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Abstract

Empirical studies of citizen communication networks and participation go as far back as the 1940s, with a bolder focus in political—not civic—activities. A consistent finding reveals that individuals with larger networks are more engaged than those with smaller networks. This article expands this line of work with a number of novel tests. First, it compares the predictive power of online versus offline network size on civic engagement. It then explores the role of strong-tie versus weak-tie discussion frequency and participatory behaviors. Finally, it examines the extent to which the contribution of network size, both online and offline, on civic engagement is mediated by discussion with weak ties. Using original survey data from a large national sample of U.S. adults, results indicate that (1) the relationships between online and offline network size and civic engagement are positive and fairly similar in strength, (2) weak-tie discussion is the strongest predictor of civic behaviors, (3) weak-tie discussion largely mediates the association between participation and network size online and offline, and (4) online networks entail greater exposure to weak ties than offline networks.

Keywords

civic engagement, social networks, weak ties, strong ties, interpersonal communication, computer-mediated communication

When Putnam's (1996, 2000) work documenting a decline in Americans' civic commitment became popular in the late 1990s, scores of scholars turned their attention to the causes and effects of such a trend. The field of communications was not immune. Following the "mean

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“world” hypothesis of Gerbner, Gross, Morgan, and Signorielli (1994), researchers initially highlighted that media consumption—particularly television and Internet use—was a strong, negative predictor of civic engagement (Kraut et al., 1998; Putnam, 1996). Not surprisingly, these findings were challenged on a number of fronts, particularly by proponents of a psychological perspective of media effects. For these researchers, it is not the time spent with media that matters; rather, it is how people use media that affects civic engagement (Gil de Zúñiga & Rojas, 2010; Shah, Kwak, & Holbert, 2001). Thus informational uses of the Internet, such as reading online news, can promote civic participation, while recreational uses, such as online gaming, can discourage it.

The debate between media optimists and media pessimists is far from being over but it offers a clear example of how the literature on media and public life is vast and still growing. The same cannot be said of the literature on the effects on civic engagement of another key communication channel: citizens’ discussion networks, that is, the networks of social relations that individuals have within which informal, unstructured discussions about public affairs take place (Kim, Wyatt, & Katz, 1999; Lake & Huckfeldt, 1998; Weatherford, 1982). While the empirical study of interpersonal communication and participation goes as far back as the 1940s (Katz & Lazarsfeld, 1955; Lazarsfeld, Berelson, & Gaudet, 1948), the predominant focus has been on citizens’ political—not civic—activities. Perhaps only in the last decade, with the development of new information technologies, have researchers devoted time and effort to study the relationship between citizen communication networks and engagement in civic affairs (Kavanaugh, Reese, Carroll, & Rosson, 2005; McLeod et al., 1999; Shah, Cho, Eveland, & Kwak, 2005). A consistent finding of this literature is that individuals who have larger social networks are more civically engaged than those with smaller networks (Putnam, 2000; Son & Lin, 2008). As discussed later in the study, several explanations for this phenomenon have been suggested, most notably Granovetter’s (1973) idea of weak ties, that larger networks allow people to access people, information, and resources not available in their immediate circle of contacts that facilitate involvement in civic affairs (also Coleman, 1988). However, the empirical test of this link, especially its application to discussion networks and civic engagement, has not been adequately addressed.

The purpose of the current study is to fill in these gaps by testing whether larger citizen discussion networks, both online and offline, matter for civic participation by increasing access to weak ties. More specifically, we test if weak-tie discussion frequency mediates the relationship between both online and offline network size and civic engagement, controlling for a set of confounding variables (i.e., demographics, social orientations, media use, and other network attributes). In addition, the study examines which network context—the interpersonal, face-to-face context or the online, computer-mediated context—is more predictive of civic engagement as well as which type of network is more conducive toward weak-tie discussions. As we will argue, online discussion networks may be more strongly correlated with civic behaviors because online communications tend to be more purposive and goal-oriented than interpersonal communications (Berger, 2009, p. 270). Thus people who are favorably predisposed to participate in civic activities may extract more informational utility from text-based, computer-mediated communications than oral-based, face-to-face

communications. To examine these propositions, the study analyzes original survey data from a large national sample of U.S. adults conducted in 2009.

Literature Review

Despite the vast scholarship on the subject, there is no agreed-upon definition of civic participation. Borrowing from the approach of Verba, Schlozman, and Brady (1995), we equate civic engagement with *voluntary civic activity*. By *civic*, we mean activity aimed at addressing social and/or community issues that are not political by nature but, nevertheless, are conducive to the collective well-being. By *voluntary*, we refer to activity that is not mandatory and is not financially compensated. Last, the emphasis on *activity* seeks to stress individuals' behaviors, rather than their procivic attitudes or cognitions. In fact, this article treats these latter constructs as antecedents, not constituents, of civic engagement. By this definition, then, civic engagement involves a variety of different activities, such as volunteering for nonpolitical groups, raising money for charities, attending neighborhood meetings, and supporting the social responsibility of a corporation by buying its product or services.

After conceptualizing the key criterion variable, we now turn to summarize what the academic literature has found in relation to civic engagement. Generally, research stems from four major antecedents that explain citizens' civic behaviors: demographics, social orientations, news media use, and social networks of discussion. Each of these blocks may explain part of the puzzle of civic participation. The purpose of this study is to elaborate on the unique contribution of the last block, related to citizens' communication networks, above and beyond the effects of demographics, social orientations, and news media use.

Demographics and Civic Engagement

Education, income, gender, and personality are four demographic characteristics that have been shown to be strongly associated with participation. In general, more educated and wealthy citizens are more inclined to engage in civic activities than their less educated and less well-off counterparts (Verba et al., 1995; Zukin, Keeter, Andolina, Jenkins, & Delli Carpini, 2006). As some of these authors have pointed out, there are a variety of reasons for expecting this pattern of relationships. People need time, money, and communicational and organizational abilities to engage in civic activities, factors that are easier to attain with higher income and education. Education also may lead to an increase in knowledge about public issues, which in turn lowers the barriers for engagement, both political and civic (Delli Carpini & Keeter, 1996). Schooling also teaches norms of civic duty and can train individuals into civic engagement, especially when community work is a requirement for graduation (Campbell, 2006; Klofstad, 2007). It has also been posited that education serves as a mechanism for social sorting, so that more education translates into higher status. Because individuals with higher status are more likely to engage, education and participation are strongly correlated (Nie, Junn, & Stehlík-Berry, 1996). Finally, individuals with higher income and education are more likely to be recruited for participation (Bachmann, Kaufhold, Lewis, & Gil de Zúñiga, 2010).

Regarding how gender explains civic action, a consistent finding in the literature illustrates that men tend to be more active in political affairs, while women are equally or more active in community activities and grassroots movements (Burns, Schlozman, & Verba, 2001; Enns, Malinick, & Matthews, 2008). It is not yet clear why this is so, but several hypotheses have been proposed, including differences in socialization, educational attainment, and access to the labor market.

A key personality trait that has been previously identified to predict citizens' involvement in civic matters is extraversion. People who are more concerned with, and seek gratifications from, what is external to them have less psychological and social barriers against collective forms of behavior (Kavanaugh, Carroll, et al., 2005; Keller & Berry, 2003). Therefore, more extraverted individuals should also report higher levels of civic participation.

Social Orientations and Civic Engagement

Individuals' attitudes can exert a strong effect on their willingness to join and participate in civic activities. For instance, life satisfaction (i.e., higher reports of personal well-being) has been linked positively to participation in collective activities and civic volunteerism (Harlow & Cantor, 1996; Helliwell & Putnam, 2004). Thus authors argue that when people feel contentment, they find a motive to help others and volunteer. At the same time, successful experiences of civic engagement can lead to higher levels of life satisfaction (Gilbert, Fiske, & Lindzey, 1998).

Another important social orientation is the notion of trust. Some research has shown that a general trustful predisposition is positively correlated with participation (Kaufhold, Valenzuela, & Gil de Zúñiga, 2010), while distrust and cynicism result in withdrawal from community affairs (Norris, 2000). For Putnam (2000), trust is a key ingredient of civic volunteerism because it lowers the barriers to participate by making people feel more secure with others and their surroundings. However, other research shows that there is no spillover effect from trust on engagement, particularly when it comes to political forms of participation (Citrin, 1974; Miller, 1974a, 1974b). While some type of relationship between trust and engagement can be expected, the sign and direction of this relationship cannot be anticipated.

A third psychological input on participation refers to people's ideological identity (Gil de Zúñiga, Veenstra, Vraga, & Shah, 2010). Social conservatives and liberals feel more passionate about participating in civic (and political) activities than moderates. This is particularly true for postmaterialist issues, such as protecting the local environment (Holbert, 2005). However, it may well be that the nonpolitical nature of civic activities makes the effect of ideological extremity on participation moot. If that is the case, then moderates may be more likely to engage in civic activities than more partisan individuals. In either case, individuals' placement in the ideological continuum may predict their civic activism.

Organizational membership has also been found to be strongly related to civic engagement, both as a source of participation and as a consequence of taking part in civic activities (Putnam, 1996, 2000). Churches, neighborhood associations, and other nonpolitical groups can provide an institutional context supportive of civic action. More important, these

organizations often educate citizens about the importance of engagement and provide members with communication and organizational skills necessary to participate in community affairs (Verba et al., 1995). Unfortunately, the survey used in this study did not include measures of voluntary membership in groups and thus this important driver of civic engagement will not be further examined.

Media Use and Civic Engagement

Since Putnam's (1996) indictment of television as the "culprit" of the decreasing levels of volunteerism in the United States, a flurry of research has been conducted testing the media use–participation link (Newton, 1999; Uslaner, 1998). Those following Putnam's pessimistic views about the effects of television relied on cultivation theory (Gerbner et al., 1994) and the "time displacement hypothesis"—that more time spent using media means less time spent socializing and resolving community problems. The exception was newspaper reading, which to date is seen as having a positive effect on people's engagement (Newton, 1999; Norris, 2000; Gil de Zúñiga, 2007).

However, with the development of the Internet, fragmentation of the television audience, and theoretical advancements in communication and media psychology, social scientists have reached a more balanced conclusion on the effects of media use on civic engagement. The new consensus is that patterns of media use related to information acquisition (e.g., television news) and community building (e.g., online communities for volunteerism) are positively associated with civic participation, whereas patterns of use related to entertainment and diversion (e.g., reality shows and online movies) have a negative impact on engagement (Shah et al., 2001; Wellman, Haase, Witte, & Hampton, 2001). Informational media can promote civic-oriented behaviors by triggering reasoning and political discussion, which subsequently promote individuals' participation in public affairs (Eveland, 2001; McLeod et al., 2001). In other words, it is not the media per se that can affect individuals' participation, but the specific ways in which individuals use the media.¹

Citizen Communication Networks

Current research on citizens' participatory behavior has moved beyond demographic variables, social orientations, and media use and focused on various aspects of citizens' informal discussion networks, both online and offline (for an overview, see Delli Carpini, Cook, & Jacobs, 2004). Interpersonal discussion about public affairs has long been thought to have a positive impact on a participatory democracy, an expectation that has been confirmed empirically by scores of studies (Eveland, 2004; Katz & Lazarsfeld, 1955; Kim et al., 1999; Lake & Huckfeldt, 1998; McLeod et al., 1999; Mutz, 2006; Rojas, 2008; Shah et al., 2005; Weatherford, 1982). Informal communication can allow citizens to exchange information, elaborate on problems facing the community, and learn about opportunities to participate in civic activities (Gastil & Dillard, 1999; Gil de Zúñiga, 2009; Klofstad, 2007; McLeod et al., 1999; Rojas et al., 2005).

At the same time, it may well be that engagement in civic activities also enhance citizen communication networks, especially if participation in such activities allows individuals to meet and get to know others with whom they have a common interest. Although plausible, empirical work by Shah and his colleagues (2005) using panel data, which is better suited to address the causal ordering of variables, indicates otherwise: it is more often the case that communication networks lead to civic engagement than the other way around. These results are consistent with earlier research showing that information shared among citizens is a key driver of engagement (McLeod et al., 1999; Verba et al., 1995). Therefore, this study adopts this causal ordering by studying the role of discussion networks as an antecedent of civic engagement.

With the development of the Internet, researchers have found that online networks and services, such as blogs and social network sites, can also provide new ways of promoting both civic and political participation (Gil de Zúñiga, Puig-I-Abril, & Rojas, 2009; Kavanaugh & Patterson, 2002; Matei & Ball-Rokeach, 2002; Valenzuela, Park, & Kee, 2009; Gil de Zúñiga, & Valenzuela, 2010). Beyond the mode of the network (i.e., interpersonal or computer-mediated), there are several other attributes that characterize citizen communication networks, such as network size, network diversity, and strength of network ties (Scott, 1991). Scholars have devoted efforts to relate these different attributes to different modes of participation, calling for more systematic investigations geared to test the relationship among the different attributes of discussion networks, and participatory behaviors (Eveland & Hively, 2009; Shah et al., 2001). In this study, we focus on two aspects: the size of the network and the strength of the ties among network members. Because this study is based on a national sample of respondents, not on a specific community, we analyze both network attributes from an ego-centered perspective (Wellman, 1982). Thus, *network size* refers to the number of people with whom an individual has communicated recently to talk about public affairs—distinguishing between interpersonal and computer-mediated channels—and *tie strength* refers to the frequency of communication between an individual and people with whom he or she has varying degrees of intimacy (e.g., family members vs. unfamiliar persons).

Although other network characteristics may matter for participation, such as the degree of agreement and disagreement of opinions between network members, size and tie strength are central to civic engagement (McLeod et al., 1999). The rationale behind is that larger, diversified networks tend to bring more mobilizing information for participants, such as details on an upcoming neighborhood meeting or an online protest against a multinational company that violates labor rights. Existing research demonstrates that this applies to both interpersonal and computer-mediated communication networks. For instance, Rojas (2008) found that network size was a strong predictor of active membership in voluntary organizations, including neighborhood and educational organizations. The fact that the decrease in the average size of Americans' core discussion networks from three to two (McPherson, Smith-Lovin, & Brashears, 2006) has coincided with a decline in some traditional civic organizations such as PTAs has also led some scholars to see a causal-effect relationship between network size and civic engagement. Although we acknowledge that correlation is not causation, this relationship indicates that when individuals have a larger network of

contacts with whom to communicate about community and public affairs, they should be more inclined to engage in civic activities.

Similarly, Lake and Huckfeldt (1998) have suggested that individuals with larger networks participate more because they are more likely to be exposed to people who have higher levels of education. These educated individuals in turn provide knowledge and expertise that enables citizens to become engaged in ways that they might otherwise not. Beyond the individual characteristics of network members, having more contacts can also increase individuals' frequency of discussion about public affairs, which has been shown to have a direct effect on civic engagement (Shah et al., 2005). Even if people's networks do not expose them to knowledgeable individuals and are not characterized by frequent discussion of public affairs, sheer network size should still increase the likelihood of receiving nonredundant opportunities for and recruitment into participation (Huckfeldt, Beck, Dalton, & Levine, 1995).

The question, of course, is which type of network matters more, interpersonal or online? This is not a trivial issue. By eliminating time and space constraints, the Internet can dramatically reduce the costs of maintaining a larger social network. Several studies have found that online communications increase the amount and intensity of interactions within local community members (Kavanaugh, Carroll et al., 2005; Wellman et al., 2001). Findings in this area suggest that Internet use can strengthen existing interpersonal ties and, at the same time, create new networks that continue offline. On the other hand, the Internet has also been found to promote nonlocal (or nongeographically bound) citizen networks, such as online communities centered on common interests that perpetuate through discussions and exchanges of information (Bennett, 2008; Smith, Schlozman, Verba, & Brady, 2009).

The reasons for joining online groups and becoming a member of an Internet network are manifold. Researchers have found that some individuals rely on online networks to overcome barriers to the formation of interpersonal networks (Bargh & McKenna, 2004). For these individuals, computer-mediated networks provide support and information that they do not find in the offline world. Other individuals find that online services such as Facebook and MySpace provide an efficient way of maintaining and solidifying existing offline relationships (Ellison, Steinfield, & Lampe, 2007; Valenzuela et al., 2009).

While online and offline social networks usually complement each other, they can have different effects on civic participation. For instance, scholars have long noted that uncivil behavior is more widespread in online discussions, particularly when discussants are anonymous (Hill & Hughes, 1998). This may mean that online discussion networks could deter participation. On the other hand, the textual nature of most online services results in communications that are deprived of the nonverbal cues typical of face-to-face interactions. As such, communications in online networks may be more goal-oriented than in offline networks (Berger, 2009, p. 270). If this is the case, then computer-mediated citizen networks may be more efficient at mobilizing individuals to participate.

Against these two extreme possibilities, existing research shows a more nuanced picture on the link between online discussions and civic engagement. While messaging over the Internet has been found to be positively related to civic participation, its contribution is similar in importance to that afforded by interpersonal discussions (Shah et al., 2005). In other

words, despite the uniqueness of interpersonal and computer-mediated communication, there is strong evidence that both offline and online discussion networks promote civic participation in similar, though separate, ways. Thus we hypothesize as follows:

Hypothesis 1 (H1): Larger interpersonal discussion networks will be positively related with civic participation.

Hypothesis 2 (H2): Larger computer-mediated discussion networks will be positively related with civic participation.

Although previous research has examined thoroughly the relationship between network size and engagement, particularly political forms of participation, we present these hypotheses as necessary benchmark relationships for consideration of the mediating mechanism considered in subsequent hypotheses. In the absence of the effects of network size, any consideration of a mediating relationship obviously is moot.

Strong Ties and Weak Ties

Discussions can take place among individuals who are related to one another in varying degrees of closeness and intimacy. Discussion networks of friends and family members are usually characterized by “intimacy, trust, respect, access, and mutual regard” (Kenny, 1994, p. 718). In discussions with visitors, friends of a friend, and strangers, on the other hand, there is no shared intimacy. Labeled as primary or strong-tie networks and secondary or weak-tie networks, respectively, the two types of discussion networks have been found to have different effects on civic participation. This is because they vary in terms of the frequency and content of the conversations that take place within them (Schmitt-Beck, 2004).

Granovetter (1973) argued that weak ties provide information and resources that individuals do not find in their immediate environment of relatives and close friends. In the civic realm, the strength of weak ties lies in the provision of nonredundant, diverse information that stimulates learning and offers new opportunities for mobilization (Lake & Huckfeldt, 1998; Wellman, 1997). In addition to having access to more information, individuals who have more frequent contact with weak ties have more probabilities of being recruited to participate. This is particularly true when weak ties refer to people beyond one’s inner circle of friends and family that are also different in terms of race, ethnicity, class, religion, sexual orientation, or other demographic marker. Because opportunities for participation are usually structured around groups defined by these markers (Kotler-Berkowitz, 2005), individuals with more diverse networks have a higher likelihood of being recruited by civic organizations and community leaders.

The validity of these propositions has been demonstrated by studies that show a positive relationship between number of weak ties and civic and community engagement (e.g., Kavanaugh, Carroll, et al., 2005; Son & Lin, 2008). This does not mean that strong-tie discussions are not significant sources of engagement, too; what we argue is that weak-tie networks may have a stronger relationship with civic action because they are better suited to produce the informational resources needed by individuals to successfully engage

in community and nonpolitical affairs. For this reason, we expect that weak-tie networks will be more consequential for participation than strong-tie discussion networks. In hypothesis form:

Hypothesis 3 (H3): Weak-tie discussion networks will be positively related with civic participation.

Weak Ties Mediate Network-Size Effects

Implied in the argument of the prosocial role of larger citizen communication networks is the benefit of having access to diverse groups of people and novel, nonredundant information (i.e., weak ties). Hence people with larger social networks should have more probabilities of accessing weak ties than people with smaller social networks. Applying a similar rationale, Rojas (2008) noted that “as the size of a discussion network increases, so must the number of weak ties in it. Ultimately, then, weak ties in a network (...) ensure the flow of information across networks” (p. 455).

The empirical evidence available generally supports the notion that weak ties could account for the positive association between network size and civic engagement. Son and Lin (2008) found that weak-tie networks were more effective than strong-tie networks for civic activities. If this is the case, then weak ties should mediate the effects of network size on civic participation. In other words, larger networks foster civic participation so long as they provide access to weak ties. But what type of network context is more predictive of weak ties, interpersonal or computer-mediated? Considering that the Internet is not geographically bounded and that the anonymity of some online services affords contacts with strangers, we would argue that the online context should be more strongly associated with weak-tie communication than the offline context. Thus we posit two additional hypotheses as follows:

Hypothesis 4 (H4): Weak ties will mediate the relationship between interpersonal/computer-mediated networks and civic participation.

Hypothesis 5 (H5): The relationship between computer-mediated networks and weak ties will be stronger than the relationship between interpersonal networks and weak ties.

Method

Data

This article relies on an original survey data collected in the United States between December 15, 2008, and January 5, 2009 by the Community Journalism & Mass Communication Research (CJCR), a research unit hosted by the School of Journalism at University of Texas at Austin.² The sample was based on an online panel provided by the Media Research Lab at the University of Texas at Austin. To overcome the limitations of web surveys and

assure an accurate representation of the national adult population, the Media Research Lab based this particular sample on two U.S. Census variables, gender and age. The procedure of matching online samples with census data to provide a more accurate representation of the population has been validated by previous research (Correa, Willard Hinsley, & Gil de Zúñiga, 2010; Iyengar & Hahn, 2009). The survey instrument was administered using Qualtrics, a web survey software, and was pilot tested before actual fieldwork.

After matching a 10,000 random draw to these demographic characteristics, a total of 1,432 e-mail addresses were invalid. Of the remaining 8,568 participants, 1,159 responded on all items and 323 had missing values for some of the variables of interest in the analysis. Accordingly, based on the American Association of Public Opinion Research's (AAPOR) RR3 calculation, the response rate was 22.8% (AAPOR, 2008, pp. 34-35).³ This relatively low response rate falls within the acceptable range for panel web-based surveys (Göritz, Reinhold, & Batinic, 2002; Sax, Gilmartin, & Bryant, 2003). Compared to U.S. Census data, our sample had more females and was slightly better educated. Nevertheless, the demographic breakdown of our sample was similar to that of surveys conducted by the Pew Research Center and other organizations that employ random digit dialing (Pew Internet & American Life Project, 2009), which seems to lend support to how well our sample statistics estimate U.S. population parameters (for full details see appendix below).

Key Variables

Civic participation. On a 10-point, Likert-type scale (1 = *never*, 10 = *all the time*), respondents were asked how often they had engaged in the following activities in the past 12 months: (1) worked or volunteered for nonpolitical groups, (2) raised money for charity or participated in a charity cause, (3) attended a meeting to discuss neighborhood problems, (4) bought a certain product or service because they liked the social values of the company, and (5) banned a certain product or service because they disagreed with the social values of the company. Responses to each statement were added into a single index (Cronbach's $\alpha = .81$, $M = 18.7$, $SD = 11.7$), with higher scores indicating higher degree of civic engagement. The items used to create this index resulted from a combination of previous research and empirical testing. That is, the items were borrowed from previous research on civic engagement (Shah et al., 2005; Zukin et al., 2006) and subjected to a reliability test so as to retain those that yielded an index with the highest internal consistency.

Weak-tie discussion. Respondents were asked how frequently in the last month they had talked about public affairs to coworkers and acquaintances using a scale ranging from 1 (*never*) to 10 (*all the time*; $M = 4.0$, $SD = 3.1$).

Strong-tie discussion. Using the same 10-point, Likert-type scale used for weak-tie discussion frequency, respondents reported how often they had talked to in the last month about public affairs with family and friends ($M = 5.73$, $SD = 2.8$).

Offline network size. Survey respondents were asked in open-ended fashion to provide an estimate of the number of people they talked to face-to-face or over the phone about public affairs during the past month. As could be expected, the variable was highly skewed

($M = 10.08$, $Mdn = 5.00$, $SD = 23.39$, skewness = 12.03). To produce a normalized distribution, the natural logarithm was computed ($M = .77$, $Mdn = .78$, $SD = .46$, skewness = .23).⁴

Online network size. Respondents were asked to provide an estimate of the number of people during the past month with whom they talked to via the Internet, including e-mail, chat rooms, and social networking sites about public affairs. The variable was positively skewed as well ($M = 11.33$, $Mdn = 1.00$, $SD = 63.71$, skewness = 12.62), so it was also transformed using the natural logarithm ($M = .46$, $Mdn = .30$, $SD = .55$, skewness = 1.40).

Control Variables

A variety of additional variables were included in the multivariate analysis to control for potential confounds. As previously explained in the literature review, these are variables that have been found to be related to civic engagement.

Demographics. The respondent's gender (67% females), age ($M = 45.79$, $SD = 11.31$), and race (84% Whites) were straightforward control variables. Education was operationalized as the highest level of formal education completed ($Mdn = 2$ -year college degree). For income, each respondent chose one of 15 categories of total annual household income ($Mdn = \text{US\$}50,000$ to $\text{US\$}59,999$).

Strength of partisanship. Respondents were asked to rate their party identification using an 11-point scale ranging from *strong Republican* (8.7% of respondents) to *strong Democrat* (13.2% of respondents). This item was folded into a 6-point scale, ranging from *weak partisanship* to *strong partisanship* ($M = 3.31$, $SD = 1.79$).

Life satisfaction. Level of personal contentment was measured by an additive scale of three items extracted from the Satisfaction with Life Scale developed by Diener, Emmons, Larson, and Griffin (1985). This scale has shown high levels of internal consistency and reliability (Pavot, Diener, Colvin, & Sandvik, 1991) and has been widely used in psychology. Using a 10-point scale, respondents were asked their level of agreement ranging from 1 (*strongly disagree*) to 10 (*strongly agree*) with each of the following statements: "In most ways my life is close to my ideal," "Things in my life are difficult," and "I'm satisfied with my life" (Cronbach's $\alpha = .83$, $M = 16.85$, $SD = 7.01$).

Extraversion. Respondents rated the extent to which they aligned to different personality characteristics using a scale ranging from 1 (*strongly disagree*) to 10 (*strongly agree*) for each of the following pairs: "extraverted-enthusiastic" and "reserved-quiet" (reverse coded; interitem $r = .47$, $M = 13.71$, $SD = 4.15$).

Institutional trust. Respondents' were asked separate items on how much they trusted Congress, the judicial system, and political parties using a scale ranging from 1 (*never*) to 10 (*all the time*). The three items were added into an index of institutional trust (Cronbach's $\alpha = .86$, $M = 10.8$, $SD = 6.1$).

News exposure. Respondents were asked to rate on a 7-point scale how often they used the following media to get information about current events and public issues: network TV news, cable TV news, local TV news, radio news, print newspapers, online newspapers,

print news magazines, and online news magazines. The items were reverse coded, so that a higher number indicated more news consumption and combined into an additive index ($\alpha = .68$, range = 1 to 49, $M = 23.35$, $SD = 8.78$).

Statistical Analysis

In order to test the proposed hypotheses and examine the mediating role of the strength of discussion ties on civic involvement, we employed hierarchical regression analysis and confirmatory structural equation modeling (SEM). In the regressions, the variables were entered causally in separate blocks: demographics, social orientations, news exposure, and citizen communication networks. In the SEM test, all the variables previously used as controls were residualized to avoid any potential confounding result. All the analyses were conducted using SPSS 16.0 and MPlus 3.0.

Results

H1 and H2 hypothesized that larger interpersonal and computer-mediated discussion networks would be positively related to civic engagement. Both hypotheses were supported. As shown in Table 1, the model accounts for 27.5% of the variance of civic engagement. People denoting a larger sphere of discussants reported higher levels of civic action. Thus those with larger interpersonal networks were more inclined to participate civically ($\beta = .180$, $p < .001$), as did those citizens reporting larger computer-mediated conversational networks ($\beta = .189$, $p < .001$). These two network variables accounted for 8.4% of additional variance of civic participation.

Several of the control variables were found to be predictive of civic engagement, which bolsters the robustness of the regression model. Being a woman, having more years of formal education, exhibiting higher degrees of extraversion, being financially privileged, having more exposure to news, and expressing greater trust in institutions appeared to exert a positive effect on civic engagement, in line with earlier research. On the other hand, age, level of life satisfaction, and strength of political partisanship made no statistical contribution with partaking in civic affairs. Taken together, these findings suggest that online and offline communications complement each other and can jointly motivate people to mobilize civically.

The next hypothesis, H3, tested to what extent weak-tie discussion frequency increases the likelihood of civic participation. This hypothesis was also supported, with the regression model explaining a total variance of 30.0% of civic engagement (see Table 2). Network tie strength indicators accounted for an additional 2.5% of variance. As in the previous model, the same control variables—age, education, income, trust in political institutions, and news media consumption—were positively linked to civic commitment. Among all the discussion network attributes (i.e., network size and tie strength), weak-tie discussion emerged as the strongest predictor of civic involvement ($\beta = .163$, $p < .001$). In contrast, partaking in discussions with strong ties made a modest contribution ($\beta = .072$, $p < .05$). In addition, the size of the network people talk to online and offline continued to be

Table I. Online and Offline Discussion Network Size Predicting Civic Engagement

	Civic engagement
Block 1: Demographics	
Age	-0.025
Gender (female)	0.056*
Education	0.071*
Income	0.033*
Race (White)	0.012
ΔR^2 (%)	5.3***
Block 2: Social orientations	
Strength of partisanship	0.001
Trust political institutions	0.158***
Life satisfaction	0.005
Extroversion	0.068*
ΔR^2 (%)	7.7***
Block 3: Media consumption	
News exposure	0.172***
ΔR^2 (%)	6.1***
Block 4: Discussion network size	
Offline network size	0.180***
Online network size	0.189***
ΔR^2 (%)	8.4***
Total R^2 (%)	27.5***

Note: Sample size = 1,159. Cell entries are final-entry OLS standardized coefficients.

* $p < .05$. ** $p < .01$. *** $p < .001$.

statistically significant. However, the standardized betas of the discussion network size block confirmed that the relationship was not as vigorous as before ($\beta = .096, p < .01$ and $145, p < .001$ respectively; vs. $\beta = .180, p < .001$ and $189, p < .001$ in the model without other discussion attributes; see Table 2).

These results suggest that the strength of the ties between discussants may mediate the relationship between the size of individuals' networks—online and offline—and the degree to which they will involve in civic activities. This is a hint for our fourth hypothesis, which predicts that weak-tie discussion networks mediate the explanatory effect of network size on civic engagement. To formally test for this possibility, we ran a SEM model that residualized the effects of all the control variables (i.e., demographics, social orientations, and news exposure) on the endogenous and exogenous variables and tested whether a mediation mechanism existed. The overall fit of the SEM model to the data was more than acceptable ($\chi^2 = 1.92$ with $p = .17$ and $df = 1$, RMSEA = .003, SRMR = .009, CFI = .999, TLI = .992). The model predicts 25.1% of the variance in citizens' conversations with strong ties, 26.7% of the variance of weak ties, and 16.5% of the variance of civic participation. As Figure 1

Table 2. Discussion Frequency with Strong and Weak Ties Predicting Civic Engagement
Controlling for Online and Offline Discussion Network Size

	Civic Engagement
Block 1: Demographics	
Age	-0.017
Gender (female)	0.049*
Education	0.071**
Income	0.047*
Race (White)	0.016
ΔR^2 (%)	5.3***
Block 2: Social orientations	
Strength of partisanship	0.002
Trust political institutions	0.146***
Life satisfaction	0.011
Extroversion	0.060*
ΔR^2 (%)	7.7***
Block 3: Media consumption	
News exposure	0.135***
ΔR^2 (%)	6.1***
Block 4: Discussion network size	
Offline network size	0.096**
Online network size	0.145***
ΔR^2 (%)	8.4***
Block 5: Discussion frequency	
Strong ties	0.072*
Weak ties	0.163***
ΔR^2 (%)	2.5***
Total R^2 (%)	30***

Note: Sample size = 1,159. Cell entries are final-entry OLS standardized coefficients.

* $p < .05$. ** $p < .01$. *** $p < .001$.

suggests, both offline network size ($\beta = .136, p < .01$) and online network size ($\beta = .086, p < .05$) have a positive direct effect when explaining civic participation. However, the indirect effect of online and offline network size to civic engagement through weak-ties conversations is more prominent. That is, conversing with weak ties is the strongest predictor of civic engagement ($\beta = .213, p < .001$); in turn, talking to others face-to-face ($\beta = .243, p < .001$) or in a computer-mediated setting ($\beta = .354, p < .001$) will lead to greater connections to weak ties. Therefore, there was evidence that mediation was indeed taking place, strongly supporting H4 (see Table 3 for complete direct and indirect effects).

Our fifth hypothesis, H5, claimed that the relationship between the size of computer-mediated networks and weak ties is stronger than the relationship between the size of interpersonal networks and weak ties. This hypothesis allows us to discern which mode of

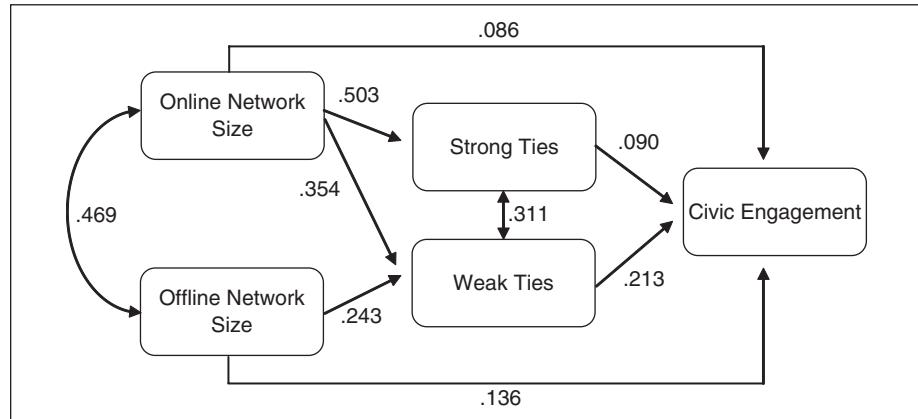


Figure 1. SEM testing how discussion frequency with strong and weak ties mediates the predicting power of online and offline discussion network size on civic engagement

Note: Sample size = 1,159. Path entries are standardized beta coefficients at $p < .05$ or better. The effects of demographic variables (age, gender, education, income, and race), social orientations (strength of partisanship, trust in political institutions, life satisfaction, and extroversion), and media consumption on endogenous and exogenous variables have been residualized. Goodness of fit: $\chi^2 = 1.92$ with $p = .17$ and $df = 1$, RMSEA = .003, SRMR = .009, CFI = .999, TLI = .992. The model predicts the following variance for strong ties ($R^2 = 25.1\%$), weak ties ($R^2 = 26.7\%$) and civic engagement ($R^2 = 16.5\%$).

Table 3. Direct and Indirect Effects of Structural Equation Model Analyses

				B
Online network size	→	Civic engagement		.121***
Offline network size	→	Civic engagement		.052**
Online network size	→	Weak ties	→	.076**
Online network size	→	Strong ties	→	.045*
Offline network size	→	Weak ties	→	.051**

conversational setting, online or offline, better facilitates weak-tie discussion. As shown in Table 4, both larger interpersonal ($\beta = .206, p < .001$) and computer-mediated networks ($\beta = .368, p < .001$) predicted having more frequent discussions with weak ties. Furthermore, additional analyses showed that the difference between the coefficients measuring the strength of the associations was statistically significant (score difference higher than $z > 2.56$;

Table 4. Online and Offline Discussion Network Size Predicting Discussion Frequency with Strong and Weak Ties

	Discussion frequency	
	Weak ties	Strong ties
Block 1: Demographics		
Age	-0.053*	0.009
Gender (female)	0.014	0.057*
Education	-0.013	0.019
Income	-0.074**	-0.034
Race (White)	-0.023	-0.002
ΔR^2 (%)	1.7**	2.9***
Block 2: Social orientations		
Strength of partisanship	-0.010	0.038
Trust political institutions	0.068**	0.006
Life satisfaction	-0.033	-0.003
Extroversion	0.051*	-0.009
ΔR^2 (%)	5.0***	2.4***
Block 3: Media consumption		
News exposure	0.144***	0.178***
ΔR^2 (%)	7.1***	7.5***
Block 4: Discussion network size		
Offline network size	0.206***	0.020
Online network size	0.368***	0.464***
ΔR^2 (%)	22.7***	21.5***
Total R^2 (%)	37.3***	18.3***

Note: Sample size = 1,159. Cell entries are final-entry OLS standardized coefficients.

* $p < .05$. ** $p < .01$. *** $p < .001$.

see Table 5). This finding indicates that conversing in a computer-mediated setting has stronger, positive effect when explaining the access to weak ties than engaging in discussions in a more traditional, face-to-face mode. The data supported H5.

Discussion

This article intended to shed light on the ways citizens' discussion networks provide a context for a more civically engaged citizenship. Habermas (2006) speaks of a robust citizenship being founded upon an inclusive civil society that regularly participates in discussions and responds to public discourse. Thus people may generate a "public sphere" through which stronger citizenship involves people working together to craft a healthier society. Previous research on the role of citizen-to-citizen communication patterns, however, has relied on Habermas' ideals as they apply mostly to political behaviors, leaving

Table 5. Comparison of Beta Coefficients of Online and Offline Network Size when Predicting Discussion Frequency with Strong and Weak Ties

	Weak-tie discussion	Strong-tie discussion
Offline network size	.206 ^a	.020 ^b
Online network size	.368 ^a	.464 ^b

Note: Cell entries correspond to the standardized regression coefficients of online and offline network size predicting discussion frequency with strong and weak ties (see Table 4). The comparison of betas marked with superscript "a" denotes that their difference is statistically significant at the $p < .01$ level. The comparison of betas marked with superscript "b" denotes that their difference is statistically significant at the $p < .001$ level. The formulae used to calculate the difference between standardized regression coefficients (betas) is based on the actual beta, their t -value, and their standard error. When z scores are obtained, differences that are $z > 1.96$, $z > 2.56$, and $z > 3.3$ represent a statistically significant difference at $p < .05$, $p < .01$, and $p < .001$, respectively. The Microsoft Excel macro is freely available for academic purposes at the web site of the CjCR located in the School of Journalism at the University of Texas at Austin (<http://cjcr.journalism.utexas.edu/>).

relatively unexplored the role of discussion networks on nonpolitical, civic-oriented activities. In that sense, this article extends the existing literature on social networks and collective life (see also Carroll et al., 2006; Kavanaugh, Carroll et al., 2005; Shah et al., 2001, 2005). Specifically, it addresses four issues: (1) what is the direct relationship between the size of online and offline discussion networks and civic participation; (2) what is the direct relationship between strong- and weak-tie discussion frequency and civic engagement; (3) does weak-tie discussion frequency mediate the effects (if any) of interpersonal and computer-mediated networks; and, if so, (4), which type of network, online or offline, is more conducive to civic engagement via weak-tie discussion frequency.

The article advances the current literature in several ways. First, a certain similarity may be established between existing research in the political communication arena and the civic participation realm. The positive effects that social networks' discussions have on political behaviors can also be extended to civic participation, and citizens who report larger conversational circles—online and offline—tend to engage more in civic life. Second, we show that although the online and offline worlds may be complementing, they are still different. That is, they bear different effects on civic participation. On the one hand, the more an individual talks to others face-to-face, the more likely this person will display civic behaviors. On the other hand, engaging in conversations online has a much stronger relationship with civic involvement. These findings may be due to the fact that online conversations provide a superior context for this outcome to occur. Online conversations often are text-based, purposive, and goal-oriented (Berger, 2009, p. 170). And therefore this mode of conversation could provide a set of useful tools for the proliferation of civic engagement, for all these characteristics produce greater informational utility and mobilizing effects among discussants. Third, this article tested the role that conversing with weak ties—or nonproximal individuals—may have on the creation of civic activity and found that, as Granovetter (1973) correctly predicted, they occupy a central role. We find empirical evidence to the

idea that weak ties provide information and resources that individuals do not find in their immediate environment of relatives and close friends. This nonredundant, diverse information seems to offer new opportunities for civic action. Importantly, results also suggest that computer-mediated communications are better suited to spur access to weak ties and to promote discussions about public affairs with nonproximal individuals. Thus some of the barriers that may prevent people in their offline world to have access and develop weak ties can be superseded by the Internet, which knows no geographical or time barriers.

It is important to keep in mind that in this study we have been very careful to control for multiple concepts that serve as antecedents to civic engagement. In addition to demographics and social orientation—such as extremity of political partisanship, trust, life satisfaction, and people's level of extraversion—we have also included a host of news media measures that have been related in the past to expanded civic action. Yet distinct attributes of citizen communication networks remained as significant predictors of civic engagement. This speaks in a loud voice about the central role played by citizens' social networks in creating a fruitful context for civic-oriented communications.

Nevertheless, there are a number of caveats that invite us to be cautious when interpreting the findings of this article. We acknowledge the nature of the data employed may not be well-suited for testing causal-effects relationships. In a rigorous account, this is a cross-sectional analysis and suggesting directionality can be considered problematic. This means that the relationships between discussion network size, strength of ties, and civic participation reported here could be interpreted otherwise. Therefore, an alternative interpretation would sustain that participation leads to larger discussion networks, increases frequency of discussion with weak ties, and so on. Panel data could shed more light on the causality quandary although seminal work in this area indicates that our causality approach is accurate (Shah et al., 2005).

Another limitation is the use of self-reports, not actual observations, of citizens' discussions and civic activities. Perhaps the use of controlled experiments and qualitative approaches such as participant observations of citizen discussions could help validate our findings. In any case, while direct observation is feasible, it entails losing the representativeness of the sample, which is one of the strengths of this study. This is, of course, a suggestion for further research.

In this article, one of our main focuses relied on identifying weak ties as a mediating mechanism on civic participation. It seems important to observe what other factors mediate the relationship between citizens' discussion networks and the forms in which they participate civically. Similarly, we feel that the operationalization of civic engagement may be advanced. We included "buycotting" as a representative form of civic nature. Others may see it as a prolongation of political attitudes. In fact, this dilemma reflects how some political and civic activities may be blurring. Finally, researchers could also devote more effort at identifying the antecedents of discussion networks. For instance, what predicts having a larger network of contacts online? (See Correa et al., 2010, for an initial effort on this matter).

Another limitation of the study relates to the measurement of weak- and strong-tie discussion. First, the survey items used to operationalize these central concepts cannot tap

the extent to which online and offline networks overlap. Second, some coworkers could very well be strong ties. Last, both strong ties and weak ties have been measured with a single item in this study. Future research could address these shortcomings by employing more specific measures of network ties, such as asking survey respondents separately the frequency with which they discuss online and offline with their close relatives, friends, coworkers and acquaintances. Subsequently, principal component analysis or other technique could uncover the latent structure connecting the different levels of strength of ties across discussant types.

The effects of the cycle of life in spurring civic engagement are also of importance. Individuals' inclination to engage in civic activities can be affected by contextual situations in their life cycle. Generally, age is one of the most common indicators used to account for the effect of cycle of life on civic engagement (e.g., see Shah et al., 2005). However, there are other factors that may also influence this relationship such as marital status or having offspring. This study is somewhat limited as it did not control for the latter variables. However, age was included to control for possible effects of life cycle on civic participation.⁵

Overall, this study provides additional support for the notion that larger networks reinvigorate civic participation, but most important, that the sphere of public debate is being ultimately founded on weak-tie discussions, which usually are more easily accessed through computer-mediated means. Thus this article presents one of the mediating paths to a stronger citizenship.

Appendix I

Demographic Profile of Study Survey and Other Comparable Surveys

	CJCR study survey December 2008-January 2009	Pew Internet & American life project postelection survey November- December 2008	U.S. Census community population survey November 2008
	(%)	(%)	(%)
Age			
18-24	3.5	6.0	12.5
25-34	18.9	9.9	17.8
35-44	21.6	13.5	18.4
45-64	50.5	40.5	34.6
65 or more	5.5	30.2	16.6
Gender			
Male	33.0	47.2	48.3
Female	67.0	52.8	51.7

(continued)

Appendix I (continued)

	CJCR study survey December 2008-January 2009	Pew Internet & American life project postelection survey November- December 2008	U.S. Census community population survey November 2008
	(%)	(%)	(%)
Race/ethnicity			
White	84.4	79.8	68.5
Hispanic	4.5	6.1	13.7
African American	5.0	9.2	11.8
Asian	3.0	1.3	4.6
Education			
High school or less	15.4	38.4	44.6
Some college	28.1	27.7	28.3
College degree	37.2	19.8	18.1
Graduate degree	19.2	14.1	9.0
Household income			
Less than US\$49,999	41.1	51.2	42.0
US\$50,000 to US\$99,999	37.9	31.8	35.3
US\$100,000 or more	21.0	17.1	22.7

Note: CJCR = Community Journalism & Mass Communication Research.

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Notes

1. This explains, in part, why online activities have been found to both reduce and increase social capital. When we spend time on the Internet that we would otherwise use to participate in community affairs, civic participation will diminish. Conversely, if going online displaces activities like commuting or watching crime dramas, the net effect could be positive.
2. The selected panel members received the survey's URL through an e-mail invitation. This invitation provided respondents with a time estimate to complete the survey and information about a draw monetary incentive for their participation. The first invitation was sent December 15, 2008 and three reminders were submitted in the following 3 weeks.

3. The formula for RR3 is (complete interviews)/(complete interviews + eligible nonresponse + ϵ) (unknown eligibility), where ϵ was estimated using the proportional allocation method, i.e., (eligible cases)/(eligible cases + ineligible cases).
4. We also tried recoding the values over a specific threshold into a single category. For four different thresholds (10, 20, 25, and 30), the relationship between the transformed variable and the dependent variables did not change significantly. To avoid the inherent arbitrariness of picking a threshold value, we opted for a logarithmic transformation although we recognize that this may make the numbers of the variable less interpretable.
5. In order to shed some light on the effects of life cycle on civic engagement, respondents were divided in three different groups: (1) young adults—ranging from 18 to 34, (2) adults—35 to 60, and (3) older adults—61 and older—to identify possible differences in terms of civic participation. While young adults and older adults (Groups 1 and 3) were not statistically related to civic engagement ($r = -.011, p = .58$ and $r = -.013, p = .88$, respectively), the group of adults (Group 2) yielded a mild positive and statistically significant relationship ($r = .056, p < .05$). When the whole data set is combined (including respondents of all ages), the relationship dissipates.

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