survey respondents, policymakers can design programs implementing a social networking education component. When individuals lack the skills necessary to join Facebook or LinkedIn, local leaders can create policies providing their citizenry with skills-based education. Through an understanding of the constellation of factors germane to the generation of social capital, authorities can focus programs to disaffected groups.

The amount that social networking services are used is significant and positively associated with social capital. While demographic and group-based factors are relevant in discussions of social capital’s causes, 62% of the respondents surveyed use some form of
social networking website. Of respondents active on the Internet, a large segment possesses the skills required to locate relevant groups (71%), invite friends to organizations (71%), and keep apprised on group news (83%) (Pew, 2010). The continued exclusion of individuals and groups from meaningful civic discourse despite possessing internet skills provides support for the production gap hypothesis. Social networking services represent indirect and direct pathways by which the impact of democratic divide and the production gap on civic engagement can be diminished.
Chapter Six
THE BIG PICTURE: RESULTS AND CONCLUSION

Social networking services are theorized to represent a new method of civic engagement. The author contends that social networking impacts the political sphere in the United States, as users are able to address concerns and express policy desires to their government in a direct fashion on social networking services. The unique relationship of social networking on social capital creation serves as a potential solution to American civic engagement issues. Through a significant impact on respondent attitudes towards political efficacy and social capital, these services represent potential solutions for the digital divide and the decrease in civic participation observed in the United States.

Putnam (1995) defines social capital as consisting of norms, organizations, and overall trust. Citizens possessing higher amounts of social capital are better informed, trust their government to a greater degree, and feel that they possess a greater propensity to change their government than those with decreased social capital. Early social networking research supports the proposed relationship between social networking service use and civic engagement; Zhang et al (2010) report a strong relationship between social networking activity and civic participation levels (p. 86). Ellison, Steinfield, and Lampe (2007) observe increases in bridging and bonding social capital when social networking is utilized. Valenzuela, Park, and Kee (2009) link increased social networking usage with positive trust attitudes and an overall boost in civic engagement. The results presented in the dissertation accord with previous social capital
scholarship. While the dissertation’s findings are unable to be generalized to a worldwide context, they represent an important contribution to social capital and civic engagement literature.

Inspiring the electorate into civic participation is a difficult endeavor for policymakers and political scientists. Social networking services are used by a considerable segment of United States citizens, penetrating demographic factors and group affiliations. The omnipresence of social networking in American life allows social media users to establish an unparalleled pipeline to social capital and civic engagement; the variable capturing SNS intensity exhibits a meaningful and positive relationship with social capital determinants - political self-efficacy – and direct social capital avenues.

The dissertation seeks to provide a solution to the systemic exclusion of individuals from civic engagement observed in American public life online (Putnam, 1995; Norris, 2003). Civic engagement is exacerbated by the continued pervasiveness of the digital divide and the increasing prominence of the production gap. An initial inquiry into the effect of social networking provides researchers with a more complete sense of the determinants of social networking service use. Exploration into generalized trust and external political efficacy determinants evaluate whether SNS use represents a significant factor in the generation of social capital. The constituent elements of direct social capital creation are evaluated when SNS use is included in a model alongside factors measuring demographics and group affiliation.
The hypothesis that social networking services are a direct and indirect social capital contributor alongside both demographic and group explanations is systemically supported by regressions of Social Side of the Internet survey data. This dissertation reports a number of demographic factors are associated with a modified probability of social networking service use when exploring the creation of external political efficacy attitudes. Demographic and group affiliation measures reach significance in the determination of social capital scores. Factors measuring social networking service intensity significantly influence social capital. Social networking service utilization is an integral part in contributing to indirect pathways to social capital; a respondent’s political efficacy is positively influenced by SNS use. By focusing on indirect and direct pathways to social capital generation, policymakers can facilitate the process through which an individual becomes an active civic participant.

Social networking services pose a solution to two related political science inquiries. Social networking use possesses a positive relationship with social capital when
demographic and group concerns are considered. As social networking websites impact social capital independently of demographic and group affiliation factors, they represent a potential solution to the civic engagement issue described by Putnam (2000). The lingering effects of the democratic divide - second-level digital divide issues including a skills divide between internet users and the production gap existing on online media outlets – are ameliorated through increased SNS usage; respondents active on social networking services possess a more positive attitude toward their political efficacy and larger amounts of social capital. Heavy social networking users perceive themselves to influence policy debates in substantive ways, and they receive greater amounts of desired policy outcomes than those that those not utilizing these services.

The democratic divide framework conceives of civic engagement as being closed due to gaps in computer ownership or skills; a systemic block to civic engagement on the internet remains relevant as the gap in ownership diminishes. The concept of the skills divide posits that this obstruction can be circumvented through skills-based education. Schradie’s (2011) proposal of the production gap framework contends that online media sources decrease the ability of individual users to engage citizens and the government through limitations placed on those whom can substantially contribute. These findings have important policy implications. The establishment of education programs, increasing the approachability of elected officials, and adopting social media-friendly policies in primary and secondary school curricula are policies that could increase social networking usage.
SNS facilitate the process by which citizens can become civically engaged online and receive desired changes in policy. To evaluate whether social networking disproportionately affects specific demographic cohorts, the dissertation includes interaction variables demarcating social networking service use at particular levels of demographic factors. An interaction variable capturing the interplay between internet usage and educational achievement reaches significance in the regression model exploring the decision to utilize social networking services; other interaction variables fail to reach significance in the regressions presented in this dissertation. Social networking represents a phenomenon benefitting all users regardless of their age or educational achievement. As the benefits of social networking accrue to all using the service, policies wishing to increase civic engagement must include a focus on social networking websites.

Policy Recommendations

This dissertation rejects the null hypothesis that intensity of social networking service use has no effect on external political efficacy or social capital; this finding has important implications for the shaping of policy. Social networking services represent a fundamentally different type of association when compared to traditional (physical) or internet (virtual) organizations. The utilization of social media websites connects government representatives with constituents; representatives can establish policies focusing on those groups disproportionately affected by the digital and second-level divides, stay active on social networking services, and educate constituents from an early
Policymakers should be concerned with social networking services and how they relate to civic engagement, as SNS command a fraction of the populace that is parallel to or exceeds that of television viewers, newspaper readers, and those affiliating with traditional groups. Supporting social networking education can assist politicians that are concerned with becoming elected (or maintaining their incumbency) through the *pro bono* dissemination of policy points and canvassing done by followers.

- The establishment of targeted social networking education programs towards minority groups and those at advanced ages.
- An increase in the social media visibility of officials at all government levels.
- A shift in the focus of fundamental computer science courses at elementary and secondary levels of education towards the adoption of a social networking-positive syllabus.
- Creation and maintenance of a program to provide high speed internet access at a reduced cost to those at lower income levels.

Targeting specific factions for social networking education would benefit groups most affected by the skills divide. Data exhibited in this dissertation provides evidence that those groups initially affected by differential access patterns at the onset of the internet age lag behind in possessing the skills to effectively use these services.

Establishing hands-on educational opportunities with social networking services to groups affected by the skills divide would provide the skills required to connect to other users and broadcast their opinions; those newly-educated in social networking skills could contact governmental officials and express policy desires and opinions.

To combat the lack of civic engagement, elected officials would do well to activate and maintain accounts on social networking services. Enacted in tandem with
social media education, a shift towards greater governmental responsiveness on social media services would increase a citizen’s political efficacy and social capital. The creation of a social media precedent for government officials and candidates would increase trust in government (Keele, 2004) while simultaneously increasing external political efficacy levels held by the populace, as individuals will feel as if they impact government with their missives (Campbell et al, 1954; Balch, 1974).

The final policy prescription concerns the establishment of a social media-supportive curriculum at elementary and secondary levels of education. In current computer science courses, students are provided with the rudimentary skills needed to use a computer (e.g. word-processing, navigating the internet, data entry). Professional advocacy organizations for computer science teachers press state Departments of Education to incorporate additional levels of computing education in secondary schools (CSTA, 2012). Structured teaching in social networking usage would provide students with the tools required to meaningfully interact online with government representatives. Through the promulgation of these courses at primary and secondary education levels, the effect of higher levels of education on attitudes of political efficacy and social capital stores may be decreased.

_for future research_

This dissertation’s findings are rudimentary and represent a snapshot of social networking’s explanatory power in 2010; a number of improvements can be made to subsequent research. Surveys can further differentiate the typology of social networking
websites and the different patterns of usage on these services. Subsequent research in this field would benefit from updated surveys, expanded to provide additional information by distinguishing the different foci and variation present in social networking service types and usage patterns. Research into social networking and social capital would benefit with the establishment of longitudinal studies. Studies conducted over years or decades would allow scholars to better understand nuances existing between social networking and civic participation in an overall and specific (year) fashion. Subsequent researchers can examine whether social networking services provide a monotonic social effect by virtue of their use or if variances in usage patterns and service types exhibit differential effects on civic engagement. The dissertation is limited in terms of the geography that it examines; data collected from other regions in the world would test the generalizability of the dissertation’s findings. Additional research could delve into the effect of social networking services on civic participation in dissimilar civic political cultures (Almond and Verba, 1963), or can examine whether the usage of the internet and social networking has a differential effect on indirect and direct social capital generation dependent on the locale (work or home) one utilizes the services.

Social networking services provide users with a substantively different experience than those provided by internet usage or offline group affiliation. Social networking services impact social capital in a distinct fashion when compared to other determinants or types of associations. Networks established on social networking services are different than those infrastructures given attention in social capital literature. The number of connections that individuals possess is significantly higher on social networking
websites, while the intensity of these relationships is significantly lower when compared to traditional groups. (Antoci, Sabatini, and Sodini, 2011) Work examining social networking site’s unique impact on social capital is limited in terms of generalizability. Empirical work exploring this interaction (Ellison, Steinfield, and Lampe, 2008) limits their sample to active college students.  

Social networking services are different beasts than traditional or online forms of affiliation. The evolution of social networking services far outstrips the rate of change experienced by traditional or internet groups. Policies, overall design, and even those able to access and join these websites have changed in the period since this initial wave of research. Findings from earlier social networking literature focus on the effect of earlier social networks on social capital and are not generalizable to current versions of the website.

Political science literature relating social networking services to social capital generation is still in its beginning stages. Research that explores social networking services and social capital examines numerous topics - the psychological profile of social networking users, the calculus behind social networking utilization, and the strength of associational bonds created on these services. Previous studies do not explore the relationship between social networking services and civic engagement (Kazienko and Musiat, 2006); a paucity of empirical literature exists comparing the role of the internet and social networking services in the generation of social capital. Social networking

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33 Facebook goes through substantive changes a number of times every year (Loomer, 2012).
services are a current phenomenon and few studies establish SNS as separate from other types of internet activities. This dissertation conceptualizes and finds support for the hypothesis that social networking is integral to social factor generation in a fashion separate from internet usage.

Social networking services’ unrivaled construction makes generalization of their effect difficult to deduce. Updates to a social networking service can change a user base (removal of institutional email requirement), usage patterns (Timeline implementation) or modify group-building activities (Facebook Groups); significant changes are made to social media networks on an accelerated schedule when compared to traditional media outlets and organizations (Loomer, 2012). Rapid changes, coupled with a burgeoning user base, make it difficult for researchers to accord their findings to any sort of generalizable statement regarding the relationship that social media and social capital possesses.

Longitudinal studies must address service-wide developments to generalize the effect of SNS over an interval of years. The author hypothesizes that further specification of social networking types and usage patterns on surveys will increase the model’s explanatory power, while clarifying the constellation of factors contributing to social capital. The Social Side of the Internet database does not allow for Kazienko and Musiat’s typology to be explored, but subsequent research would benefit from utilizing their framework.

The variance in missing data between explanatory variables represents an issue for subsequent research to consider. The relative completeness of group affiliation data
vis-à-vis demographic factors is manifested in the results; group identification is highly significant when it is included in the social capital regression model. Variables for a respondent’s age and education possess near-complete data, maintaining significance through regression equations for social networking and internet usage, traditional group affiliation, and generalized trust. Results support group affiliation as a strong explanation for indirect and direct social capital generation, but the explanatory power of demographic variables included varies. Multiple imputations of missing data provide values for explanatory factors, but may fail to properly capture the relationship existing between a dependent variable and an explanatory factor. Future research should stress the importance of survey completion when collecting data allowing researchers to examine the determinants of attitudes and social capital.

The Social Side of the Internet survey is limited in terms of specificity in regards to social networking services, generalized trust, and political efficacy. A respondent is asked about the duration of time spent online and the types of internet-capable technologies owned, but social networking inquiries are limited to whether the respondent uses Facebook or Twitter. While social networking represents a considerable portion of internet traffic in the United States, services like LinkedIn and GovLoop are substantially different in focus and how members utilize them when compared to industry leaders. Social networking services provide a base level of utility to users but vary in their functionality and foci. LinkedIn and GovLoop are geared towards providing

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34 Age and education maintain significance in the social capital regression until social networking intensity is included.
networking opportunities to professionals, while Wizard101 and Togetherville provide younger users with moderated chat functions and games.

**Governmental Recognition of Social Networking Services**

While this dissertation provides support that social networking services assist in the creation of social capital, there remains a concern about the actions taken by the United States government towards SNS. President Obama extensively used social networking during the 2008 and 2012 elections and created the Open Government Initiative in 2009 to increase government transparency and to increase collaboration with citizens. As a part of the Open Government Initiative, federal agencies have been urged to increase their social media presence, create discussions, and foster public debate on social networking (U.S. Executive Office of the President, 2010). For the rank-and-file member of a government agency, security restrictions and agency regulations make it difficult to access social networking (Human Capital Institute, 2010). Further research in this field should examine whether social capital generated by interactions on social networking websites is valued by government agencies similarly to that created by online or offline transactions; Halpern and Katz (2012) suggest that government agencies that utilize social networking attempt to find a balance between activity and fostering user discussion. As the amount of agency messages increases, the amount of user comments decrease.

SNS exist to strengthen homogeneous bonds - Hyves.nl and iWiw.hu are geographically limited to the Netherlands and Hungary, two ethnically homogeneous
states. LAGbook.com connects African users, while Orkut claims 33 million users throughout the world. When questions for specific social networking affiliations, types of usage, and intensity are included, future research can discern the unique qualities determining the indirect and direct effects that social networking has on social capital. Including questions regarding the types of activities an individual undertakes while utilizing social networking websites allows scholars to perceive how passive and active SNS use differs in terms of modifying attitudes regarding trustworthiness of strangers and the perceived efficaciousness of respondents.

**Concluding Remarks**

The internet has been touted as a potential solution to politics like usual - limited governmental responsiveness solidified by gaps in access and skills - but the same types of individuals have been excluded from meaningful representation on the service. The production gap has diminished the potential for equitable access on the internet, as access to the content production agenda has decreased; traditional media sources have purchased internet portals and social news websites. Owing to a diffuse and flexible structure when compared to conventional websites, social networks represent the method by which members of excluded groups can promote their political beliefs, interact with citizens, and allow their agenda to be observed by governmental representatives.

Social networking positively modifies social capital and political efficacy in a significant fashion when controls following from previous research are included. The effect of social networking in American life will increase as greater numbers populate
and utilize these services; this dissertation finds that social networking services influence social capital in indirect and direct fashions. Increases in social networking website usage bolster the probability of possessing a positive outlook toward political efficacy, and is associated with greater amounts of social capital. Weak evidence exists for a relationship between increased social networking usage and the positivity of generalized trust attitudes. Those active on social networking services can decrease the opportunity cost of actions required by association with traditional groups and avoid systemic exclusion on the internet. Social networking websites have been utilized in the transformation of governments and represent an untapped resource to policymakers in the United States. The findings described here are rudimentary, but support the hypothesis that social networking matters in social capital and civic engagement.
## APPENDIX A

Variables and Coding from the Social Side of the Internet Survey

<table>
<thead>
<tr>
<th>Variable</th>
<th>Social Side of the Internet Questions</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American Race</td>
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<td>0 - No, 1 - Yes</td>
</tr>
<tr>
<td>Age</td>
<td>Age</td>
<td>1; 18-25, 2; 26-35, 3; 36-45, 4; 46-55, 5; 56-65, 6;66+</td>
</tr>
<tr>
<td>Education Sex</td>
<td></td>
<td>1; None-8th grade, 2; 9-12th grade, 3; HS diploma, 4; Tech/trade coll, 5; Some college, 6; College grad, 7; Post-graduate.</td>
</tr>
<tr>
<td>Gender Sex</td>
<td></td>
<td>0 – Male, 1 - Female</td>
</tr>
<tr>
<td>Generalized Trust Q3</td>
<td></td>
<td>0 - No, 1 - Yes</td>
</tr>
<tr>
<td>Group Int. Use ∑Q17&lt;sub&gt;eh&lt;/sub&gt;</td>
<td></td>
<td>1 each – Use Facebook / Twitter1 each – Organize via email / own blog / own website / own message boards</td>
</tr>
<tr>
<td>Group SNS Use ∑Q17&lt;sub&gt;ij&lt;/sub&gt;</td>
<td></td>
<td>1 each – Use Facebook / Twitter</td>
</tr>
<tr>
<td>Hispanic-American Hisp</td>
<td></td>
<td>0 - No, 1 - Yes</td>
</tr>
<tr>
<td>Income inc</td>
<td></td>
<td>1;&gt;$10,000, 2;$10,001-20,000, 3;$10,001-20,000, 4;$20,001-30,000, 5;$30,001-40,000, 6;$40,001-50,000, 7;$50,001-75,000, 8;$75,001-100,000, 9;$100,001-150,000</td>
</tr>
<tr>
<td>Internet Use Q19a, Q19b</td>
<td></td>
<td>For home and work; 0;No internet use, 1; less than every few weeks, 2; every few weeks, 3; 1-2 days/week, 4; 3-5 days/week, 5; once a day, 6; several times/day</td>
</tr>
<tr>
<td>Labor Group Q7g</td>
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<td>0 - No, 1 - Yes</td>
</tr>
<tr>
<td>Neighborhood Type LIVE1</td>
<td></td>
<td>0; Large City, 1; Suburb Near Large City, 2; Small City, 3; Rural Area</td>
</tr>
<tr>
<td>Political Efficacy Q2, Q12, Q15a, Q32</td>
<td></td>
<td>1 each – if accomplished something by group, taken a leadership role, began a group, and how much impact one has in community</td>
</tr>
<tr>
<td>Political Group Q7e</td>
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<td>0 - No, 1 - Yes</td>
</tr>
<tr>
<td>SNS Intensity Act87a, Act117b, Q34e, Q34f</td>
<td></td>
<td>1 each - if use Twitter, Facebook, Group News on SNS, Placed Group News on SNS</td>
</tr>
<tr>
<td>SNS Use WEB1</td>
<td></td>
<td>0 – No, 1 – Yes</td>
</tr>
<tr>
<td>Social Capital ∑Q35&lt;sub&gt;s-g&lt;/sub&gt;</td>
<td></td>
<td>1 each – if solved local problem, society at large problem, financial support, emotional support, raised money, candidate elected, raised awareness.</td>
</tr>
<tr>
<td>Sports Group Q7b</td>
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<td>0 - No, 1 - Yes</td>
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<tr>
<td>Years Lived LIVE2</td>
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<td>1; &lt;1 year, 2; 1-5 years, 3; 6-10 years, 4; 11-20 years, 5; &gt;20 years</td>
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</table>
## APPENDIX B

Comparison of Regression Results, Non-Imputed and Imputed Data, Social Capital

<table>
<thead>
<tr>
<th>Model</th>
<th>Non-imputed Demographic</th>
<th>Internet / Social Networking</th>
<th>Imputed Demographic</th>
<th>Internet / Social Networking</th>
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<tr>
<td><strong>Age</strong></td>
<td>-.063 (.04) †</td>
<td>-.065 (.05)</td>
<td>-.075 (.03)**</td>
<td>.033 (.04)</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>.186 (.06)**</td>
<td>.099 (.07)*</td>
<td>.198 (.05)**</td>
<td>-.018 (.05)</td>
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<tr>
<td><strong>Income</strong></td>
<td>.103 (.03)**</td>
<td>.024 (.03)</td>
<td>.090 (.03)**</td>
<td>.018 (.03)</td>
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<tr>
<td><strong>Afr-American</strong></td>
<td>.562 (.18)**</td>
<td>.159 (.20)</td>
<td>.448 (.17)**</td>
<td>.259 (.15)</td>
</tr>
<tr>
<td><strong>Hispanic</strong></td>
<td>.166 (.24)</td>
<td>.181 (.26)</td>
<td>.182 (.22)</td>
<td>.069 (.20)</td>
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<tr>
<td><strong>Geograph. Type</strong></td>
<td>-.001 (.06)</td>
<td>-.006 (.07)</td>
<td>-.025 (.05)</td>
<td>-.043 (.05)</td>
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<tr>
<td><strong>Sex</strong></td>
<td>.428 (.12)**</td>
<td>.328 (.13)**</td>
<td>.392 (.11)**</td>
<td>.308 (.10)**</td>
</tr>
<tr>
<td><strong>Politics Group</strong></td>
<td>.661 (.16)**</td>
<td>.577 (.09)**</td>
<td>.300 (.11)**</td>
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<tr>
<td><strong>Labor Group</strong></td>
<td>.211 (.21)</td>
<td>.214 (.16)</td>
<td></td>
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<tr>
<td><strong>Sports Group</strong></td>
<td>.263 (.14) †</td>
<td>.300 (.11)**</td>
<td></td>
<td></td>
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<tr>
<td><strong>Internet</strong></td>
<td>.006 (.02)</td>
<td>-.009 (.02)</td>
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<tr>
<td><strong>General. Trust</strong></td>
<td>.241 (.13) †</td>
<td>.555 (.10)</td>
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<tr>
<td><strong>Poltic. Efficacy</strong></td>
<td>.413 (.05)**</td>
<td>.482 (.04)**</td>
<td></td>
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<tr>
<td><strong>Social Networking</strong></td>
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<td>.130 (.05)**</td>
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<tr>
<td><strong>Group SNS Use</strong></td>
<td>.324 (.13)**</td>
<td>.183 (.11)</td>
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<tr>
<td><strong>Group Int. Use</strong></td>
<td>.333 (.07)**</td>
<td>.283 (.05)**</td>
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<tr>
<td><strong>Constant</strong></td>
<td>1.41 (.30)**</td>
<td>-.582 (.40)</td>
<td>1.50 (.28)**</td>
<td>.482 (.04)</td>
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<tr>
<td><strong>Adjusted R²</strong></td>
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<td>.283</td>
<td>.041</td>
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† p<.10, * p<0.05, ** p<.01, *** p<.001
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