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Community Storytelling Network, Expressive Digital Media Use, and Civic Engagement

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Abstract

Grounded in Communication Infrastructure Theory (CIT), this study tests the moderating roles of expressive digital media use through the Internet, social, and mobile media between community storytelling network and civic engagement. Based on online survey data of U.S. adults in an ethnically homogenous metropolitan area, this study finds that community storytelling network and expressive digital media use significantly predict the level of civic engagement. In particular, expressive digital media use serves as a necessary condition for community storytelling network to further promote online civic participation and collective efficacy among community residents. This study thus advances CIT with an integrated approach to expressive digital media use by testing the extended theoretical framework in a different local community context. Findings offer practical applications and policy implications regarding communication, citizenship, and civic community.

Keywords

communication infrastructure theory, community storytelling network, expressive digital media use, civic engagement

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A substantial body of scholarship has examined the extent to which communication, including interpersonal discussion and news use through traditional and digital media alike, contributes to civic engagement (e.g., Shah et al., 2001). Extant literature in communication and citizenship demonstrates that communication is essential for democratic decision-making processes and outcomes, thereby promoting a vibrant civic community in the civil society (e.g., McLeod, Scheufele & Moy, 1999). With a growing body of scholarship examining how and why citizens partake in a wide range of civic and political activities in local communities (e.g., Hampton et al.,2011; McLeod, Scheufele & Moy, 1999; Nah & Yamamoto, 2017), relatively few simultaneously consider the roles of interpersonal, mediated, and organizational communication processes at one's local community. Recognizing this gap, this current study takes an ecologically-oriented framework, Communication Infrastructure Theory (CIT), to investigate how various local communication resources, including both traditional and emerging communication platforms, may contribute to the building of civic community.

Scholarship on CIT has long suggested that community storytelling network connected through news media, residents, and community organizations function as vital communication assets in promoting civic outcomes, such as higher levels of neighborhood belonging, collective efficacy, and civic participation (Kim & Ball-Rokeach, 2006a, 2006b). While CIT scholarship provides valuable insights on the democratic functioning of mediated communication through traditional media and interpersonal discussions, the role of emerging digital media, such as social and mobile media as a new ecological storyteller, remains largely unexplored. Thus, this study investigates the roles of digital media as a core community storytelling agent and the conditions under which digital media can work in tandem with traditional storytelling agents to further promote civic engagement. Specially, the study tests how expressive digital media use through the Internet, social media, and mobile phones moderates the relationships between community storytelling network and civic engagement.

Grounded in CIT (e.g., Kim & Ball-Rokeach, 2006a) and building on previous studies (e.g., Kim & Ball-Rokeach, 2006b; Nah & Yamamoto, 2017, 2018), first, the study conceptualizes expressive digital media use as an emerging storytelling agent in an integrated way across communicative space (Internet as an online space), platform (social media), and device (mobile phone). Second, the study tests the moderating roles of expressive digital media use on all civic outcomes in a more comprehensive way while extending traditional storytelling network to include digital storytelling actors. Third, while CIT studies (Abril et al., 2015; Matsaganis et al., 2014; Nah & Yamamoto, 2019; Nah et al., 2016, 2021; Wenzel, 2019) tested the theory in various contexts (e.g., urban and rural communities as well as ethnically diverse communities), the current study further examines the validity and applicability of the theory in a more ethnically homogeneous community.

In a nutshell, testing CIT from data collected in an ethnically unique, urban community context, the study offers theoretical, practical, and policy implications for building a civically informed, efficacious, and engaged community with particular focus on the expressive use of digital media. The following details CIT and its relation

to community storytelling network or integrated connection to storytelling network (ICSN).

Communication Infrastructure Theory: ICSN and Civic Engagement

Communication infrastructure theory (CIT) examines how civic engagement is performed in contemporary urban communities, particularly under the forces of globalization, new communication technologies, and population diversity (Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006b). Characterized by "a neighborhood storytelling network (STN) set in its communication action context (CAC)" (Ball-Rokeach et al., 2001, p. 396), CIT is informed by literature that examines storytelling models of public opinions (Gamson, 1992; Katz & Lazarsfeld, 1955; Livingstone & Lunt, 1994; Wyatt et al., 2000), community integration (Fischer, 1975; Friedland, 2001; Friedland & McLeod, 1999; Stamm & Guest, 1991), rhetorical action (Fisher, 1989) and collective identity (Anderson, 1991).

Central to CIT are the notions of storytelling network (STN) and the communication action context (CAC). By "storytelling," the theory emphasizes the power of discursive practice, and in particular, the active construction of the neighborhoods through discourse (Anderson, 1991; Ball-Rokeach et al., 2001). Communication action context, the other central component of communication infrastructure, refers to the specific living space of neighborhood where the storytelling network is situated, encompassing public spaces, such as parks, libraries, schools, and healthcare facilities.

The neighborhood storytelling network consists of three storytelling agents that span across multiple levels. At the micro-individual level, community residents as constituted in interpersonal networks serve as storytelling agents and engage in storytelling through everyday conversation and neighborly interactions. At the meso-community level, two additional agents include locally based media, particularly "geo-ethnic" media—media targeting specific geographic location and/or specific ethnic groups (Kim et al., 2006; Lin & Song, 2006)—and community organizations that connect and mobilize residents around community issues and the broader realm of civic life. At the macro-community level, mainstream news media function as storytelling agents serving even larger communities especially in urban and metropolitan areas.

As an ecologically oriented framework, CIT scholarship has extended community storytelling network to include newly emerging digital media such as social and mobile media (Choi et al., 2021; Kim et al., 2019; Nah & Yamamoto, 2017). In the rapidly evolving communication environment, CIT does not view interpersonal networks, local media, or community organizations as isolated entities. Rather, the interconnection among these micro-, meso-, and macro-level storytelling agents leads to the concept of Integrated Connection to Storytelling Network (ICSN), which takes into account the *interaction*s among the three community storytellers. Thus, ICSN is operationalized as the composite of three interactional terms based on individuals' connection to interpersonal networks, local media, and community organizations (Kim & Ball-Rokeach,

2006a). As Kim and Ball-Rokeach (2006b) contend, CIT not only focuses on the strength of the connection to a single community storyteller, but the "added value" when the three types of storytellers form a network (p. 415). This argument shares the same intellectual root with the differential gains model (Eveland & Scheufele, 2000), which similarly posits that the utility of local media use would depend on the level of interpersonal talk, and vice versa.

The Civic Outcomes of CIT: Neighborhood Belonging, Collective Efficacy, and Civic Participation

Under the CIT framework, civic engagement is conceived as a multidimensional construct comprising three components of neighborhood belonging, collective efficacy, and civic participation (Ball-Rokeach et al., 2001). First, neighborhood belonging is defined as both subjective and objective attachment to one's neighborhood community indicated by how individuals interact with their neighbors, how they feel about their neighbors, and how they perceive the larger neighborhood community (Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006b). CIT considers individuals' participation in community-based organizations (Galaskiewicz, 1985), their engagement in neighborhood conversations (McLeod, Scheufele & Moy, 1999), and their connections to local media (Jeffres et al., 1988; Stamm & Guest, 1991) as means to cultivating such neighborly feeling and pro-engagement behaviors.

The second component of civic engagement from the CIT framework is collective efficacy defined as "individuals' perception of their neighbors' willingness to participate in neighborhood problem solving" (Kim & Ball-Rokeach, 2006b, p. 416). Individuals' collective efficacy as an important indicator of community-level civic engagement has long been of interest to urban sociologists. According to Sampson (2006, 2012), collective efficacy refers to the shared beliefs in a neighborhood's capability to solve problems. The level of collective efficacy thus indicates the social cohesiveness of a community (Sampson, 2006) as well as the willingness of its residents to partake in actions that advance a community's interest.

Finally, civic participation refers to community residents' individual and collective efforts to resolve community issues and problems (Kim & Ball-Rokeach, 2006a, 2006b). It entails the actual behaviors of individuals in attending city council meetings, contacting elected officials, or participating in boycott and protest—as the third and behavioral dimension of civic engagement.

With citizens' civic action increasingly migrating online, it is important to develop a more nuanced view of civic participation, particularly with regard to its online versus offline dimension. While individuals' online civic activities are inextricably linked to their offline action, research has shown that online and offline participation may be motivated by different antecedents (e.g.,Vissers & Stolle, 2014). For example, online discussion is more strongly associated with one's online civic participation than the offline counterpart (Yamamoto & Nah, 2018). Furthermore, as technology lowers the cost of participation (Bimber, 2001), online civic participation may be more subject to peer influence whereas material resource plays a larger role in motivating offline civic action.

For both dimensions of civic engagement, empirical work on multiple urban communities suggests that residents' connection to neighborhood storytelling network is a significant contributing factor. For example, Kim and Ball-Rokeach (2006b) found that individuals' integrated connectedness to the local storytelling network was significantly associated with residents' civic engagement levels. Using a diverse community sample, Ognyanova et al. (2013) similarly found that residents who had higher levels of neighborhood discussion and were more closely connected to local media and community organizations tended to participate more in community life both online and offline. Even for migrant communities, storytelling network has been found to facilitate the integrative adaptation of migrants, thereby enhancing their engagement in local civic life (Kim & Kim, 2018). Although ample empirical evidence has supported the positive relationships between ICSN and various civic outcomes in ethnically diverse, urban communities (e.g., Kim & Ball-Rokeach, 2006a, 2006b; Liu et al., 2018), we further test the robustness of such relationships in an ethnically homogeneous community context (e.g., a predominantly White urban community). Ethnically homogeneous communities vis-à-vis ethnically diverse counterparts may help advance CIT in an ethnically unique community context with less diverse ethnic media outlets as well as connection to less diverse community residents and organizations. These theoretical rationales lead to the following hypothesis.

H1: The level of integrated connection to storytelling network (ICSN) will be positively related to individuals' offline civic participation (a), online civic participation (b), collective efficacy (c), and neighborhood belonging (d) in an ethnically homogeneous community.

Expressive Digital Media Use and Civic Engagement

While integrated connection to storytelling network (ICSN) plays a significant role in stimulating civic engagement, it does not fully capture the changing media environment or the shifted media use patterns of individuals. New media have transformed the media and communication dynamics of local communities. Hyperlocal journalism websites, for example, have sprung up in many communities around the globe, and these platforms provide a participatory online space for civic information, deliberation, and community engagement (e.g., Liu et al., 2018). Meanwhile, community-oriented social media sites, such as Facebook groups and Next Door, have been found highly instrumental in building communities. Other than providing locally relevant information, Breek et al. (2021) observe that these sites serve to strengthen community ties and motivate civic engagement through effective storytelling and placemaking.

In addition, there is a significant shift in individuals' use of media from just passively consuming information to actively using media to express opinions (e.g., Nah & Yamamoto, 2019). In this regard, we conceptualize expressive digital media use as communicatively integrated, actively engaged use of digital media across the online communication space, platform, and device. Expressive use of digital media includes a range of activities from sharing news information to posting one's thoughts, feelings,

and experience in response to news content (Bode et al., 2014). This type of media use conceptualizes media as the means for citizens to express one's civic identity. In comparison, the informational or consumptive use of media (e.g., Shah et al., 2005) emphasizes the information acquisition function of news media. Gil de Zúñiga et al. (2013) argue that the expressive use of media represents more active and engaging media use behaviors, which may have greater civic potentials compared to using media just for information.

The emergence of Internet and new media platforms has prompted burgeoning research on expressive digital media use and its various civic consequences (e.g., Choi et al., 2021; Gil de Zúñiga et al., 2014; Nah et al., 2006; Shah et al., 2005). Literature in this area can be categorized around the specific medium of interest: Internet, social media, and mobile media. Although certain studies lump these three types under the umbrella of "new media," we distinguish the three, viewing Internet as the communication space, social media as communication platforms, and mobile media as a communication modality. We argue that as existing work focuses on different properties of these media, there are overlapping, yet distinct pathways associated with each medium that catalyze community civic life.

The research on the civic consequences of the Internet is characterized by the long-held dichotomy of online versus offline space, where Internet is conceptualized as the alternative communication space to the offline setting. This line of research thus predominantly focuses on the connection and interaction between individuals' online and offline civic activities (e.g., Pasek et al., 2009). Meanwhile, research on the civic impact of social media use focuses primarily on the platforms' *networking* properties, where interpersonal relationships and peer influence are the central mechanisms associated with greater civic learning and participation (e.g., Kim et al., 2013). The network feature thus particularly distinguishes social media platforms from other types of new media. Finally, mobile media represents a unique mode of new media use. By creating a cross-cutting media ecosystem, individuals may access both Internet and social media platforms through mobile devices. However, the media use experience and the associated civic effects may differ from other modes of media use. For example, mobile device use has been found to be subject to greater socio-demographic divide (Pearce & Rice, 2013), and different ways of using mobile devices—such as using them for information, sociability, and recreation—may lead to different civic outcomes (Campbell & Kwak, 2010).

We thus propose an integrative concept of expressive digital media that differentiates Internet, social media, and mobile devices. Such a distinction is particularly meaningful when the civic outcomes of interests are at the community level. Compared to general forms of civic engagement, local civic engagement is influenced by additional mechanisms such as neighborhood context and community-level communication dynamics (e.g., Shah et al., 2001). Expressive use of the Internet, social media, and mobile devices may galvanize local civic engagement in the following ways.

First, research on the expressive use of Internet has focused on media types such as online news sites and blogs. Using panel survey data, Shah et al. (2005) found that the expressive use of Internet, operationalized as online civic messaging, contributed to

individuals' civic participation. Gil de Zúñiga et al. (2013) tested the civic effects of consumptive versus expressive blog use, finding that expressive blog use was directly related to both online and offline political participation, whereas consumptive blog use was not. At the community level, community-oriented Internet use, such as the use of Internet discussion boards, has been found to promote local community contact and a sense of community (Quan-Haase et al., 2002), which, in turn, translates into greater community engagement during the regular time as well as after natural disasters (Jung et al., 2013).

Second, as social media become another popular venue for expressive communication behaviors, its role in civic participation is consistently documented. In particular, Gil de Zúñiga et al. (2014) found that social media use for the purpose of social interaction, rather than its use for news information, contributed to individuals' political participation via the mediating mechanism promoting political expression. At the community level, Gibbons (2020) found that individuals' use of social media significantly promoted neighborhood community connection, regardless of neighborhood context. The expressive use of social media in promoting post-disaster community action, an important form of community engagement, has received increasing scholarly attention. For example, research has found that community-oriented social media use facilitated the expression of emotions and the exchange of social support after natural disaster, which fosters community cohesion that further promotes engagement (An & Mendiola-Smith, 2020).

Third, mobile devices have become a ubiquitous part of our lives. Notably, data from the Pew Research Center (2019) show that 96% of Americans own a cellphone of some kind. While early mobile use was thought to be communication regarding one's own private affairs within closed networks (e.g., text and calling), its functionalities have expanded especially after the advent of the smartphones (Salehan & Negahban, 2013). Mobile users now can do many things beyond calling and texting: they can send emails, download apps to connect with others (e.g., WhatsApp), among other things. These activities present new opportunities for individuals to express their political views and further engage in civic issues (Nah & Yamamoto, 2017; Pang, 2018; Yamamoto et al., 2015). What makes expressive behavior via mobile easier and more prevalent than other forms of online expression is that mobile media enable continuous communication, which in most cases is not bound by physical or Internet access (Campbell & Kwak, 2011; Ling, 2008). This feature thus enables individuals to express their opinions quickly and at relatively lower cost.

Consistent with the research suggesting that online and/or offline expression is antecedent to civic engagement (e.g., Bode et al., 2014; Nah et al., 2006; Shah et al., 2005), scholars have found that expressive activities via mobile devices can spur further civic engagement (Campbell & Kwak, 2011; Nah & Yamamoto, 2017; Pang, 2018; Rojas & Puig-i-Abril, 2009). For instance, Campbell and Kwak (2011) found that using mobile devices for discussing politics and public affairs increased political participation while controlling for a number of variables commonly associated with political participation. Rojas and Puig-i-Abril (2009) also found that informational mobile phone use is significantly related to online expression, which, in turn,

facilitates civic and political participation indirectly through mobilization efforts. By sharing information and news as well as expressing ideas about community and public affairs, mobile expression serves as a necessary condition for community storytelling network to further enhance the level of civic engagement (Nah & Yamamoto, 2017). Moreover, the location-based mobile services and applications, in particular, have been found to promote individuals' awareness of shared space and their participation in community-oriented activities (Ganoe et al., 2010). Taken together, the mobile devices matter not only as a personal medium but also a community-oriented civic technology, which enables citizens to constantly access up-to-date information and news concerning community issues and public affairs.

To summarize, the above studies all elucidate the common mechanisms through which the expressive use of digital media build communities and promote greater civic participation. On one hand, Internet, social media, and mobile devices all have the capabilities to facilitate more frequent community interactions and foster a strong sense of community and collective efficacy for residents to solve community issues. On the other hand, civically expressive activities often involve self-reflective processes in information consumption (Pingree, 2007). To engage in civically expressive activities, individuals process information with more cognitive effort, often clarifying their thoughts so that they can express them coherently to others (Pingree, 2007; Scheufele, 2002). In this way, individuals transfer status from observers to participants by expressing their opinions about politics and current events (Bem, 1967; Nah & Yamamoto, 2017). Building on these theoretical rationales and prior findings, we propose the following hypothesis:

H2. Expressive digital media use will be positively related with offline civic participation (a), online civic participation (b), collective efficacy (c), and neighborhood belonging (d).

Interaction Effect between ICSN and Expressive Digital Media Use

Moving beyond independent direct effects of ICSN and expressive digital media use on civic engagement, we also assess the combined effect of ICSN and expressive digital media use in predicting different types of engagement. To do so, we build our argument based on a differential gains model (Hardy & Scheufele, 2005; Scheufele, 2002). This model suggests that the effects of news on political participation are contingent on how much an individual engages in political discussion. The effects of news on political participation tend to be stronger among those who frequently talk about politics compared to those who talk less about politics. This argument is based upon two assumptions. First, interpersonal political discussion often helps people prepare to be cognitively tuned. People try to make sense of information prior to discussion in order to describe information to others better. Second, political discussion may clarify ambiguities or complement insufficient information from mass media, which may

strengthen the effects of traditional media use on political participation. In these ways, the act of political discussion—moving beyond passive reception of information—has the potential to translating into further political action.

Hardy and Scheufele (2005) further tested the traditional differential gains model in the online context and suggested that the differential gains model can also be applied to the online setting. In other words, online interactions (not only face-to-face interactions) can moderate the relationship between news use and participatory behaviors.

Based on previous literature on the role of political discussion and expression on civic engagement, we propose that expressive digital media use through the Internet as an online communication space, social media as a platform, and mobile phones as a device—if used for sharing information and news as well as expressing one's opinion regarding community issues and public affairs—can augment ICSN's effect on civic engagement. Citizens' expressive behaviors about local politics or community issues may reinforce their commitment to their community beyond what they have already gained through a community storytelling network (Nah & Yamamoto, 2017). In other words, citizens may try hard to organize and integrate the information that they get from their community storytelling network in order to share their opinions efficiently with others. In this way, expressive digital media use and ICSN may have a synergistic effect in increasing the level of civic engagement. On the other hand, if the storytelling network does not go along with expressive activities, the storytelling network's influence on civic engagement would be weakened. We thus propose the following hypothesis:

> H3. The relationship between ICSN and offline civic participation (a), online civic participation (b), collective efficacy (c), and neighborhood belonging (d) will be moderated by expressive digital media use, such that this relationship will be stronger for those who more frequently use online for expressing opinions about local civic issues.

Method

Data Collection

Data in this study were collected from an online survey using online sample registered with Dynata (Research Now/SSI). Dynata is a global marketing research firm. Its online sample comes from a multi-sourced recruitment model comprising not only traditional research panels (e.g., online banners, social media influencers, and mobile app panels) but also APIs and online, social media communities. This integrated approach increases diversity and representation of the samples.

The online survey was conducted between February 19 and March 2, 2019. An online panel registered with Dynata was proportionately drawn to match the demographic distribution of a large metropolitan statistical area in the United States (see the Appendix B for the sampled respondents versus the actual demographic distribution). Stratified quota sampling was implemented to make the final sample proximate to the

distribution of the demographic factors, such as gender, age, education, income, and race/ethnicity. Participants were contacted via notifications including emails. Within Dynata's system, participants were matched with an available survey using multiple points of randomization. The cooperation rate was about 45% across the online panel and the final respondents were 741.

The metropolitan area in this study has a long tradition of civic engagement through the city government-citizen coalition system in the neighborhoods (Leistner, 2013), which has established community infrastructure for civic actions. It is well known as a highly liberal and environmentally friendly city. In terms of demographic features, it is among the cities with the highest proportion of White residents (about 64%) in the United States. The majority of residents who immigrated to the city is the middle-class Whites.

As presented in Appendix B, while Dynata strived for proximation using stratified quota sampling, the sample approximately matched the actual population of the large metropolitan area on key demographics such as age and income only. Rather, the sample slightly overrepresented Whites (73.3% versus 63.5%) and highly educated individuals (college degree or more: 45.2% vs. 32.3%), and overrepresented females (61.5% vs. 51.7%).

Additionally, we added a table of zero-order Pearson's correlations to show the relationship among all the variables used for the theorized model. Zero-order correlations indicate that the four criterion variables (i.e., offline civic participation, online civic participation, neighborhood belonging, and collective efficacy) were strongly correlated (for further details, see the Appendix A).

Measures

Offline civic participation. Based on previous research (e.g., Kim & Ball-Rokeach, 2006a; Nah & Yamamoto, 2017, 2018), respondents were asked to indicate whether they have engaged in the ten political activities during the past 12 months in person: (1) attended a city council meeting, public hearing, or neighborhood council meeting; (2) written a letter to the editor of a newspaper, television station, or magazine or called a radio station to voice their opinion; (3) contacted an elected official about a problem; (4) talked to a community leader or an official, such as a school administrator or a police officer, about unfair policy or local issues; (5) signed a petition; (6) taken part in any political demonstration or protest; (7) voted in an election to elect local city government members; (8) boycotted a brand or product; (9) volunteered for a social cause or neighborhood initiative; (10) donated to support a political, social or charitable cause. These ten items were summed to form a composite index ($M = 3.05$, $SD = 2.50$, Cronbach's $\alpha = 0.77$).

Online civic participation. Based on previous research (e.g., Nah & Yamamoto, 2017; Ognyanova et al., 2013), respondents were asked to indicate whether they have used the Internet to engage in the wide range of online political activities during the past 12 months. These activities include six online political activities (i.e., writing to a

politician or a public official; donating to support a political, social or charitable cause; subscribing to a political listserv; signing up to volunteer for a campaign/issue; sending a political message via email; emailing the editor of a newspaper, television, radio or magazine). These six items were summed to form a composite index ($M = 1.31$, $SD = 1.66$, Cronbach's $\alpha = 0.77$).

Neighborhood belonging. Based on previous research (Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006b), we defined neighborhood belonging as both subjective and objective attachment to the neighborhood. For the subjective dimension items, respondents were asked to indicate how much they agreed with the following four statements about the relationship with their neighbors on a seven-point scale (1 = *strongly disagree*, 7 = *strongly agree*): You are interested in knowing what your neighbors are like; You enjoy meeting and talking with your neighbors; Your neighbors always borrow things from you or your family; It's easy to become friends with your neighbors. For the objective dimension items, respondents were asked to indicate how many of their neighbors they knew well enough to ask them to ''keep watch on their house or apartment,'' ''ask for a ride,'' ''talk with them about a personal problem,'' and ''ask for their assistance in making a repair.'' We recoded open-ended responses into seven categories (1 = *no neighbor*, 2 = *one neighbor*, 3 = *two neighbors*, 4 = *three neighbors*, 5 = *four neighbors*, 6 = *five neighbors*, 7 = *six neighbors or more*) ($M = 2.87$, $SD = 1.52$). Total eight items (i.e., four subjective and four objective dimension items) were combined to form a composite index of neighborhood belonging ($M = 3.39$, $SD = 1.33$, Cronbach's $\alpha = 0.89$).

Collective efficacy. We updated the six-item measure from Kim and Ball-Rokeach (2006b) to include additional items, and asked respondents on a five-point scale (0 = *none*, 4 = *all*) to indicate how many of their neighbors could be counted on to "do something" if (1) A stop sign or a speed bump was needed to prevent people from driving too fast through your neighborhood; (2) There were dangerous potholes on the streets where you live; (3) The sports field or park that neighborhood kids want to play on has become unsafe due to poor maintenance or gangs; (4) The trees along the streets in your neighborhood were uprooting the sidewalks, making them unsafe; (5) A child in your neighborhood is showing clear evidence of being in trouble or getting into big trouble; (6) Budget cuts threaten to close a local high school; and (7) The fee for an overnight parking permit in your community is doubled. These seven items were summed to form a composite index ($M = 1.77$, $SD = 1.12$, Cronbach's $\alpha = 0.91$).

Integrated connectedness to a storytelling network (ICSN). Following the operationalization of previous works (e.g., Kim & Ball-Rokeach, 2006a, 2006b; Nah & Yamamoto, 2017), ICSN is measured by summing three interaction terms between local media connectedness (LC), interpersonal neighborhood storytelling (INS), and connection to community organizations (OC). In formula, it is expressed as $\mathrm{ICSN} = \sqrt{\mathrm{LC} \times \mathrm{INS}} + \sqrt{\mathrm{INS} \times \mathrm{OC}} + \sqrt{\mathrm{LC} \times \mathrm{OC}}$ ($M = 8.66$, $SD = 5.18$). First, to measure *local media connectedness*, we asked respondents how often they read or watched

television news stories, newspaper stories, radio news stories, Internet news stories, mobile news stories, and social media news stories about local politics or community issues (1 = *never*; 7 = *frequently*), and how much attention they paid to such news stories about local politics or community issues (1 = *never*; 7 = *close attention*) (M = 3.55, SD = 1.40, Cronbach's α = 0.82). To measure *interpersonal neighborhood storytelling*, we asked respondents how often they had a discussion with other people about things happening in their neighborhood (1 = *never*; 10 = *all the time*) (M = 5.10, SD = 2.60). Finally, to measure *connection to community organizations*, we asked respondents whether they belonged to any of the following organizations: sport or recreational organization; cultural or ethnic groups; religious or church groups; neighborhood organizations; charitable organizations; political or advocacy groups; educational or school-based groups; and other. Respondents were asked to choose either "yes" (coded as 1) or "no" (coded as 0) for each of these activities. The responses were summed to form an additive index (M = 1.24, SD = 0.25, Cronbach's α = 0.74).

Expressive digital media use. To create a composite index of expressive digital media use, three different types of online expression (i.e., Internet, mobile phone, and social media) were measured separately and totaled. To measure expressive Internet use, respondents were asked on a seven-point scale (1 = *never*; 7 = *frequently*) to indicate how often they used the Internet (not including social media or mobile phone) to (1) express opinions and (2) pass along information encountered online about local politics or community issues (M = 2.90, SD = 1.82). To measure expressive mobile use, respondents were asked on a seven-point scale (1 = *never*; 7 = *frequently*) to indicate how often they used their mobile phone to (1) express opinions and (2) pass along information encountered online about local politics or community issues (M = 2.68, SD = 1.85). Lastly, to measure expressive social media use, respondents were asked on a seven-point scale (1 = *never*; 7 = *frequently*) to indicate how often they used social media (e.g., Facebook, Twitter, Instagram) to (1) express opinions and (2) pass along information encountered online about local politics or community issues (M = 2.63, SD = 1.88). These items were summed to form a composite index of expressive digital media use (M = 2.74, SD = 1.68, Cronbach's α = 0.90)

Statistical controls. In order to adjust for potential confounds, we included a variety of control variables that have been found in previous literature to be associated with various types of civic engagement (e.g., Kim & Ball-Rokeach, 2006a; Nah & Yamamoto, 2017; Shah et al., 2001). Demographic variables include age (M = 48.27, SD = 17.74, Min = 18, Max = 88), gender (61.5% females), race (73.3% white), education (operationalized as highest level of education that they have completed; *Median* = some college, no degree), total annual household income (*Median* = $50,000–$74,999), length of residence (M = 13.72 years, SD = 14.18 years), and home ownership (own = 72.2%; rent = 27.8 %). Ideology was measured with two items, asking respondents to report their ideological position on a scale from 1 (*very liberal*) to 7 (*very conservative*) in terms of both social and economic issues (M = 3.69, SD = 1.65, Spearman-Brown = 0.88). Party

affiliation was measured by asking the respondents whether they considered themselves a (1) Democrat, (2) Republican, (3) Independent, or (4) Other. Republicans were coded as 1, Democrats and Independents are coded as 0, and others were excluded from the analysis (Republican: 26.3%; Democrat: 38.9%; Independent: 30.4%; Other: 4.5%). Lastly, we also controlled for heterogeneity amongst discussion groups, as the characteristics of discussion networks in which respondents are embedded may affect their engagement in civic and political activities (e.g., Scheufele et al., 2006). Respondents were asked, on a 7-point scale (1=*never*; 7=*frequently*), how often they talked about neighborhood issues with (a) people of a different gender, age, educational level or income; (b) people of different ideological viewpoints; (c) people of different party affiliations; (d) people of a different race or ethnicity; and (e) people belonging to a different religion. These five items were summed to form a composite index of discussion heterogeneity ($M=3.58$, $SD=1.89$, Cronbach's $\alpha=0.96$).

Analytic Strategy

To test the hypotheses, we ran ordinary least square (OLS) regression models. The interaction variable (i.e., ICSN × expressive digital media use) was created and added in order to assess the moderating effects of expressive digital media use on the relationship between ICSN and different types of civic engagement. To avoid a multicollinearity problem, ICSN and expressive digital media use were centered prior to analysis (Aiken & West, 1991). The multiplication of these two variables enables us to test whether the impact of ICSN on civic engagement is contingent on the extent to which respondents used the Internet, social media, and mobile phones to share information and news as well as express opinions about local issues or public affairs. The interaction pattern was probed by testing the conditional effects of the moderators at three levels: one standard deviation below the mean, at the mean, and one standard deviation above the mean.

Results

As Table 1 indicates, overall the models account for 38.2 % of the variance in offline civic participation, 34.1% in online civic participation, 18.1% in collective efficacy, and 39.6% in neighborhood belonging.

H1 (H1a, H1b, H1c, and H1d) predicts that ICSN is positively associated with different types of civic engagement (i.e., offline civic participation, online civic participation, collective efficacy, and neighborhood belonging). Table 1 presents the results of OLS regression analyses. While controlling for all other variables in the model, ICSN is found to be strongly and positively related to all different types of civic engagement (offline civic participation: $\beta=0.49$, $p<.001$; online civic participation: $\beta=0.36$, $p<.001$; collective efficacy: $\beta=0.22$, $p<.001$; neighborhood belonging: $\beta=0.33$, $p<.001$). Thus, the first set of hypotheses—H1a, H1b, H1c, and H1d— are all supported.

Table 1. Predicting Different Types of Civic Engagement.

	Offline civic participation	Online civic participation	Collective efficacy	Neighborhood belonging
Gender (Female)	−0.04	−0.03	0.03	−0.04
Age	0.10**	0.05	0.12**	0.13***
Education	0.01	0.01	−0.07#	−0.02
Income	−0.02	0.01	0.10*	0.07*
Race (White)	−0.05	−0.05	0.02	−0.03
Length of residence	0.05	−0.02	0.06	0.08*
Home ownership (Own)	0.02	−0.01	0.03	0.09*
Ideology (Conservative)	−0.15***	−0.14***	−0.02	0.00
Party affiliation (Republican)	−0.05	−0.07#	−0.06	−0.04
Discussion heterogeneity	0.09*	0.04	0.20**	0.31***
ICSN	0.49***	0.36***	0.19***	0.30***
Expressive digital media use	0.10*	0.24***	0.12*	0.16***
Final R^2 (%)	38.5	33.1	18.8	43.5

Note. $N = 708$. Entries are standardized regression coefficients.
#$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 2. Interactive Effects of ICSN and Expressive Digital Media Use on Different Types of Civic Engagement.

	Offline civic participation	Online civic participation	Collective efficacy	Neighborhood belonging
ICSN × Expressive digital media use	0.03	0.12**	0.11**	0.00
Incremental R^2 (%)	0.01	1.1	0.8	0.0

Note. $N = 708$. Entries are standardized regression coefficients. The models controlled for age, gender, education, income, race, length of residence, home ownership, ICSN, expressive digital media use.
*$p < .05$. **$p < .01$. ***$p < .001$.

H2 (H2a, H2b, H2c, and H2d) predicts that expressive digital media use is positively associated with different types of civic engagement. As shown in Table 1, expressive digital media use is found to be positively related to all different types of civic engagement (offline civic participation: $\beta = 0.11$, $p = .009$; online civic participation: $\beta = 0.24$, $p < .001$; collective efficacy: $\beta = 0.16$, $p = .001$; neighborhood belonging: $\beta = 0.22$, $p < .001$). Thus, H2 is supported.

H3 (H3a, H3b, H3c, and H3d) tests the interaction effect between ICSN and expressive digital media use on different types of civic engagement. As shown in Table 2, ICSN significantly interacts with expressive digital media use in predicting online civic participation ($B = 0.12$, $p = .001$) and collective efficacy ($B = 0.10$, $p = .009$). In other words, the relationship between ICSN and online civic participation (and collective efficacy) is stronger as levels of expressive digital media use increased (see Figure 1). Yet, there is no significant interaction effect between ICSN and expressive digital media

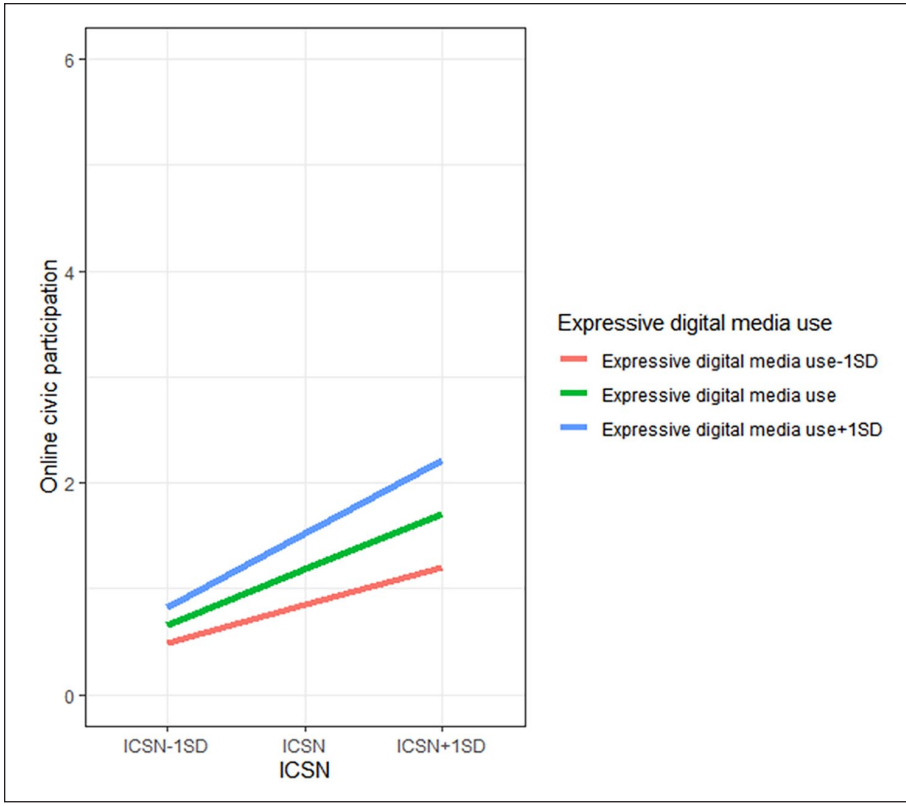

Figure 1. Interaction effects between ICSN and expressive digital media use on online civic participation.

use, when DVs are offline civic participation and neighborhood belonging. Thus, H3b and H3c are supported, while H3a and H3d are not supported.

For interpretation of the interaction, we examined the simple slopes of the outcome variables (i.e., online civic participation and collective efficacy) on the predictor variable (i.e., ICSN) at different levels of the moderator (i.e., expressive digital media use), using Hayes's (2013) PROCESS macro (Model 1). Bootstrap confidence intervals for relationship between ICSN and online political participation at low (16th percentile), moderate (50th percentile), and high (84th percentile) values of expressive digital media use can be found in Table 3. When the outcome variable was online civic participation, there is a significant effect of ICSN on online civic participation at all the levels of expressive digital media use (as evidenced by the 95% confidence interval not including zero). When the outcome variable is collective efficacy, there is no significant effect of ICSN on collective efficacy for low expressive digital media

Table 3. Simple Slopes of the Civic Engagement Variables on ICSN at Different Levels of Expressive Digital Media Use.

Moderator	DV: Online civic participation			DV: Collective efficacy		
Expressive digital media use	*B*	*SE*	Bootstrap 95% CI	*B*	*SE*	Bootstrap 95% CI
Low	0.07	0.02	[0.04, 0.11]	0.02	0.01	[−0.01, 0.04]
Moderate	0.10	0.01	[0.07, 0.12]	0.03	0.01	[0.01, 0.05]
High	0.14	0.02	[0.11, 0.17]	0.06	0.01	[0.03, 0.08]

Note. Entries are unstandardized regression coefficients. Bootstrap resample = 5,000. Estimates were calculated using the PROCESS macro.

users, but the effects are significant for the moderate and high levels of expressive digital media use (see Figure 2).

Discussion

The study tests not only the main effects of integrated connection to storytelling network (ICSN) and expressive digital media use but also the moderation effects of expressive digital media use on online civic participation and collective efficacy. In sum, the results demonstrate that individuals' integrated connection to storytelling network (ICSN) is a strong predictor of all civic engagement variables. Specifically, the higher level of ICSN community residents have, the more likely they would engage in their local communities, resulting in higher levels of neighborhood belonging, collective efficacy, and civic engagement in a wide array of online and offline civic activities. These results are consistent with prior studies on CIT, which were predominantly conducted in the context of ethnically heterogenous communities (e.g., Kim & Ball-Rokeach, 2006a; Kim et al., 2006; Liu et al., 2018). The current study extends this line of scholarship by suggesting that ICSN can be an invaluable community asset leading to a healthy civil society across different types of communities (Kim et al., 2019; Nah & Yamamoto, 2017) although the interpersonal, mediated, and organizational communication dynamics may vary due to the specific demographics of community members. Testing CIT in an ethnically unique local community (e.g., a predominantly White urban community in this study) reaffirms the validity and applicability of CIT across diverse community contexts (Nah et al., 2016).

More importantly, in addition to the robustness of ICSN, expressive digital media use is positively associated with all different types of civic engagement. These results carry important theoretical implications of CIT indicating that digital media as a new ecological storytelling agent vis-à-vis connections to storytelling network play a vital role in further promoting civic outcomes (Kim et al., 2019; Nah & Yamamoto, 2017). It is particularly notable that expression-oriented media use has different moderating roles for online and offline contexts (Nah & Yamamoto, 2019; Yamamoto & Nah, 2018), indicating that expressive communications may serve as

a distinct condition for online and offline civic action, respectively. In addition to the moderating role of expressive digital media use on online civic participation, another notable finding points out the positive role of expression-oriented media use in promoting collective efficacy as individuals' shared belief for and attachment to their communities. These results imply that online expressive communication further promotes the integrated community storytelling network to enhance the level of collective efficacy.

However, the interactions between ICSN and expressive digital media use on offline civic participation and neighborhood belonging are not significant. These findings offer distinct implications indicating that expressive digital media use, such as sharing news and expressing opinions online, does not necessarily reinforce the positive impact of ICSN in promoting place-based neighborhood belonging and civic participation. These findings point to more nuanced mechanisms associated with different civic engagement outcomes suggesting that some can be more effectively promoted through online processes, whereas other outcomes may need place-based actions such as neighborhood belonging or offline civic participation in this case. Taken together, this study advances CIT by testing the moderating roles of expressive digital media use as a driving force on the multifaced concept of civic engagement in a more ethnically homogeneous community context. Moreover, this study makes a unique contribution to the existing body of CIT literature by integrating expressive digital media use across communication spaces, platforms, and devices, as well as testing the interactions between ICSN and expressive digital media use across all the three forms of civic engagement in a more comprehensive way.

These results offer important theoretical implications for CIT by highlighting the roles of expressive digital media use. CIT scholarship needs to consider expressive digital media use across digital communication spaces, platforms, and devices as newly emerging storytelling agents at the core of storytelling network. This line of scholarship should also continue to test it across diverse communities, cultures, and countries (e.g., Kim & Kim, 2018). In this regard, community organizations and new media organizations as meso- and macro-level storytellers could function through websites, social media platforms, and mobile apps or devices, which can further promote online expressive communications among citizens. Therefore, it would be necessary for policy makers to strive to establish a strong technological infrastructure or Wi-Fi network system, thereby creating more online and offline public spheres conducive to public information-sharing and talking about community issues and public affairs in the saturated media landscape.

Of particular interest in this study is that ICSN interacted with expressive digital media use on online civic engagement and collective efficacy. In other words, the relationships between ICSN and online civic engagement and collective efficacy are even stronger for those who share more information and express more opinions about what is happening in their communities. Such a finding suggests that a communicatively integrated, actively engaged use of digital media can function as a mobilizer for local civic communities (Choi et al., 2021; Nah & Yamamoto, 2017, 2018). These

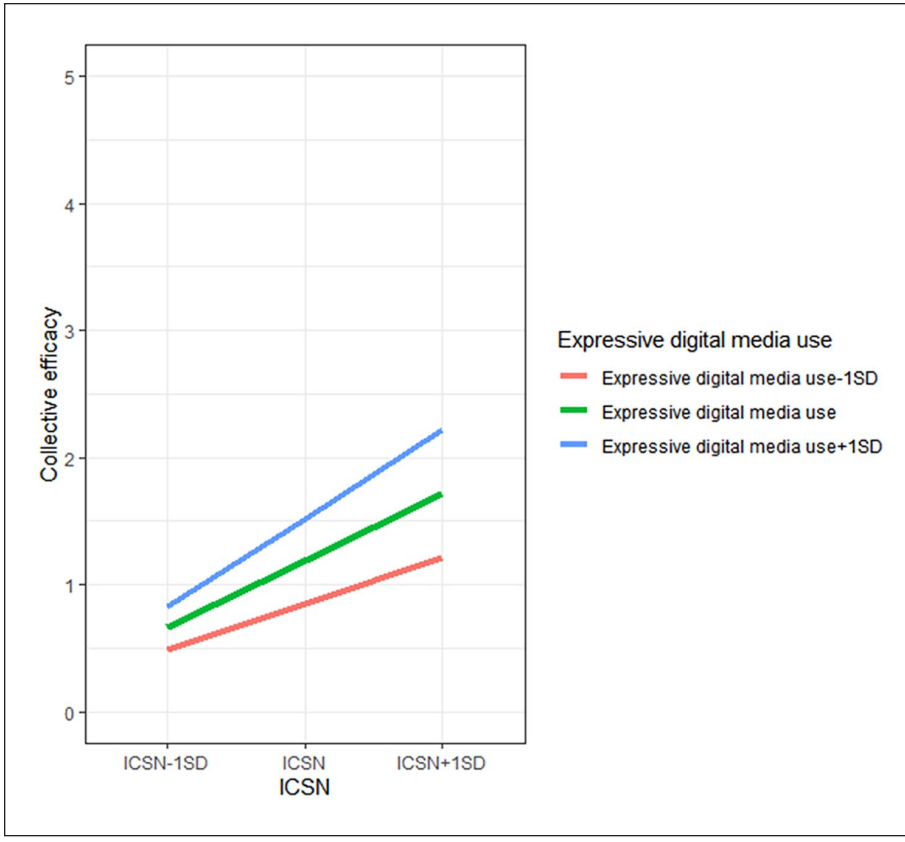

Figure 2. Interaction effects between ICSN and expressive digital media use on collective efficacy.

interaction effects also resonate with the differential gains model mentioned earlier (Hardy & Scheufele, 2005), which suggests that online interactions can moderate the relationship between integrated connection to storytelling network (ICSN) and participatory behaviors. However, such moderating effects do not hold when the outcome variable is offline civic participation or neighborhood belonging. This finding is hardly surprising given that a number of scholars have pointed out that online and offline civic participation are related, but distinct concepts (e.g., Oser et al., 2013; Vitak et al., 2011). Especially given that this study focuses on "local level" civic engagement in a specific region rather than at the national scale, the results may differ from those studies focusing on national-level civic engagement with nationally representative surveys. Thus, future research should examine whether our study's findings hold in other contexts, which may further establish the validity and applicability of CIT.

Despite theoretical, practical, and policy implications, this study has some limitations and suggestions for future scholarship. First, this study tests the robustness of CIT in the White dominant urban community as a research site. However, the data collected in a U.S. metropolitan, ethnically homogenous area do not necessarily lead to generalizability of the U.S. population as local communities share unevenly distributed communication infrastructure and resources, as well as distinct demographics and civic culture which, in turn, can influence the varying degrees of civic engagement. Second, comparative community studies could offer a more comprehensive picture as to how CIT with digital media as a new ecological storytelling agent works across diverse lines and boundaries. Therefore, CIT scholarship should collaborate on large community studies within and between multiple communities, countries, and cultures. Third, while the study integrates expressive digital media use as an emerging storytelling network across the Internet, social media, and a mobile device, future study needs to consider expanding the measurement of the expressive digital media with more distinct online communication spaces (e.g., websites, blogs, news comment sections), platforms (e.g., Facebook, Twitter), and mobile devices and apps. Fourth, given expressive digital media use did not further strengthen the relationship with ICSN on offline civic participation and neighborhood belonging, it would be interesting for future research to examine how community residents conceive what community news and local issues mean in the digital media environment. The digitally mediated communication platforms may transform the ways community residents define, consume, and engage in the location-based news and civic activities. Future studies need to consider incorporating these offline and online dynamics into the CIT scholarship.

Conclusion

All things considered, the current study contributes uniquely to the existing body of CIT scholarship as follows. First, the study advances CIT with an integrated concept of expressive digital media use as an emerging storytelling agent in further promoting civic outcomes in a more comprehensive way. Second, the study extends traditional storytelling network to digital storytelling network by testing the moderating roles of expressive digital media use on civic outcomes such as online civic participation and collective efficacy. Third, the current study further reaffirms the validity and applicability of CIT across urban and rural communities as well as ethnically diverse and homogeneous communities. In conclusion, while the study tests the direct and interaction effects of ICSN and digital media on civic engagement, it would also be necessary for future scholarship to test the mediating or moderating roles of neighborhood belonging and collective efficacy leading to civic participation (Kim & Ball-Rokeach, 2006a). Neighborhood belonging and collective efficacy may serve as contextual and conditional factors, which can interact with ICSN and digital media contributing to the building of civic communities.

Appendix A. Zero-Order Correlations Among the Variables in the Model.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Gender																
2. Age	−0.10[b]															
3. Education	−0.13[c]	0.17[c]														
4. Income	−0.19[c]	0.11[b]	0.38[c]													
5. Race	0.01	−0.34[c]	0.07	−0.01												
6. Length of residence	−0.05	0.41[c]	−0.01	0.10[b]	−0.19[c]											
7. Home ownership	−0.08[a]	0.14[c]	0.11[b]	0.30[c]	−0.18[c]	0.26[c]										
8. Ideology	−0.06	0.19[c]	−0.10[b]	0.05	−0.17[c]	0.13[c]	0.19[c]									
9. Party affiliation	0.07	−0.04	0.07	−0.06	0.15[c]	−0.05	−0.12[b]	−0.50[c]								
10. Discussion heterogeneity	−0.01	−0.09	0.13[b]	0.11[b]	0.06	−0.02	0.03	−0.07	0.01							
11. ICSN	−0.07	−0.15[c]	0.17[c]	0.12[b]	0.13[c]	−0.09[a]	0.01	−0.10[b]	−0.03	0.52[c]						
12. Expressive digital media use	−0.07	−0.39[c]	0.00	−0.01	0.28[c]	−0.18[c]	−0.06	−0.17[c]	0.00	0.49[c]	0.59[c]					
13. Offline civic participation	−0.10[b]	0	0.13[b]	0.08[a]	0.01	0.02	0.05	−0.15[c]	−0.00	0.39[c]	0.58[c]	0.40[c]				
14. Online civic participation	−0.07	−0.19[c]	0.11[b]	0.08[a]	0.11[b]	−0.11[b]	0.00	−0.12[b]	−0.02	0.57[c]	0.68[c]	0.75[c]	0.56[c]			
15. Collective efficacy	−0.03	0.04	0.04	0.14[c]	0.02	0.07[a]	0.07	−0.02	−0.07	0.36[c]	0.35[c]	0.28[c]	0.27[c]	0.39[c]		
16. Neighborhood belonging	−0.12[b]	0.06	0.15[c]	0.19[c]	−0.01	0.09[a]	0.14[c]	−0.00	−0.07	0.54[c]	0.53[c]	0.42[c]	0.42[c]	0.54[c]	0.53[c]	

Note. Cell entries are two-tailed zero-order correlation coefficients. For dichotomous variables, Pearson's point-biserial correlations were used.
[a]$p < .05$. [b]$p < .01$. [c]$p < .001$.

Appendix B. Sample Comparison with Population.

Quota buckets	Population (%)	Sample (%)
Age		
18–24	11.76	10.1
25–34	17.90	18.0
35–44	16.27	16.6
45–54	16.70	13.6
55–64	16.79	16.6
Age 65+	20.58	25.1
Total	100.00	100.00
Gender		
Male	48.28	38.5
Female	51.72	61.5
Total	100.00	100.00
Race		
White alone	63.47	73.3
Black alone	11.87	5.9
Hispanic	16.26	10.7
Asian	6.04	7.3
Other (including two or more races)	2.36	2.8
Total	100.00	100.00
Education		
Less than high school graduate	10.95	2.8
High school graduate	28.66	21.6
Some college	28.14	30.4
College degree or more	32.25	45.2
Total	100.00	100.00
Household income		
Less than $ 25,000	14.54	18.6
$ 25,000–$ 49,999	19.13	22.5
$ 50,000–$ 74,999	16.62	19.6
$ 75,000–$ 99,999	13.97	16.1
$100,000+	35.74	23.2
Total	100.00	100.00

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