Lessons from Facebook: The Effect of Social Network

Sites on College Students' Social Capital[1]

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Abstract

This study examines if Facebook, one of the most popular social network sites among young adults in the U.S., fulfills the promise of civic journalism: to spark attitudes and behaviors that enhance public life and civic action. Using data from a random web survey of college students in Texas (n = 2,603), we find moderate, positive relationships between intensity of Facebook use and students' life satisfaction, social trust, civic participation and political engagement. The associations between Facebook usage and students' social capital are detectable even when taking demographic, socioeconomic and socialization variables into account. These findings highlight important lessons for journalists and media interested in reconnecting individuals, especially young adults, to society and public life.

Lessons from Facebook:

The Effect of Social Network Sites on College Students' Social Capital

Moral panic is a common reaction to new forms of communication. The advent of television spawned fears of mass idiotization. Similarly, in the early 90s, critics held the diffusion of Internet as evidence of individuals' increasing alienation from society and public life. The story with social network sites (SNS) such as Facebook and MySpace is not any different. Unsafe disclosure of information, cyberbullying, addiction, risky behavior and contacting dangerous communities are but a few of the concerns raised in the media about the use of online social networks.

As could be expected, researchers have begun to put to empirical test these claims, reaching a more balanced understanding of SNS. Existing research shows that young people are motivated to join these sites to keep strong ties with friends, to strengthen ties with new acquaintances, and, to a lesser degree, to meet new people online (Acquisti & Gross, 2006). At the same time, sites like Facebook allow them to exchange news and discuss issues, both public (e.g., the 2008 U.S. presidential election) and private (e.g., movie tastes).

In this paper, we examine if social network sites, given their nature and capabilities, have the potential for creating new pathways to civic and political participation. Specifically, we use original survey data to test several hypotheses regarding the influence of Facebook usage on college students' social capital, a multidimensional concept that includes life satisfaction, social trust, civic participation and political engagement. In doing so, we also aim to gain a better understanding of "who is and who is not using these sites, why and for what purposes" (boyd & Ellison, 2007, p. 224).

The impact of online social networks on social capital can be achieved in myriad ways. For instance, common interest groups can help users coordinate for collective action. At the same time, regular exchanges between users can foster trust and norms of reciprocity that are key antecedents of community life. Likewise, news feeds allow users to keep in touch with what is going on "out there."

In this context, social network sites may fulfill many of the promises of civic journalism, such as delivering shared, relevant information to its users and providing a place for exchanging ideas (Merritt, 1998). Moreover, in an era of shrinking audiences and damaged credibility in public institutions, it is vital for the media to help citizens connect to society and facilitate civic action (Rutigliano, 2007). Consequently, journalists and traditional news organizations can learn important lessons from social websites on how to engage individuals, especially young adults, in public life.

Defining Social Network Sites

Facebook, MySpace, Orkut, Cyworld, Bebo and other social network sites are, perhaps, the best examples of O'Reilly's (2005) Web 2.0 environment, where audiences have become co-authors on interactive websites.[5] In a similar fashion as blogs, SNS allow individuals to present themselves to other users using a variety of formats, including text and video. Just like chat services, SNS incorporate a list of other users with whom individuals share a connection. But unlike any other web service, SNS allow individuals to make visible their list of connections to others and to traverse their social networks (boyd & Ellison, 2007). Hence, more than virtual

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[5] Commonly referred to as social media, this genre of Internet-based services includes blogs, wikis, podcasts, content-sharing sites (e.g., Flickr, YouTube), collaborative productions (e.g., Wikipedia, OhMyNews) and virtual worlds (e.g., Second Life).

communities born online, SNS are usually online communities created and maintained to reflect offline relationships.

While the technological features of social websites are similar, the cultures that emerge around them are not (boyd & Ellison, 2007). Facebook first catered to American college students before opening its doors to anyone with an Internet connection. Orkut was developed in the U.S., but at some point almost two-thirds of its users were in Brazil. Hi5 became popular in South America, while Cyworld still dominates in parts of Asia.[6] Segmentation across social network sites is achieved on a demographic basis, too. For instance, members of aSmallWorld are by invitation only. Likewise, prospective members of BeautifulPeople are voted in according to their physical appearance. Some SNS are targeted specifically at minorities (e.g., BlackPlanet, MiGente) and religious denominations (e.g., MyChurch). Even pet owners have been targeted by social websites (e.g., Dogster, Catster). Because there are different types of social networks, conclusions drawn from one platform cannot be easily generalized to another platform (Hargittai, 2007). This study tackles this limitation by focusing on Facebook only.

An Overview of Facebook

Facebook was created in February 2004 by Mark Zuckerberg, Dustin Moskovitz and Chris Hughes as a site for Harvard students only. Shortly after, it expanded to any college student with a .edu e-mail account. Between Fall 2005 and Fall 2006, Facebook expanded to high school networks, first, work networks, later, and, eventually, to Internet users in general. According to comScore Inc.'s rankings of top websites, in 2008 Facebook.com was ranked as the

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[6] An interesting graphic comparison of the popularity of different social network sites around the globe can be found at http://www.lemonde.fr/web/infog/0,47-0@2-651865,54-999097@51-999297,0.html

16th most visited website on the Internet in the U.S. (comScore, 2008a), with 34 million unique

visitors by January 2008, and as the 13th most popular website worldwide (comScore, 2008b),

with 98 million unique visitors by December 2007. As of March 2008, Facebook reported having

67 million active users (those who have returned to the site in the last 30 days), with more than

half of them returning daily and spending an average of 20 minutes per day on the site

(Facebook, 2008).

Like most social network sites, Facebook provides a formatted web page into which each

user can enter personal information, including gender, birthday, hometown, political and

religious views, e-mail and physical addresses, relationship status, activities, interests, favorite

music and movies, educational background and a main personal picture. After completing their

profile, users are prompted to identify others with whom they have a relationship, either by

searching for registered users of Facebook or by requesting their contacts to join Facebook

(usually by e-mail). Once someone is accepted as a "friend," not only the two users' personal

profile but also their entire social networks are disclosed to each other. This allows each user to

traverse networks by clicking through "friends'" profiles, so that one's social network snowballs

rapidly across people and institutions (Walther, Van Der Heide, Kim, Westerman, & Tong,

2008). This capability is the backbone of Facebook and other SNS and what attracts millions of

users around the globe.

Facebook profiles also include two types of messaging services. A private system, which

is very similar to a webmail service, and a public system called "The Wall," where "friends"

leave comments to the owner of the profile that can be viewed by other users. Usually, "The

Wall" contains short messages that reflect sentiments, common activities between "friends," or

call attention to external websites or events.

To keep users updated about their social circles, Facebook has two features: "News Feed", which appears on the homepage of each user, and "Mini-Feed", which appears in each individual's profile. "News Feed" updates a personalized list of news stories throughout the day generated by the activity of "friends" (e.g., John added the Rolling Stones to his favorites, Jane changed her status to "single" again, etc.). Thus, each time users log in, they get the latest headlines in their social networks. "Mini-Feed" is similar, except that it centers around one individual. Each person's "Mini-Feed" shows what has changed recently in their profile and what content or modules ("applications") they have added. Because individuals can delete from their own "Mini-Feed" stories they do not like, users retain control of who gets to read or see what about them.

Among the most popular modules users can incorporate to their profiles is "Facebook Groups," which allows users to create and join groups based around common interests and activities. The "Groups" application displays each individual's groups as well as groups their "friends" have joined recently. Thus, an important share of the civic and political impact of Facebook should occur within groups developed by users and organizations.

What is Social Capital?

There seems to be a consensus that social capital is an important feature of healthy, effective democracies (Putnam & Goss, 2002). But what exactly is social capital? A cursory review of the literature on the subject shows that it involves networks, social trust, civic engagement, political participation, membership in groups and associations, volunteering, confidence in political institutions, life satisfaction and a variety of other concepts (Bourdieu, 1983; Brehm & Rahn, 1997; Coleman, 1988; Dekker & Uslaner, 2001; Newton, 2006; Putnam, 2000).

The substantial disagreements on how to define, operationalize and measure social capital have led some researchers to discard the concept altogether and work with more manageable variables. An alternative path is to recognize that social capital is a multidimensional concept. The challenge, in this case, is to integrate the different dimensions of the concept into a single, yet flexible theoretical framework. One such effort was conducted by Scheufele and Shah (2000), who were inspired by Putnam's (1993; 1995a; 1995b) conceptualization of social capital as "elements of social life as networks, norms, and trust that provide the means for citizens to resolve collective action problems" (Scheufele & Shah, 2000, p. 113). These authors distinguished three dimensions of social capital: intrapersonal, interpersonal and behavioral. The intrapersonal dimension is related to individuals' life satisfaction and personal well-being. The interpersonal dimension refers to trust among individuals, also called social or generalized trust in others. The behavioral dimension incorporates individuals' active participation in the civic and political arenas (for a similar approach, see Howard & Gilbert, 2008).

Of course, not every form of social capital is good for democracy (the classic examples are the Klu Klux Klan and the Nazi infiltration of voluntary associations in the 1930s), but the general idea is that there is a virtuous circle between large stocks of social capital and functioning, responsive political systems (Axelrod, 1984; Putnam, 1993). In this study, we adopt the framework suggested by Scheufele and Shah (2000) to test the impact of Facebook on users' life satisfaction, social trust, civic and political participation.

Life Satisfaction and Social Trust

Life satisfaction and other indicators of quality of life reflect a general evaluation of one's surroundings, an evaluation which may be positive or negative (Scheufele & Shah, 2000). Usually, researchers equates life satisfaction with subjective happiness or personal contentment

(Diener, Emmons, Larsen, & Griffin, 1985). Social capital theorists posit that individuals with high levels of life satisfaction and happiness are more likely to trust other people and engage in collective endeavors than are individuals who are more dissatisfied or unhappy (Putnam, 2000). For instance, Inglehart (1990) concluded that "life satisfaction, happiness, interpersonal trust . . . all tend to go together in a cultural cluster" (p. 43).

While few argue the role of life satisfaction on citizen participation, social trust is more problematic. A simple, straightforward definition of trust is "reliance on another's good will" (Baier, 1986, p. 235). To trust is to believe that others will not knowingly or willingly harm us or take advantage. Hence, it involves a leap of faith and a degree of risk. Newton (1999) argued that trust is built upon imperfect knowledge because the more we know about others the more we may trust or distrust them, but we cannot be certain of our knowledge (or it would not involve trust). In general, social trust seems to be a function of individual morality (Fukuyama, 1995; Uslaner, 2002), satisfaction with life in general (Shah, 1998; Wuthnow, 2002), and personal resources, including income, education and status (Newton, 1999).

Because trust involves knowledge, it means that it can change through the accumulation of information and experience. The specific weight of information and experience depends on the object that is the recipient of our trust. Trust in individuals, herein social trust, is built more often upon a combination of socialization processes (e.g., what we learn from our parents; see Uslaner, 2002) and deep knowledge of those particular individuals over a period of time (Wuthnow, 2002, pp. 64-65). Trust in institutions, often defined as political trust, is built upon a combination of personal experience and information provided by sources such as the mass media (Moy & Pfau, 2000; Newton, 1999).

What role does social trust play in the well-being of society? Social capital theorists suggest that it facilitates associative behavior, which fosters a strong civil society, which makes political institutions and officials more responsive, all of which is translated into a more effective democracy. Fukuyama (1995) went even further. In his view, "a nation's well-being, as well as its ability to compete, is conditioned by a single, pervasive characteristic: the level of trust inherent in the society" (p. 7). This is high praise, indeed. However, trust is not automatically conducive to democratic governance. As Baier (1986) warned, "Exploitation and conspiracy, as much as justice and fellowship, thrive better in an atmosphere of trust" (pp. 231-232). Think, for instance, about the consequences for the survival of democracy of untrammeled faith on authoritarian leaders. Although it is not the aim of this paper to discuss the many attributes associated with trust, sufficient is to say that trustworthiness is a necessary (but insufficient) condition for the well-being of any democratic system (Lenard, forthcoming; Moy & Scheufele, 2000).

Civic and Political Participation

Participation is a slippery concept; several interpretations have been given of what exactly is meant by this construct. Some researchers identify participation with electoral activities, such as voting and working for political parties (e.g., Conway, 1985). Recognizing that participation goes beyond elections, others have included in their measures activities such as working for the community and attending a protest (e.g., Verba, Schlozman, & Brady, 1995). Even processes such as media use and news attention have been identified as markers of participation (e.g., Zaller, 1992).

Given the multidimensionality of the concept, in this study participation is considered to involve three forms of activities, including political, civic and expressive. Verba, Schlozman,

and Brady (1995) defined political participation as "activity that has the intent or effect of influencing government action —either directly by affecting the making or implementation of public policy or indirectly by influencing the selection of people who make those policies" (p. 38). This includes activities such as voting, working for political campaigns, donating money to candidates and displaying political bumper stickers. Civic participation, on the other hand, is defined as "organized voluntary activity focused on problem solving and helping others. It includes a wide range of work undertaken alone or in concert with others to effect change" (Zukin, Keeter, Andolina, Jenkins, & Delli-Carpini, 2006, p. 7). Volunteering for helping the needy, fund raising for NGOs, participating in community service, or being an active member of an environmental organization would all fall under the category of civic participation. Lastly, following Zukin et al. (2006), participation involves "public voice," or activities by which "citizens give expression to their views on public issues" (p. 54). This includes contacting officials, protesting, boycotting or buying (i.e., "buycotting") products for political reasons and signing petitions.

By including different types of activities under the umbrella of participation, we are recognizing that the domain of politically relevant activities includes both conventional and new forms of mobilization. Thus, some people may be politically engaged but less civically engaged; others may be oriented toward civic participation, but less inclined to participate in political matters; still, others may be both politically and civically engaged.

Distinguishing among different types of participatory behavior helps to assess in a more accurate way the level of engagement of any given society. However, the distinctions between political, civic and expressive activities are more theoretical than empirical. In fact, the boundaries between them are quite porous. As Zulkin and his colleagues (2006) explained, "civic

engagement…can have important consequences for matters with which the government is also concerned…[and the] government may not be directly involved but may serve as arbiter… of decisions and activities in the civic realm" (p. 52).

From a normative point of view, citizens' participatory behavior, like trust, is regarded as vital for the good functioning of democratic systems. When people participate, they have a voice in public affairs, can hold authorities accountable and empower themselves to act on their own behalf (Burns, Schlozman, & Verba, 2001). Still, participation, like trust, is not automatically conducive to democratic governance. Those who support the "limited citizenship" model, for instance, argue that too much participation can obstruct and complicate governance by delaying, politicizing and oversimplifying policy problems that require skilled leadership and expertise (Gamson, 2001, p. 56). Most scholars, however, agree that the problem of most democracies in the 21st Century is not of an excess of participation but of stagnation or outright decline of it, particularly among young cohorts (Putnam, 1995b).

Existing Research on SNS, the Internet and Social Capital

In their in-depth review of scholarship on social network sites, boyd and Ellison (2007) noted that "the bulk of SNS research has focused on impression management and friendship performance, networks and network structure, [bridging] online [and] offline connections, and privacy issues" (p. 219). Of concern here is the potential of SNS to bridge (or create a gap) between online and offline connections —a key component of social capital theory.[7]

Donath and boyd (2004) were among the first to hypothesize that online social networks may not increase the number of "strong ties" (i.e., long-term, sustained interactions) a person

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[7] Interested readers in other issues relating to social network sites should review the bibliography cited by boyd and Ellison (2007).

may have, but may increase the "weak ties" (i.e., infrequent, casual interactions) a person could form because the technology is suited to maintain these ties cheaply and easily. This proposition was empirically tested by Ellison, Steinfield, and Lampe (2007) using survey data from a small sample of undergraduate students in the U.S. Applying Putnam's (2000) framework of "bridging" and "bonding" social capital, Ellison and her colleagues found that use of Facebook had a strong association to maintaining or solidifying existing offline relationships, as opposed to meeting new people. Most interestingly, these authors found that Facebook usage interacted with students' psychological well-being, suggesting that it might provide greater benefits for users experiencing low self-esteem and low life satisfaction.

That social network sites can foster users' well-being and social capital does not mean that they always do. Survey research by Nyland, Marvez, and Beck (2007) found that heavy users of MySpace felt less socially involved with the community around them than light users. Furthermore, a substantial proportion of respondents were using this social network for entertainment, as opposed to maintaining or strengthening offline relationships. This line of research echoes one of the most pervasive criticisms against SNS, which is that they lead to users' isolation (e.g., Hodgkinson, 2008).

Several methodological problems may explain the contradictory findings of previous studies, including the use of purposive samples and asking about different platforms. The mixed evidence about the impact of social network sites on users' attitudes, however, reflects the larger issue of "the Internet paradox" (Kraut et al., 2002; Kraut et al., 1998). On one hand, there are studies that support a "rich get richer" perspective, where those that are psychologically better-off (e.g., have high self-esteem and life satisfaction, have more offline contacts, are more popular, etc.) gain more from using Internet services (e.g., Tian, 2003). On the other hand, there

is research that supports a "poor get richer" perspective, where those that are less better-off gain more from the Internet than those who are better-off (Stern & Dillman, 2006).

Certainly, this paradox is related to the diffusion of Internet. Early adopters differ significantly from late adopters and thus the effects of using Internet services are confounded with differences across segments of the population. In this regard, focusing on a population with total Internet access, as this study does, can help uncover the true impact of social media.

Beyond social network sites, Internet use in general has been linked both to increases and decreases in social capital. Echoing Putnam's (2000) "time displacement hypothesis", Nie (2001) argued that Internet use detracted individuals from face-to-face interactions, which might diminish their social capital. However, later research has found that online communication has a positive role on individuals' participation in community life, fostering norms of trust and reciprocity (Best & Dautrich, 2003; Kavanaugh, Reese, Carroll, & Rosson, 2005; Kobayashi, Ikeda, & Miyata, 2006; Räsänen & Kouvo, 2007). The evidence is far from conclusive, but it is clear that the positive or negative effects of the Internet on social capital are contingent upon the way this medium is used (Ji-Young, 2006).

Hypotheses and Research Questions

With the existing literature on social network sites and social capital in mind, this study uses original survey data to test the effects of using Facebook on young adults' life satisfaction, social trust, civic and political participation. Formally, the hypotheses are as follows:

H1: Intensity of Facebook use is positively associated with life satisfaction.

H2: Intensity of Facebook use is positively associated with social trust.

H3a: Intensity of Facebook use is positively associated with civic participation.

H3b: Intensity of Facebook Groups use is positively associated with civic participation.

H4a: Intensity of Facebook use is positively associated with political participation.

H4b: Intensity of Facebook Groups use is positively associated with political participation.

Whatever effects social network sites may have on young adults' social capital, they may be contingent upon individuals' socialization (e.g., gender, ethnicity, socioeconomic background, etc.) and attitudes toward their life and others (i.e., life satisfaction and social trust, respectively). Earlier research on this area, however, is too contradictory to formulate a specific hypothesis. Hence, we investigate the following research questions:

RQ1: Does the relationship between intensity of Facebook use and civic and political participation vary according to gender, race and ethnicity, parental education, life satisfaction and social trust?

RQ2: Does the relationship between intensity of Facebook Groups use and civic and political participation vary according to gender, race and ethnicity, parental education, life satisfaction and social trust?

Methods

Although Facebook is open to anyone with Internet access, most of its users in the U.S. are in the 18 to 29 age group. According to a national random survey conducted in December 2007 by the Pew Research Center (2008), 67% of the respondents in this age cohort reported using social network sites, compared to 21% of those 30 to 39, and 6% of those over 40. Thus, Facebook represents an ideal venue for exploring communication patterns among young adults.

To fulfill the goals of this project, a web-based survey was conducted in Fall 2007 at two large public universities in Texas, an undergraduate-dominated university in a small town and a commuter school in a large metropolitan area. The cultural and geographical distinctiveness of

both campuses ensured surveying a diverse, representative population of young adults across the largest state of the U.S.

A random sample was used to select 50% of currently registered students who had agreed to list their email address publicly with each university. Between November 9, 2007 and December 9, 2007, responses from 3,296 individuals were collected using Survey Monkey (www.surveymonkey.com), an online survey hosting site. As an incentive to participate, respondents were offered to enter in a random draw of four $25 gift cards from Amazon.com.

The combined simple response rate was 8.2%, close to the 10%-mark of most random web surveys of college students. Despite the low response rate, the sample obtained was representative of the student population of both universities from which it was drawn. At the larger of the two campuses, the ethnic breakdown of the respondents ($n = 2,215$) —74% White, 10% Hispanic, 4% Asian, 3% Black, 1% Native American, 2% International 6% other or unknown— compared well with the university's actual demographics: 72% White, 11% Latino, 4% Asian, 3% Black, 1% Native American, 8% international and less than 1% other or unknown. Likewise, the sample ($n = 1,081$) representing the other public school involved in this study reflected favorably the university's diversity. The sample group was 67% White, 8% Latino, 8% Asian or Pacific Islander, 8% Black, 3% Native American, and 10% other or unknown; the university's actual demographic breakdown is 65% White, 11% Latino, 5% Asian or Pacific Islander, 13% Black, and 6% other or unknown. The major difference between sample and population demographics relates to gender. At the larger university, 37% of the respondents were male and 63% were female, while the actual breakdown is 53% male and 47% female. A similar pattern was evident at the second university —29% of the respondents were male and 71% were female, whereas the actual breakdown is 43% males and 57% females.

Because the purpose of this study is to assess the role of Facebook among young adults, only respondents in the 18 to 29 age group were selected for the analysis (n = 2,603).

Dependent Variables

Life Satisfaction. Respondents' perceived level of personal contentment was assessed using the Satisfaction with Life Scale developed by Diener, Emmons, Larson and Griffin (1985). This 5-item scale is among the most widely-used measures in psychology to assess global life satisfaction, showing high levels of internal consistency and temporal reliability (Pavot, Diener, Colvin, & Sandvik, 1991). Respondents were asked their level of agreement using a 6-point scale ranging from 1 (strongly disagree) to 6 (strongly agree) with each of the following statements: "In most ways my life is close to my ideal," "The conditions of my life are excellent," "I am satisfied with my life," "So far I have gotten the important things I want in life," "If I could live my time over, I would change almost nothing."

Social Trust. A popular measure of social trust is Rosenberg's (1956) Faith in People scale, which has been used with minor variations by major surveys, including the General Social Survey and the World Values Survey. The scale consists of a series of two forced-choice statements, such as "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?" This scale, however, presents two problems. First, the items are double-barreled questions, that is, the two parts of each question are not exact opposites but two separate questions (Miller & Mitamura, 2003; Wuthnow, 1998). Second, conceptualizing trust as a dichotomy prevents respondents from making a more fine-grained judgment. Hence, the original Rosenberg scale was broken down into single items and response choices were expanded using a 5-point scale, following Burns and Kinder (2000). Thus, social trust was measured with the statements "Generally speaking, would you say that people can be

trusted," "People try to take advantage of you if they got the chance," "People try to be fair," "You can't be too careful in dealing with people," "People try to be helpful," and "People are just looking out for themselves". Response choices were 1 (never), 2 (hardly ever), 3 (some of the time), 4 (most of the time), and 5 (all of the time).

    Civic and Political Participation. Respondents' civic and political participation was gauged using a reduced form of the Index of Civic and Political Engagement developed by CIRCLE (Andolina, Keeter, Zukin, & Jenkins, 2003), an organization that has conducted several national surveys related to youth engagement. Respondents' were asked whether they had worked or volunteered in a community project; worked or volunteered for nonpolitical groups (hobby club, environmental group, minority student association, etc.); raised money for charity or ran/walked/biked for charity; worked or volunteered for political groups or candidates; voted in a local, state or national election; tried to persuade others in an election; signed a petition; worn or displayed a badge or sticker related to a political or social cause; and deliberately bought certain products for political, ethical or environmental reasons. To reduce the social desirability bias implicit in a yes/no format, there were three response choices: 1 ("Yes, within the last 12 months"), 0.5 ("Yes, but not within the last 12 months") and 0 ("No, never").

    For the analyses, all the dependent variables were standardized to a 0 to 1 scale (see Table 1 for descriptive statistics, reliability estimates and item wording).

Table 1

Descriptive Statistics for Scales of Life Satisfaction, Social Trust, Civic Participation and

Political Participation

	M	SD
Life Satisfaction Scale[a,b]	**.75**	**.16**
(Cronbach's alpha = .87)		
In most ways my life is close to my ideal	4.41	1.12
The conditions of my life are excellent.	4.59	1.08
I am satisfied with my life.	4.79	1.03
So far I have gotten the important things I want in life.	4.56	1.15
If I could live my life over, I would change almost nothing.	4.22	1.35
Social Trust Scale[a,c]	**.52**	**.11**
(Cronbach's alpha = .74)		
Generally speaking, would you say that people can be trusted	3.42	.65
People try to take advantage of you if they got the chance (reversed)	2.96	.64
People try to be fair	3.45	.63
You can't be too careful in dealing with people (reversed)	2.52	.84
People try to be helpful	3.54	.59
People are just looking out for themselves (reversed)	2.61	.68
Civic Participation Scale[a,d]	**.74**	**.26**
(Cronbach's alpha = .66)		
Worked or volunteered in a community project	.84	.27
Worked or volunteered for non-political groups	.75	.35
Raised money for charity or ran/walked/biked for charity	.64	.36
Political Participation Scale[a,d]	**.41**	**.26**
(Cronbach's alpha = .68)		
Worked or volunteered for political groups or candidates	.18	.32
Voted in a local, state or national election	.43	.43
Tried to persuade others in an election	.35	.44
Signed a petition	.56	.41
Worn or displayed a badge or sticker related to a political or social cause	.41	.44
Deliberately bought certain products for political, ethical or environmental reasons	.56	.46

Notes. [a] Individual items were first recoded to a 0 to 1 range before taking an average to create the scale. [b] Response categories ranged from 1=strongly disagree to 6=strongly agree. [c] Response categories ranged from 1=never to 5=all of the time. [d] Response categories were 0 = no, never, 0.5 = yes, but not within last 12 months, and 1 = yes, within the last 12 months.

Independent Variables

    Sociodemographics. The variables included gender (female = 1, male = 0), age (years), ethnicity (White = 1, else = 0), hometown (within Texas = 1, else = 0), year in school (1 = freshman, 2 = sophomore, 3 = junior, 4 = senior, 5 = master's, 6 = doctoral) and highest level of education completed by parents (1 = less than high school, 2 = high school, 3 = some college, 4 = college, 5 = graduate).

    Intensity of Facebook Use. The traditional approach for measuring media use in communication research is to gauge the frequency or duration of exposure to a medium, but this approach fails to account for the richer user experience provided by interactive online sites. A more complete measure of intensity of Facebook use was developed by Ellison, Steinfield, and Lampe (2007), who created a scale to gauge user engagement in Facebook activities based on number of "friends," amount spent on the network on a typical day, and level of agreement with the following statements: "Facebook is part of my everyday activity," "I am proud to tell people I am on Facebook," "Facebook has become part of my daily routine," "I feel out of touch when I haven't logged onto Facebook for a day," "I feel I am part of the Facebook community at the campus," and "I would be sorry if Facebook shut down." The same scale was used in this study. The response choices for the number of "friends" ranged from 1 (less than 10) to 9 (400 or more). The duration question used a 7-point scale (from 0 = no time at all to 6 = more than 3 hours per day), while the response choices for the Likert-scale questions ranged from 1 (strongly disagree) to 6 (strongly agree). These individual items were first recoded to range from 0 to 1 before taking an average to create the scale, due to differing item scale ranges (see Table 2).

Table 2

Descriptive Statistics for Scale of Intensity of Facebook Use

	%	M	SD
Intensity of Facebook Use[a]		.66	.19
(Cronbach's alpha = .89)			
About how many total Facebook friends do you have?		6.03	2.49
1 Less than 10	2.0		
2 10-49	8.4		
3 50-99	9.7		
4 100-149	11.3		
5 150-199	12.2		
6 200-249	9.9		
7 250-299	8.9		
8 300-399	11.7		
9 400 or more	26.0		
On a typical day, about how much time do you spend on Facebook?		2.41	1.26
0 No time at all	4.9		
1 Less than 10 min	18.2		
2 10 to 30 min	34.9		
3 More than 30 min, up to 1 hr	22.2		
4 More than 1 hr, up to 2 hrs	14.3		
5 More than 2 hrs, up to 3 hrs	3.9		
6 More than 3 hrs	1.5		
Facebook is part of my everyday activity[b]		4.54	1.48
I am proud to tell people I am on Facebook[b]		4.27	1.29
Facebook has become part of my daily routine[b]		4.54	1.48
I feel out of touch when I haven't logged onto Facebook for a day[b]		3.29	1.62
I feel I am part of the Facebook community at the campus[b]		3.72	1.52
I would be sorry if Facebook shut down[b]		4.61	1.53

Notes. [a] Individual items were first recoded to a 0 to 1 range before taking an average to create the scale. [b] Response categories ranged from 1=strongly disagree to 6=strongly agree.

Intensity of Facebook Groups use. Respondents were asked several questions about how often they read and post messages and post new discussion topics in the profiles of the online groups they have joined on Facebook (from 1 = all of the time to 5 = never), as well as how much time they spend reading and posting messages on the profiles of the online groups (from 0 = no time at all to 6 = more than 3 hours per day). Another question asked respondents to choose

one of the following descriptions that best described their participation in the online groups they

have joined: 1 (rarely visit profiles), 2 (reads wall/discussion board), 3 (mostly reads, sometimes

write on wall/discussion board), 4 (reads and writes on wall/discussion board), and 5 (reads,

writes and starts new topics on wall/discussion board). Individual items were first recoded to

range from 0 to 1 before taking an average to create the scale (see Table 3).

Table 3

Descriptive Statistics for Scale of Intensity of Facebook Groups Use

	%	M	SD
Intensity of Facebook Groups Use[a] **(Cronbach's alpha = .82)**		**.19**	**.14**
On a typical day, about how much time do you spend reading and posting (combined) messages on the profiles of online groups you have joined on Facebook?		.63	.79
0 No time at all	51.5		
1 Less than 10 min	37.2		
2 10 to 30 min	8.6		
3 More than 30 min, up to 1 hr	2.2		
4 More than 1 hr, up to 2 hrs	0.2		
5 More than 2 hrs, up to 3 hrs	0.1		
In the past week, how often do you: Read the profiles of online groups you have joined?[b] (reversed)		1.05	.93
Post the messages in online groups you have joined?[b] (reversed)		.63	.75
Post the new discussion topics in online groups you have joined?[b] (reversed)		.38	.64
Which one of the following best describes your participation in the online groups you have joined on Facebook?		1.60	.92
1 Rarely visit profiles	64.3		
2 Reads wall/discussion board	16.8		
3 Mostly reads, sometimes write on wall/discussion board	15.1		
4 Reads and writes on wall/discussion board	2.5		
5 Reads, writes and starts new topics on wall/discussion board	1.4		

Notes. [a] Individual items were first recoded to a 0 to 1 range before taking an average to create the scale. [b] Response categories ranged from 1=all of the time to 5=never.

Statistical analysis. To test whether there was a relationship between intensity of using Facebook and each social capital variable, hierarchical multivariate regressions were run to account for potential rival explanations and assess the exact contribution of each block of predictors. Only respondents with a Facebook account were included. Because of the reciprocal relationship between the intrapersonal and interpersonal dimensions of social capital, life satisfaction was entered as a predictor of social trust and vice versa. In turn, both variables were entered as predictors of civic and political participation.

Results

Descriptives. Before proceeding to the formal tests of the hypotheses, it was important to gain an understanding of the differences between those who do (n = 2,437, or 94%) and who do not (n = 166, or 6%) have a Facebook account. Small differences would reassure that the effects of intensity of Facebook use tested in the subsequent multivariate analyses were not the result of a self-selection bias, that is, that those with higher life satisfaction, social trust, civic and political participation happened to use Facebook more often. Table 4 presents t-tests or chi-square tests between members and nonmembers of Facebook on key demographic variables.

Female students were more likely to have a Facebook account than male students, which was coherent with the true gender distribution of users of this site (at the time of the survey, the proportion of female undergraduate students in Facebook in the U.S. was 54%, compared to 46% of male students). Not surprisingly, age and year in school were highly correlated with being a Facebook user, with younger cohorts having more presence in the site than older cohorts. Interestingly, students' socioeconomic background did not have a linear relationship with having a Facebook account. Although there was some indication that higher levels of parental education

were positively related with being a member of the site, nonmembers outnumbered members in

terms of parents with postgraduate degrees.

Table 4

Differences Between Facebook Members and Nonmembers

|	**Members** (n = 2,437)	**Non-Members** (n = 166)	**Significance of Difference**[a]
Gender (female)	66.6%	55.5%	p < .05
Age (years)	20.71	23.74	p < .001
Hometown (within Texas)	84.5%	74.8%	p < .01
Race/ethnicity (White)	82.6%	71.4%	p < .01
Year in school (1= freshman, 6 = doctoral)	2.89	3.70	p < .001
1 First year	22.8%	16.9%	
2 Sophomore	18.9%	6.8%	
3 Junior	20.9%	15.3%	
4 Senior	25.0%	23.7%	
5 Master's	8.8%	24.6%	
5 Doctoral	3.7%	12.7%	
Highest level of parental education:	3.90	3.73	p < .001
1 Less than high school	2.0%	2.5%	
2 High school	7.6%	15.1%	
3 Some college	18.6%	24.4%	
4 College	42.1%	22.7%	
5 Graduate	29.8%	35.3%	

Notes. [a] Statistical significance of the difference between members and nonmembers was assessed with chi-square tests for nominal variables and two-tailed t-test scores not assuming equal variances for continuous variables.

Despite the statistically significant differences between Facebook members and

nonmembers, in substantive terms both groups of respondents were relatively homogenous in

their demographic characteristics, that is, a majority of Facebook members and nonmembers

were female, White, young undergraduate students raised in Texas.

Further insight into respondents' attitudes and behaviors can be gleaned from Figure 1,

which shows the distribution of key independent and dependent variables across three levels:

low, moderate and high.[8]

Figure 1

Levels of Intensity of Facebook Use, Intensity of Facebook Groups Use, Life Satisfaction, Social

Trust, Civic and Political Participation

_____
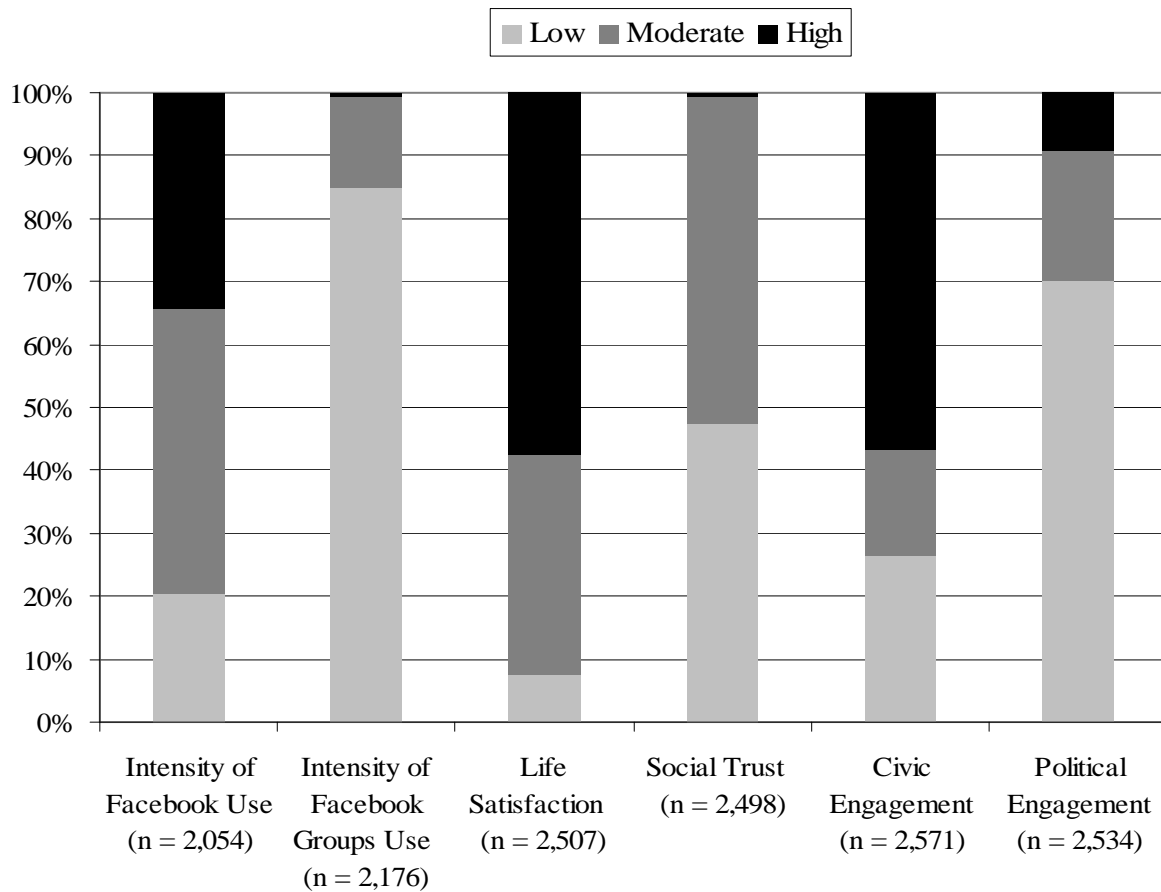
[8] For each variable, scores between 0 and 0.33 were classified as low, between 0.34 and 0.66

were moderate, and between 0.66 and 1 were high.

Nearly 80% of respondents were moderate to heavy users of Facebook, but 85% were classified as light users of Facebook Groups. Not surprisingly, a majority of the respondents (57.5%) had high levels of life satisfaction, although almost half of them (47.4%) had low levels social trust. Civic participation was more prevalent than political participation, with 73.5% in the moderate to high categories in the former, compared to only 30% in the same groups for the latter. In general, then, there was substantial variation in the variables across respondents.

Life satisfaction and social trust. As shown in Table 5, the block of demographic variables explained 2.6% of the variance in life satisfaction and 1.7% of the variance in social trust. In turn, social trust explained 4.1% of the variance in life satisfaction, while the latter explained 4.2% of the variance of the former. In comparison to these first two blocks, the contribution made by Facebook use was smaller but nevertheless statistically significant. Specifically, the scale measuring intensity of Facebook use was positively associated with life satisfaction and social trust, providing support for the first couple of hypotheses (H1 and H2). The relationship of Facebook use and life satisfaction was stronger than that between using the social network site and social trust. For example, the model predicted that the index of life satisfaction was, *ceteris paribus*, 14.5 percentage points higher for those with the highest score in the index of intensity of Facebook use compared to those with the lowest value. In comparison, social trust increased by 4.7 percentage points when the index of intensity of Facebook use was varied from the lowest value to the highest value.

Civic and political participation. For both models shown in Table 6, demographic variables explained the most variance, with R-squares increasing 4.3% for civic participation and 2.7% for political participation. The contribution of life satisfaction and social trust were

substantial for civic engagement (R^2 change $= 3.8\%$, $p < .001$), but negligible for political

participation (R^2 change $= 0.0\%$, $p > .10$).

Table 5

Regressions Predicting Life Satisfaction and Social Trust

	Life Satisfaction (n = 1,935)			Social Trust (n = 1,935)		
	B	(SE)	*p*	B	(SE)	*p*
Gender (Female)	.011	(.007)	.131	.005	(.005)	.302
Age	-.003	(.003)	.278	.002	(.002)	.320
Race (White)	.020	(.009)	.027	.014	(.007)	.029
Year in School	.009	(.004)	.032	.003	(.003)	.351
Hometown in Texas	.024	(.009)	.012	.004	(.007)	.572
Highest level of parents' education	.007	(.004)	.039	.006	(.003)	.024
R^2 (%)	2.6		.000	1.7		.000
Social trust	.263	(.031)	.000	—	—	
Life satisfaction	—	—		.137	(.016)	.000
R^2 Change (%)	4.1		.000	4.2		.000
Intensity of Facebook use	.145	(.019)	.000	.047	(.014)	.001
R^2 Change (%)	2.7		.000	0.6		.001
Final R^2 (%)	9.4		.000	6.4		.000
Adjusted R^2 (%)	9.1			6.0		
SEE	.146			.105		

Notes. Regression coefficients are unstandardized, controlling for all other variables. Standard errors in parentheses. Statistical significance is derived from two-tailed *t* tests. Dashes mean that the independent variable was not entered in the regression.

The variance in both forms of participation explained by the block of Facebook variables

was small. Using the social network site increased the R-square of the model for civic

participation 1.8%, while the change in R-square accounted for this variable in the model

predicting political participation was 2.1%. Nonetheless, both intensity of Facebook use and

intensity of Facebook Groups use were positively associated to civic participation, which

supported H3a and H3b. Specifically, civic engagement increased 16.1 and 9.5 percentage

points, respectively, when the indexes for intensity of Facebook use and intensity of Facebook

Groups changed from their lowest value to their highest value, holding all other variables

constant.

Table 6

Regressions Predicting Civic and Political Participation

	Civic Participation (n = 1,727)			Political Participation (n = 1,901)		
	B	(SE)	p	B	(SE)	P
Gender (Female)	.040	(.012)	.001	-.028	(.013)	.039
Age	-.012	(.005)	.013	.001	(.005)	.817
Race (White)	-.000	(.016)	.997	.040	(.017	.019
Year in School	.006	(.007)	.419	.032	(.008	.000
Hometown in Texas	.035	(.016)	.028	.032	(.017	.060
Highest level of parents' education	.018	(.006)	.003	.010	(.007	.123
R^2 (%)	4.3		.000	2.7		.000
Social trust	.192	(.053)	.000	-.002	(.057)	.968
Life satisfaction	.219	(.039)	.000	-.011	(.042)	.790
R^2 Change (%)	3.8		.000	0.0		.934
Intensity of Facebook use	.161	(.035)	.000	.016	(.038)	.671
Intensity of Facebook Groups use	.095	(.044)	.031	.274	(.048)	.000
R^2 Change (%)	1.8		.000	2.1		.000
Final R^2 (%)	9.9		.000	4.8		.000
Adjusted R^2 (%)	9.4			4.2		
SEE	.234			.251		

Notes. Regression coefficients are unstandardized, controlling for all other variables. Standard errors in parentheses. Statistical significance is derived from two-tailed *t* tests.

In the regression predicting political participation, only Facebook Groups use had a

statistically significant positive effect, consistent with H4b. Holding everything else constant,

changing the index of Facebook Groups from its lowest score to its highest score resulted in an

increase of political engagement of 27.4 percentage points. Intensity of Facebook use, in comparison, did not make a significant contribution to the participation model, suggesting that only certain features of Facebook support political participation. H4a was thus not supported.

A post-hoc analysis provided further evidence of the role played by Facebook Groups. Table 7 shows regressions of political and civic participation on membership in political and civic groups within the online network. The coefficients of the regressions reveal that belonging to political groups in Facebook was strongly related to political participation, while belonging to civic groups was not (with the exception of student groups). With civic participation, the relationship was the opposite: belonging to civic groups in Facebook was positively associated with offline civic engagement, while belonging to political groups was not.

RQ1 asked if the relationship between intensity of Facebook use and civic and political participation varied according to gender, race and ethnicity, parental education, life satisfaction and social trust. To answer this question, a series of interactions between intensity of Facebook use and each demographic characteristic were entered into the models of participation (not shown). For the model predicting civic participation, only the interaction between race and Facebook was statistically significant. Specifically, intensity of Facebook use had a weaker effect on civic participation among White students compared to non-White students (beta = -.16, $p < .05$). In the model of political participation, there was a positive, significant interaction between intensity of Facebook use and social trust (beta = .59, $p < .05$), suggesting that the impact of the social network site on young adults' political engagement was particularly strong for trusting individuals. No other interactive term in the regression of political participation was statistically significant.

Table 7

Regressions Predicting Civic and Political Participation with Specific Facebook Groups

	Civic Participation (n = 1,951)			Political Participation (n = 1,925)		
	B	(SE)	p	B	(SE)	p
Demographics R^2 (%)	4.9		.000	2.4		.000
Attitudes R^2 Change (%)	3.4		.000	0.0		.934
Intensity of Facebook use	.117	(.032)	.000	.005	(.033)	.880
Member of a political Facebook Group (yes)	.001	(.012)	.909	.162	(.013)	.000
Member of an off-campus organization Facebook Group (yes)	.013	(.012)	.281	.014	(.013)	.278
Member of an on-campus organization Facebook Group (yes)	.084	(.012)	.000	.025	(.013)	.052
Member of a student group Facebook Group (yes)	.056	(.011)	.000	.039	(.012)	.001
R^2 Change (%)	7.1		.000	10.6		.000
Final R^2 (%)	15.3		.000	12.9		.000
Adjusted R^2 (%)	14.7			12.3		
SEE	.230			.240		

Notes. Regression coefficients are unstandardized, controlling for all other variables. Standard errors in parentheses. Statistical significance is derived from two-tailed *t* tests.

The second research question (RQ2) asked if the association between intensity of

Facebook Groups use and civic and political participation varied according to respondents'

demographics, life satisfaction and social trust. Using the same approach of entering

multiplicative terms in the models for civic and political participation, only one interaction

achieved statistical significance: among White respondents, the relationship between intensity of

Facebook Groups use and political participation was weaker than among non-White respondents

(beta = -.23, *p* < .05).

Discussion

The purpose of this study was to explore if young adults' use of social network sites such as Facebook was related to their stock of social capital, a concept that includes intrapersonal, interpersonal and behavioral elements. Using survey data collected at different campuses, we predicted that there were positive relationships between intensity of Facebook use and Facebook Groups use and students' life satisfaction, social trust, civic and political participation. Our results provide consistent evidence that these positive associations exist and are not spurious. Despite the extensive demographic and attitudinal controls, Facebook use and Facebook Groups use still predict respondents' social capital. These findings, of course, do not support the popular view that heavy Facebook users are more isolated and less connected than occasional users. In fact, the data show that the opposite holds true, a finding that is coherent with the study conducted by Ellison and her colleagues (2007).

Of course, given the cross-sectional nature of this study, we cannot conclude that there is a causal impact between using social network sites and social capital. But the mere fact that social capital variables and intensity of Facebook use are positively associated is good news for those interested in the potential impact of Web 2.0 technologies on youth engagement. Admittedly, the relationship is not large, as revealed by the incremental R-squares of the regressions. After all the other variables are taken into consideration, the Facebook variables explain an additional 2.7% of the variance in social capital at most. This should not come as a surprise. Previous research has demonstrated that individual's life satisfaction, trust and participation is influenced by their personality, life experiences, socialization into adulthood, press coverage and a host of other variables. In fact, it would be quite troubling that a sole

technological platform such as Facebook could influence to a large extent young adults' stock of social capital.

Nevertheless, the results of this investigation contradict the expectations of the "time displacement hypothesis," which was first suggested by Putnam (2000) for the effects of television on social capital and then expanded to the Internet by cyber-pessimists. Intensity of social media use, at least for those using Facebook, appears to promote greater trust and participation.

Interestingly, the associations between Facebook use and social capital variables were not moderated by gender, parental education, and —in the case of participation— by life satisfaction or social trust. Only ethnicity seems to intervene in the relationship between Facebook usage and social capital, with minority students gaining more from the social network site compared to White students. Because this study finds mostly additive effects between young adults' socioeconomic background and using the social network site, it could be argued that the findings are more consistent with a "poor get richer" perspective than with a "rich get richer" perspective.

A major contribution of this study lies in the conceptualization of social network site usage and social capital. The high reliabilities exhibited by the scales of intensity of Facebook use and intensity of Facebook Groups use confirm the necessity of implementing novel measures for individuals' use of new media technologies. Both scales combined the traditional approach of measuring duration and frequency of exposure to the medium with the more novel approach of gauging individuals' emotional attachment to it. Moreover, this study innovated by measuring exposure to specific types of Facebook Groups. As expected, offline political participation is associated to online political groups and offline civic participation is associated to online civic groups. Thus, this study supports the notion that both a medium's technological capabilities as

well as the actual content it transmits influences people's attitudes and behaviors. On the other

hand, the multifaceted concept of social capital was broken down into three levels, which

allowed for a fine-grained assessment of the potential impact of using social network sites. The

results show a stronger association of Facebook use with the intrapersonal and behavioral

components of social capital than with the interpersonal dimension. Thus, it could be argued that

while the different components of social capital are interrelated, online networks can influence

some components more than others.

Another contribution of this study is related to demographic portrayal of Facebook users.

The popular myth is that this online network is dominated by idle, young, female, upper-middle

class undergraduates. The characteristics of our sample show a more nuanced picture. For

instance, over a third of Facebook members in the 18 to 29 age group were male and a similar

proportion were seniors or graduate students or had parents who did not complete a college

degree. Nearly one out of five members was a minority student. Moreover, almost 95% of

respondents had an account on Facebook and recognized using the online network on a daily

basis. Consequently, the population of college students who uses Facebook in Texas is as diverse

as the population of college students in Texas in general.

What can journalists and media organizations make out of these results? We can make

three general observations. First, and foremost, online social networks are useful structures for

connecting people, allowing them to create content and participate in public affairs in a

meaningful way. Second, SNS are not just a place for "hanging out" but are useful tools for

collective action. Thus, if news organizations are interested in elevating public life, SNS provide

a useful example. On the other hand, news sites wanting to adopt a social network structure (e.g.,

USAToday.com) face several challenges. Perhaps the biggest one is demonstrating in which

ways audience participation can make a difference in public affairs. In other words, media professionals need to consider if news sites with a SNS structure can emulate the benefits that users report they obtain from traditional social networks such as Facebook.

Overall, the findings of the study should ease the concerns of pessimists who fear that social network sites have a negative effect on youth engagement and social capital. Nevertheless, the positive and significant associations between the Facebook variables and the dependent variables were small, suggesting that online networks are not a panacea for democracy. Overall, the findings of the study should ease the concerns of pessimists who fear that social network sites have a negative effect on youth engagement and social capital. Nevertheless, the positive and significant associations between the Facebook variables and the dependent variables were small, suggesting that online networks are not a panacea for democracy. Looking into the future, we must recognize that SNS are rapidly evolving. As SNS and other Web 2.0 technologies diffuse further throughout the society, their impacts on social capital may be different from the picture reflected in our data.

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