Online Participation in a Community Context:
Civic Engagement and Connections to Local Communication Resources

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This article investigates community-oriented Internet participation and its association with traditional predictors of civic engagement. The analysis poses larger questions about the democratic potential of digital media in diverse communities. Taking a communication infrastructure approach, the study explores the relationship between online and off-line forms of local involvement. The analysis is based on data from a phone survey conducted in 2010 with the residents of a demographically diverse city in the United States. Structural equation modeling is used to evaluate the importance of local media consumption, organizational membership, and interpersonal discussion as drivers of online participation. Community-oriented Internet activities are found to promote off-line civic engagement and intergroup dialogue. A disconnect between online participants and traditional local media suggests a need to rethink the role of community news sources in the context of underserved multiethnic residential areas.[1]♦

Keywords: civic engagement, online participation, journalism, new media, communication infrastructure theory

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The importance of online platforms as participatory spaces and sources of neighborhood information is growing. New research is needed to explore the potential of digital media to promote local involvement and support community building. Several investigations of online aspects of engagement have studied newsgathering and political discussion during election years at the national or state level (Boulianne, 2009). This article examines the predictors and implications of online participation in local issues. The study is grounded in communication infrastructure theory (Ball-Rokeach, Kim, & Matei, 2001)—an ecological framework that examines local communication resources and their civic outcomes.

Based on 2010 phone survey data, this work explores the relationship between traditional and Internet forms of civic engagement. The analysis considers established predictors of local participation: media consumption, organizational membership, and interpersonal discussion (Kim & Ball-Rokeach, 2006a). We test the relevance of those factors as drivers of online community involvement. To better understand civic dynamics in diverse neighborhoods, we further examine the role of intergroup dialogue in local engagement. Using structural equation modeling, we investigate the capacity of online platforms to enhance communication across ethnicities (see Figure 1).

The study contributes to existing literature by providing insights into the role of digital participation in an important but understudied category of local communities: multiethnic cities with large new immigrant populations.

Diverse residential areas where ethnicities coexist are increasingly common in the United States—and indeed worldwide (MacDonald & Sampson, 2012; Matsaganis, Katz, & Ball-Rokeach, 2011). In the United States, ethnic minorities constitute more than one-third of the total population and are expected to surpass 50% of all residents in less than three decades (Humes, Jones, & Ramirez, 2011; U.S. Census Bureau, 2008). In 2010, more than 10% of all U.S. counties already had a majority minority population with non-Hispanic Whites accounting for less than half of the people living in the area (U.S. Census Bureau, 2011). Because the White population is also older, nearly one-fifth of U.S. counties had minority residents constituting over 50% of all young people age 18 and under.

The current shifts in population dynamics combined with decreasing levels of traditional participation (MacDonald & Sampson, 2012) and a decline in local accountability reporting (Downie & Schudson, 2009; Waldman, 2011) are altering the role of digital tools in civic engagement. Although changing demographics are recognized as one of the major forces that will shape civic and political life in the coming decades, relatively little research has examined patterns of engagement in multiethnic communities (Frey, 2008).

This article attempts to fill the gap, focusing on an ethnically diverse city with low levels of civic engagement largely ignored by mainstream and regional media. The two largest groups represented in the study area—Asian and Hispanic—are also the fastest-growing populations in the United States today (U.S. Census Bureau, 2011).

The Role of the Internet in a Local Communication Infrastructure

Communication infrastructure theory (CIT) builds on the *media system dependency* model (Ball-Rokeach, 1998), focusing on interpersonal and mediated neighborhood interactions and their civic outcomes (Ball-Rokeach et al., 2001). CIT is an ecological framework that emphasizes the importance of communication resources supporting local storytelling. A continuous exchange of stories about the neighborhood allows the construction of a discourse engendering community identity.

A central concept of the theory is the *neighborhood storytelling network*: a social system encompassing the residents, local organizations, and media outlets as well as the connections among them (Matei & Ball-Rokeach, 2002; Wilkin, Ball-Rokeach, Matsaganis, & Cheong, 2007). In the ideal case, micro-level agents (residents) and meso-level agents (organizations and news media) form an integrated network carrying an uninterrupted flow of stories about the community.

Research has demonstrated that this dynamic relationship between storytellers has several positive outcomes. At an individual level, being well-connected to local media, organizations, and other residents is associated with a higher sense of belonging, collective efficacy, and levels of civic participation (Kim & Ball-Rokeach, 2006b). The neighborhood storytelling network is thus theorized to be a crucial factor facilitating resident participation in civic activities.

The Internet is becoming an integral part of neighborhood communication infrastructures. Exploring its role, the CIT framework explicitly takes a *social shaping of technology* perspective (Dutta-Bergman, 2006a; Jones, 1997; Matei & Ball-Rokeach, 2001; Williams & Edge, 1996). New media are seen as necessarily operating within an existing sociocultural context, often reinforcing off-line structures and dynamics (Matei & Ball-Rokeach, 2002). Matei and Ball-Rokeach (2002, 2003) further suggest that connecting to the Internet may be associated with connections to off-line storytellers. They recommend that future research tests this relationship, employing a nuanced operationalization of goal-oriented Internet use rather than a binary access/no access measure. This study takes on that task, proposing that individual connections to local media, organizations, and residents should generally lead to higher levels of community-oriented Internet participation (see Figure 1). This proposal is consistent with a main premise of the CIT approach stating that people connected to one type of communication resource are more likely to have ties with other parts of the storytelling network.

Community-Oriented Online Participation

Rather than looking at the effects of general Internet use on individual civic behavior, we adopt a more nuanced measure focusing specifically on community-related online activities. As suggested by media system dependency theory, individual Internet use is inherently goal oriented (Ball-Rokeach, 1985). Among its main purposes are the understanding of—and participating in—a social environment (Ball-Rokeach, 1998). Local communities are one potential social sphere that could be the target of online activities. Building on previous research studying the intersection of virtual and real spaces with common members (Dutta-Bergman, 2006b), we examine digital practices serving the functional needs of place-based social groups.

Dutta-Bergman's work explores the interdependence of technology and community in the context of crisis communication. It defines online participation through the practices of reading about and discussing on the Internet the 9/11 attacks. Similarly, the operationalization of community-oriented Internet participation (COIP) employed in this article involves items that measure both information gathering and taking part in online discussions about one's neighborhood.

This way of conceptualizing digital involvement shares some characteristics with frameworks studying political Internet uses. Bakker and De Vreese (2011), for instance, identify two forms of politically relevant digital participation. The passive form is related to content consumption from different online sites, and the active one includes measures such as *reacting to digital messages* and *participating in online petitions*.

In its operationalization, the present study similarly uses items measuring passive activities of local content consumption as well as active practices of communication around local issues on the Internet. It does not, however, include participation in online petitions/donations, because initiatives of this kind are extremely rare in the study area, and few of our survey respondents reported involvement in them.

Research Hypotheses

Civic participation is theorized to have a positive relationship with informational media use (Delli Carpini, 2004). Research also has suggested that people who seek specific topics in traditional media are likely to look for them on the Web (Ksiazek, Malthouse, & Webster, 2010). Individuals interested in procuring particular information (e.g., about local events) tend to expose themselves to multiple media outlets likely to contain that information. Reports indicate that 64% of U.S. adults use three or more different types of media weekly to get community news (Rosenstiel, Mitchell, Purcell, & Rainie, 2011).

In a diverse multiethnic community with a predominantly Asian and Latino population, the most relevant sources of local news are geo-ethnic outlets (Lin, Song, & Ball-Rokeach, 2010). The concept of geo-ethnicity refers to the distinctive properties of an ethnic group placed in a specific cultural, spatial, and temporal context. Geo-ethnic media produce content covering a geographic area and/or focusing on issues relevant to residents of a particular ethnicity. This category thus encompasses all community news producers as well as all locally relevant ethnic outlets. CIT identifies those sources as a central part of the neighborhood storytelling network. Being well connected to local and ethnic media promotes involvement with the community and participation in civic life (Kim & Ball-Rokeach, 2006a, 2006b). Our first hypothesis posits a similar relationship for online participation:

H1.   *The individual scope of connections to geo-ethnic media will positively predict levels of community-oriented Internet participation.*

Definitions of civic engagement traditionally include participation in local organizations, volunteering, and other activities focused on community problem solving (Zukin, Andolina, Jenkins, & Delli Carpini, 2006). Putnam (1995) considered organizational involvement a major source of social capital.

Associational membership also has been shown to predict other forms of involvement in civic life, such as attending community forums or doing volunteer work (Rojas, Shah, & Friedland, 2011).

Given the importance of citizens' connections to organizations, researchers have tried to understand the role of communication technologies in that relationship. The Internet, in particular, has enabled organizations to sustain activism and mobilize their members for action (Abroms & Lefebvre, 2009). New technologies allow nonprofits to communicate more efficiently, supplying members with relevant information and creating digital participatory spaces to support an ongoing dialogue about community issues (Ward & Gibson, 2009).

The full potential of the Internet as an instrument of community mobilization is yet to be realized. Nongovernmental organizations, especially smaller ones operating locally, do not always employ digital tools, because doing so requires certain resources and technical skills from both the organization and their clientele. Still, when organizations do use new media to engage their members, those members should become more active in online spaces.

Because organizational membership is known to promote a range of civic activities, it can be expected it to stimulate online as well as off-line forms of community-oriented participation. Thus, we propose that:

H2.   *The individual scope of connections to community organizations will positively predict levels of community-oriented Internet participation.*

Online social networks often mirror personal relationships from the off-line world (Hampton, Goulet, Rainie, & Purcell, 2011). People draw on various communication technologies to connect with others, but they use them in conjunction with—rather than instead of—face-to-face contact (Boase, 2008). Similar patterns emerge in neighborhood interactions. According to recent reports, Americans using online neighborhood discussion forums were likely to know their neighbors, talk with their neighbors in person, and provide support to or receive support from their neighbors (Hampton, Sessions, Her, & Rainie, 2010). As suggested by Matei and Ball-Rokeach (2003), this emphasizes the importance of studying the implications of new technologies in the context of existing sociocultural structures.

Interpersonal discussion with other residents is one of the most important factors encouraging interest in local affairs, attachment to the community, and participation in civic activities (Kim & Ball-Rokeach, 2006a). We propose that people who have more frequent face-to-face neighborhood interactions will also be more engaged in community-oriented Internet use.

H3.   *The intensity of individual interpersonal neighborhood discussion will positively predict levels of community-oriented Internet participation.*

Hypotheses 1 through 3 suggest higher community-oriented online participation levels among residents who are connected to micro- and meso-level actors in their local storytelling network. According to CIT, such individuals would also have high scores on neighborhood belonging, perceived collective

efficacy, and civic participation (Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006a). The associations between Internet use, local storytelling resources, and engagement were discussed in a series of studies conducted by Cohen, Ball-Rokeach, and other researchers after the 9/11 attacks (Cohen, Ball-Rokeach, Jung, & Kim, 2002; Kim, Ball-Rokeach, Cohen, & Jung, 2002; Kim, Jung, Cohen, & Ball-Rokeach, 2004). According to their findings, heavy Internet users relied on the medium for information and were more likely to be involved in a broad range of civic activities in the aftermath of the tragedy.

Although several studies have reported sizeable positive effects of Internet access on civic and political engagement (Kenski & Stroud, 2006; Mossberger & McNeal, 2008), other research has found small effects or no effect (Scheufele & Nisbet, 2002). In a meta-analysis of 38 studies, Boulianne (2009) found evidence of a positive impact of Internet use on participation, but the effect was quite small. Commenting on that, Bakker and de Vreese (2011) proposed that more nuanced measures describing specific types of Internet use would be more likely to throw light on that relationship. Theirs and other studies (Bakker & De Vreese, 2011; Shah, McLeod, & Yoon, 2001) confirm that specific Internet uses are better predictors of civic and political participation than total time spent online.

Looking in particular at community-oriented online practices, Dutta-Bergman (2006a) proposes that online and off-line civic activities are, in fact, complementary. Controlling for other factors, community-based Internet use was found to be associated with higher levels of civic participation.

Several well-known drivers of civic engagement have been tested and found relevant for the Internet. Similar to TV and print, the Web leads to positive civic outcomes when it is used for news and information seeking, but has a negative effect when used for entertainment (Shah, Kwak, & Holbert, 2001; Shah, McLeod, et al., 2001). Informational media use, whether through traditional or online sources, repeatedly has been shown to contribute to participation (Boulianne, 2011; de Zuniga, 2010; Shah, Cho, & Eveland, 2005). Discussions of relevant issues, whether conducted online or in person, also have a positive impact on engagement (Bakker & De Vreese, 2011; De Vreese, 2007; Valenzuela, Kim, & de Zuniga, 2012).

Because the COIP index used here involves both informational media use and local issue online discussions, we expect that:

H4.   *Community-oriented Internet participation will positively predict off-line levels of civic participation.*

Given the contradictory findings of previous research, however, this study conducts further analyses to test the direction of influence between traditional and online participation. We estimate additional models allowing for the possibility that off-line engagement predicts COIP or that the two have a more complex bidirectional relationship.

In a multiethnic community, both deliberative practices and institutional legitimacy require interaction between ethnic groups (Delli Carpini, 1998). Community building involves diverse individuals genuine in their interaction with one another and committed to living together (Gudykunst, 1994). Many

studies have demonstrated a significant link between informal intergroup communication and civic engagement (Gurin, Dey, Hurtado, & Gurin, 2002; Smith, Parr, Woods, Bauer, & Abraham, 2010).

The Web is a valuable space for intergroup interaction. It has the potential to bridge group boundaries, facilitate interethnic conversations, and foster collaboration toward shared community goals. Encountering people from different ethnicities on an online platform may, in accordance with the *contact hypothesis*, remove barriers to off-line relations. The contact hypothesis suggests that under certain conditions—such as equal status and cooperation toward a common goal—intergroup interaction will reduce out-group prejudice (Allport, 1954; Pettigrew & Tropp, 2006). Studying that process online, Amichai-Hamburger and McKenna (2006) state that the Web is uniquely suited to meet the conditions of the contact hypothesis. They also point to the additional benefits of linguistic tools that participants in online conversations can use to address language barriers.

Postmes and Baym (2005) propose that, in addition to opportunities for contact, the Internet can provide a safe environment where interethnic conflict and cooperation can be played out. Thus, online spaces may allow for nonphysical confrontation and collective action—processes that are often problematic in the off-line world (Wright & Lubensky, 2009).

Nationwide survey results have indicated that online participation is associated with a more heterogeneous social network (Hampton et al., 2010). Frequent Internet users were more likely to confide in someone who is of a different race.

Intergroup interaction is a necessary part of community-related activities. Because it is linked to civic engagement and shown to be potentially facilitated in online settings, we propose that:

H5.   *Community-oriented online participation will positively predict the intensity of individual intergroup interactions.*

H6.   *The intensity of individual intergroup interactions will positively predict levels of off-line civic engagement.*

Method

Research Context

Alhambra, the study area for this research, is a city with 83,000 residents located in Los Angeles County, California. We selected a local community with a diverse ethnic population of Asian (53%), Hispanic (34%), and Anglo (10%) origin (U.S. Census Bureau, 2011). The city's varied ethnic composition manifests in its linguistic diversity, with 72% of the population speaking a language other than English and 27% of the residents living in a linguistically isolated household, where no household member age 14 years or older speaks fluent English. The only dedicated source of local news in the area is a monthly newsletter produced in English by the chamber of commerce. Focus groups conducted with residents

(Chen, Ball-Rokeach, Parks, & Huang, 2011) have indicated that neither this news bulletin nor the local and regional media coverage supplies sufficient information about local issues. In fact, some residents have suggested that the chamber publication acts as a cheerleader of local businesses rather than an independent critic of community issues. Media monitoring and content analysis have confirmed that finding. In this type of diverse, underserved community, online media are emerging as an important platform for storytelling and providing a venue for intergroup interactions.

Procedures

The data for the study reported in this article were collected through a telephone survey conducted in November and December 2010. Seventy-nine percent of the participants were recruited through random-digit dialing of phone numbers in Alhambra. The other 21% responded to a postcard sent to local residential addresses with no listed telephone line. The card contained an invitation written in English, Chinese, and Spanish asking residents to call a toll-free number and participate in a study. This was done to ensure that households without fixed phone lines, and particularly the cell phone–only population, were represented in the study sample.

A computer system (CFMC Survent CATI) was used to assist with the data collection. The average length of the telephone interviews was 25 minutes. The survey was administered in the respondent's language of choice (English, Mandarin, or Spanish).[2] All participants were offered an incentive for completing the survey: a $20 supermarket gift card or an equivalent amount donated to their preferred charity. The response rate for the survey (RR5 as defined in American Association for Public Opinion Research, 2011) was 24%.

Participants

The interviewers were instructed to recruit participants aged 18 and older who had lived in the study area for at least two years and belonged to one of the three ethnic groups with highest representation in the community. As described in the Research Context section above, those three ethnicities combined constituted 97% of the city's population (U.S. Census Bureau, 2011). Quotas were set for each ethnicity (100 White, 150 Latino, and 150 Chinese/Taiwanese respondents were required) to ensure sufficient sample sizes for future statistical analyses within each group. The resulting sample contained a total of 405 residents who self-identified as Chinese/Taiwanese (n = 152), Caucasian/non-Hispanic White (n = 99), or Latino (n = 154). About half (50.6%) of the participants were women, and 67.2% were Internet users. The survey respondents skewed older compared to the total population of the study area. To correct for discrepancies and obtain representative results, the data set was weighed based on the city's age and ethnicity distributions as recorded in the 2010 census.

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[2] *Chinese* here refers to the common written language for individuals living in the provinces of Mainland China and Taiwan. *Mandarin* is used to refer to the official spoken language of China and Taiwan, which is distinct from dialects such as Cantonese, Hokkien, and Hakka.

Measurement

Endogenous Variables

Community-oriented online participation was operationalized through a six-item index based on the scope of online activities respondents had engaged in since moving into their neighborhood. The measure incorporated both local information gathering and online discussion about the community. Participants were asked to report whether they had used the Internet to read news stories or find information about their neighborhood, communicate with other residents of the area, discuss local issues, post comments about the community online, and receive e-mails from local political organizations or neighborhood associations. All questions were measured dichotomously (0 = *no*, 1 = *yes*).

Confirmatory factor analysis was conducted in LISREL 8.8 (Joreskog & Sorbom, 2006). Because the items were binary, PRELIS was used to produce tetrachoric correlations and asymptotic variances and covariances for the analysis. The results indicated that the index was acceptable: all loadings were significant, and the overall fit of the model (χ^2 = 12.8, *p* = .07, *DF* = 7, *NFI* = .99, *RMSEA* = .05) was good. This structure also fit the data better than a model with two separate factors: one for information gathering and another for communication-related items. The scale had satisfactory internal consistency (α = .78). The final measure of community-oriented online participation (range 0 to 4.7, *M* = 1.4, *SD* = 1.3) was calculated as the sum of all items weighted by their factor loadings.

Civic participation was measured through a 10-item index evaluating the scope of respondent participation in a range of political and civic activities within the two years prior to taking the survey. Participants were asked to report whether they had voted in local elections, attended city council meetings, donated to political or charitable causes, sent letters to the editor of local news venues, signed petitions, contacted elected local officials, or talked to community leaders about local issues. Additional questions about local civic practices assessed respondent participation in neighborhood initiatives, in demonstrations or protests, and in boycotts of brands or products. For each of the 10 items, dichotomous responses (0 = *no*, 1 = *yes*) were recorded.

Tetrachoric correlations and asymptotic covariances for the 10 items were used to conduct a confirmatory factor analysis in LISREL 8.8. All item loadings were significant, and the overall model fit (χ^2 = 60, *p* < .05, *DF* = 35, *NFI* = .98, *RMSEA* = .04) was acceptable with χ^2/DF = 1.7 (Wheaton, Muthen, Alwin, & Summers, 1977). The construct also had a satisfactory internal consistency (α = .72). The civic participation index (range 0 to 6.4, *M* = 1.5, *SD* = 1.3) was computed by summing respondent scores on all 10 items weighted by factor loading.

Intergroup interactions were measured based on items asking participants to rate the frequency of their interactions in the neighborhood with Asian, White, and Latino individuals. The answers were recorded using a five-point scale (1 = *never*, 5 = *very often*). The two answers pertaining to interaction with people from ethnicities different from that of respondent were summed to form the *intergroup interactions* index (range 2 to 10, *M* = 5.09, *SD* = 2).

Exogenous Variables

The operationalization of three storytelling network-related variables was based on published communication infrastructure theory research (Kim & Ball-Rokeach, 2006a; Matei & Ball-Rokeach, 2002, 2003).

Connection to geo-ethnic media was assessed by first asking participants about the type of news sources they used to stay informed about their community (including television, radio, newspapers, Internet). Respondents were then prompted to provide specifics about the media mentioned in their answer. They had to identify those as mainstream commercial, public, or geo-ethnic (produced for the specific area or ethnic group). The index (range 0 to 3, $M = 0.86$, $SD = 0.76$) was calculated based on the number of media used to stay on top of the community that were identified as geo-ethnic.

Connection to community organizations was evaluated by asking participants whether they or someone in their household belonged to a community organization. Eight categories of organizations were included in this index: sport or recreational, cultural or ethnic, religious or church, charitable, educational or school-based, political, union or professional, and other. Membership in each type of local organization was coded as 1, and the responses were summed to form the index (range 0 to 4, $M = 0.65$, $SD = 0.87$).

Interpersonal neighborhood discussion was assessed by asking respondents how often they had discussions with other people living in the neighborhood about things happening in their community. The responses were recorded on a 10-point scale (1 = *never*, 10 = *all the time*, $M = 4.2$, $SD = 2.5$).

Control variables: Demographic controls included respondent age (range 18 to 95, $M = 48.6$, $SD = 19$), education level (range 1 to 7, $M = 4$, $SD = 1.7$), income bracket (range 1 to 8, $M = 4$, $SD = 2.4$), and residential tenure (range 2 to 78, $M = 16.4$, $SD = 11.6$). Preliminary models tested with additional controls for ethnicity, school-age children in the household, and other structural indicators suggested that those did not have a significant relationship with the endogenous variables. They were, therefore, not included in the final hypothesized model.

Analysis

The hypotheses put forward by this study were tested through a structural equation model estimated in LISREL 8.8 (Joreskog & Sorbom, 2006). Before conducting the main analysis, correlations and asymptotic covariances for the weighted variables were computed in PRELIS. Because some of the variables (particularly *community-oriented online participation* and *civic participation*) were right-skewed, weighted least-squares estimation procedures were used.

The hypothesized structural model is presented on Figure 1. It includes the paths suggested by Hypotheses 1 through 6 as well as those from controls to endogenous variables. The model also incorporates paths from each of the three storytelling-network measures to off-line civic engagement, because those are core relations proposed and tested in previous CIT studies (Kim & Ball-Rokeach, 2006a).

The significance of individual paths and the global fit of the model to the observed data were used to determine whether the hypotheses were supported. The alpha level determining significance for individual path coefficients was set at .05. To further examine the patterns of influence between online and off-line participation, a path from *civic participation* to *COIP* was added to the hypothesized model. The goodness of fit of the augmented model along with the path coefficient and its standard error were used to assess the direction of influence between the two forms of participation.
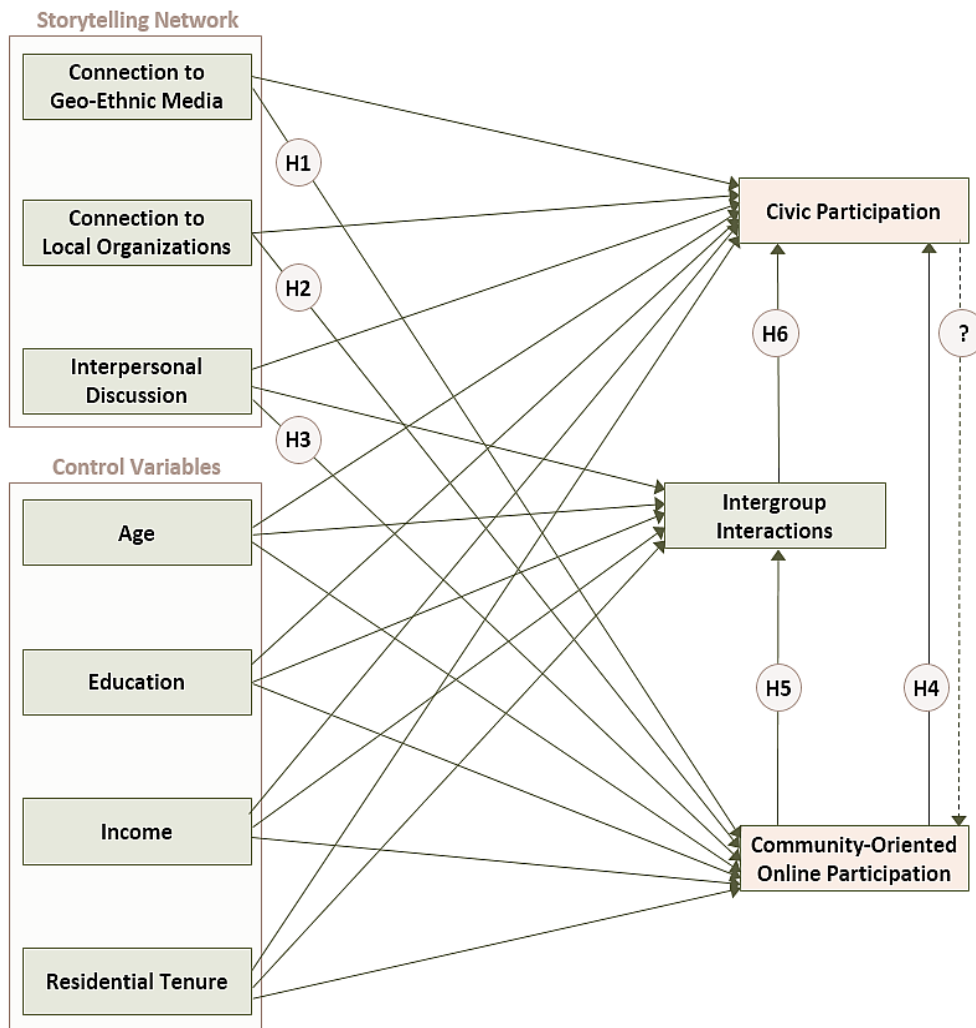

Figure 1. Theoretical model—predictors of community-oriented Internet participation.

Results

Preliminary Analysis

Before estimating the model, the data set was pre-processed in PRELIS. Measurement models for the composite indexes were estimated in LISREL 8.8 as discussed in the previous section. To obtain results representative of the population under study, post-stratification weighting of the data was applied. Weights were calculated based on the ethnicity and age distributions of the city's population as reported in 2010 U.S. Census data (U.S. Census Bureau, 2011). Seven cases had missing data for variables used in the analysis. Missing values were replaced through multiple imputation in PRELIS. The correlation matrix for the variables included in the analysis is shown in Table 1.

Primary Results
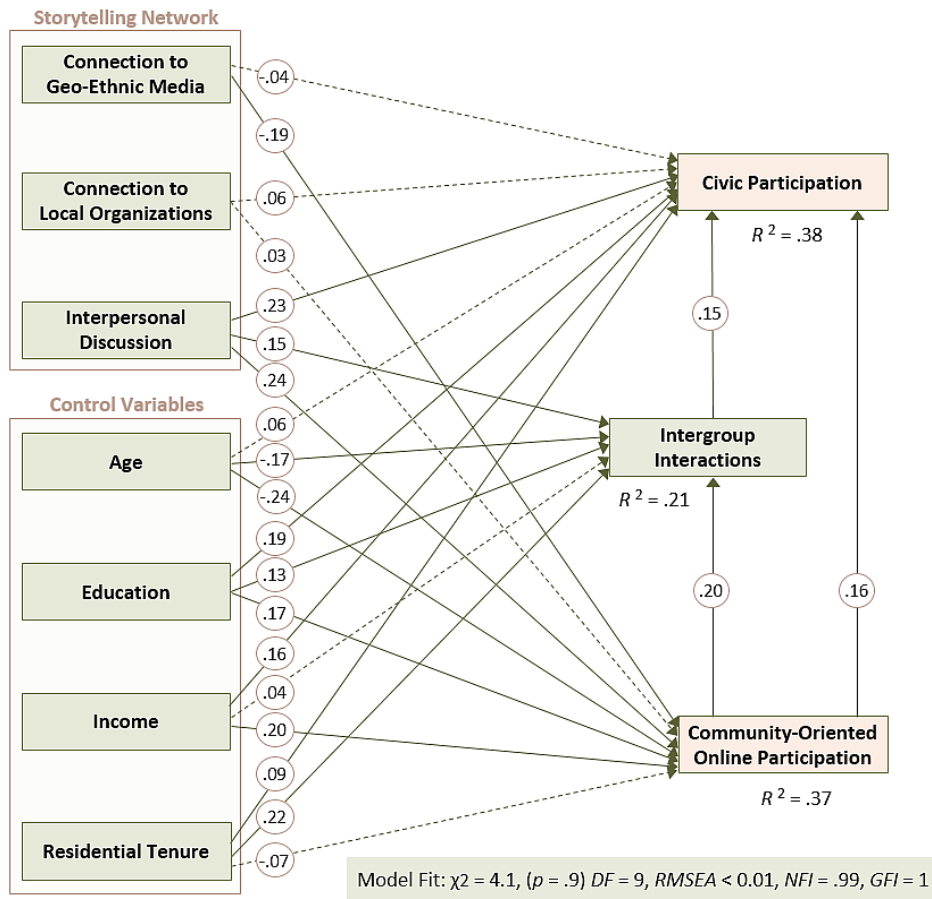
Figure 2. Structural model—predictors of community-oriented Internet participation.
Note: Nonsignificant paths are presented with dotted lines.

Global Fit of the Model

Figure 2 presents the coefficients for the structural model used to test the hypotheses of this study. The global fit of the model was good, with a nonsignificant chi-square statistic ($\chi^2 = 4.1$, $p = .9$, $DF = 9$), indicating that the reconstructed and observed covariance matrices for the model were fairly similar. The ratio of chi-square to degrees of freedom was satisfactory: $\chi^2/DF = .45$ (Wheaton et al., 1977). The goodness-of-fit index (*GFI*), adjusted goodness-of-fit-index (*AGFI*), comparative fit index (*CFI*), and normed fit index (*NFI*) were all close to 1 (*GFI* = 1, *AGFI* = .99, *CFI* = 1, *NFI* = .99). The root mean square error of approximation was also satisfactory (*RMSEA* < .01).

Table 1. Zero-order Correlations Between Endogenous and Exogenous Variables in the Analysis.

	Civic Participation	C-O Online Participation	Intergroup Interaction	Interpersonal Discussion
Civic Participation	1			
C-O Online Participation	.393	1		
Intergroup Interaction	.364	.334	1	
Interpersonal Discussion	.404	.280	.265	1
Geo-ethnic Media Use	-.216	-.396	-.242	-.102
Community Organizations	.259	.197	.190	.309
Respondent Age	-.003	-.352	-.156	.053
Respondent Education	.375	.317	.205	.083
Respondent Income	.401	.400	.239	.170
Residential Tenure	.163	-.128	.156	.239

	Geo-ethnic Media Use	Community Organizations	Age	Education	Income	Tenure
Geo-ethnic Media Use	1					
Community Organizations	-.230	1				
Respondent Age	.389	-.013	1			
Respondent Education	-.176	.111	.030	1		
Respondent Income	-.238	.197	-.146	.476	1	
Residential Tenure	.076	.092	.373	-.082	.026	1

All correlations in the table greater than .10 are significant at *p* < .05

Table 2. Direct, Indirect and Total Effects: COIP, Civic Participation, and Intergroup Interaction.

Variable	Direct effect on COIP	Direct effect on civic participation	Direct effect on intergroup interactions	Indirect effect on civic participation	Total effect on civic participation
Hypothesized model					
C-O online participation	—	.16 **	.20 **	.03 *	.19 **
Intergroup interaction	—	.15 **	—	—	.15 **
Interpersonal discussion	.24**	.23 **	.15 **	.07 **	.30 **
Geo-ethnic media use	−.19**	−.04	—	−.04 **	−.08
Community organizations	.03	.06	—	.01	.06
Respondent age	−.24**	.06	−.17 **	−.07 **	−.01
Respondent education	.17**	.19 **	.13 *	.05 **	.24 **
Respondent income	.20**	.16 **	.04	.04 **	.20 **
Residential tenure	−.07	.09 *	22 **	.02	.11 *
Revised Model					
C-O online participation	—	.16 **	.21 **	.03 *	.19 **
Intergroup interaction	—	.15 **	—	—	.15 **
Interpersonal discussion	.23**	.25 **	.15 **	.07 **	.31 **
Geo-ethnic media use	−.19**	—	—	−.04 **	−.04 **
Community organizations	—	—	—	—	—
Respondent age	−.27**	—	−.18 **	−.08 **	−.08 **
Respondent education	.18**	.21 **	.15 *	.06 **	.26 **
Respondent income	.19**	.16 **	—	.04 **	.19 **
Residential tenure	—	.11 **	23 **	.03 **	.15 *

p < .05   **p* < .01

Individual Path Coefficients

Table 2 shows direct, indirect, and total effects for the paths included in the model. The estimated path coefficients provided support for four of the six hypotheses tested here. The two unsupported hypotheses were Hypotheses 1 and 2, which posited that COIP would be positively predicted by geo-ethnic media use ($\gamma = -.19$, $SE = .05$, $p < .01$) and connections to local organizations ($\gamma = .03$, $SE = .04$, $p > .05$).

As suggested by Hypothesis 3, a significant path existed between interpersonal discussion and community-oriented online participation ($\gamma = .24$, $SE = .04$, $p < .01$). Furthermore, COIP predicted intergroup interactions ($\beta = .20$, $SE = .06$, $p < .01$) and civic participation ($\beta = .16$, $SE = .05$, $p < .01$) in accordance with Hypotheses 4 and 5. Civic participation was also predicted by intergroup interactions ($\beta = .15$, $SE = .05$, $p < .01$), as proposed in Hypothesis 6.

Three of the control variables—age, education, and income—were significant predictors of online participation, while residential tenure only predicted intergroup interactions (see Figure 2 and Table 2 for specific coefficient sizes).

Overall, the model explained 37% of the variance in COIP and 38% of the variance in civic participation.

Post Hoc Analyses

Model Revision

Using LISREL 8.8, a revised model was estimated by deleting nonsignificant paths from the initial theoretical model. This did not change the global fit significantly ($\chi^2 = 12.3$, $p = .95$, $DF = 22$, $GFI = .99$, $AGFI = .98$, $CFI = 1$, $NFI = .99$, $RMSEA < .01$) with $\Delta\chi^2/\Delta DF = .63$.

The coefficients for all remaining paths were significant, and their sizes did not change much between the hypothesized and revised models. The direct, indirect, and total effects for this more parsimonious model are presented in Table 2.

Additional Tests

To explore the direction of influence between COIP and civic participation, two additional models were estimated. One reversed the direction of the path between online and off-line participation. The model fit here ($\chi^2 = 15.2$, $p = .85$, $DF = 22$, $GFI = .99$, $AGFI = .98$, $CFI = 1$, $NFI = .99$, $RMSEA < .01$) was slightly worse than that for the initial model, but still very good. The coefficient size for the path between civic participation and COIP was significant ($\beta = .14$, $SE = .05$, $p < .01$).

The second model tested contained both paths between off-line and online participation to assess the possibility of a bidirectional relationship. The model fit ($\chi^2 = 12$, $p = .94$, $DF = 21$, $GFI = .99$, $AGFI = $

.98, *CFI* = 1, *NFI* = .99, *RMSEA* < .01) remained good. The path from online to off-line participation was significant (β = .21, *SE* = .1, *p* < .05), and that from off-line participation to COIP was not (β = −.06, *SE* = .12, *p* > .05).

In both models, the significance of all other paths that were not modified remained unchanged.

Discussion

The goal of this study was to investigate community-oriented Internet participation in its relationship with off-line civic activities and levels of integration into a local communication infrastructure. We added two new variables—*community-oriented Internet participation* (COIP) and *intergroup interaction* intensity—to the traditional CIT model (see Figures 1 and 2).

Based on communication infrastructure theory (Kim & Ball-Rokeach, 2006a; Matei & Ball-Rokeach, 2003), we proposed that COIP would be predicted by individual connections to micro- and meso-actors in the local storytelling network (H1–H3). We further posited that more community-oriented online activities would lead to higher levels of civic participation and intergroup interactions (H4–H6).

The results of our analysis partly supported the anticipated structure of relationships between participation and local communication resources. As expected, interpersonal discussion was a key predictor of both traditional and online participation (H3). COIP predicted civic engagement both directly (H6) and indirectly through intergroup interaction (H4, H5). The analyses aimed at better understanding the relation between off-line engagement and COIP were not conclusive, but provided some support for the hypothesized direction of influence (from online to traditional participation). The reverse path proved to be nonsignificant in a post hoc model estimation testing for a more complex bidirectional influence pattern.

These findings highlight the importance of studying a range of goal-oriented digital forms of engaging with local issues. CIT research has previously examined the Internet as one communication resource that—along with media, interpersonal, and organizational connections—shapes the community discourse and provides a shared understanding of local challenges and priorities. The research presented here suggests that online platforms and activities also should be incorporated into this theory as a mode of participation complementing more traditional indicators of civic engagement.

Local interaction patterns across ethnic lines are another key factor included in the expanded communication infrastructure model tested here. In a multiethnic community, deliberative practices and common initiatives require regular contact among members of all ethnicities. The intergroup conversations within a residential area may therefore contribute to local levels of civic participation over and above the effect of interpersonal discussion in general.

Contrary to expectations based on previous research, H1 and H2 were not supported here. The scope of individual connections to local organizations had no effect on either off-line or online participation. Geo-ethnic media use did not significantly affect civic engagement, and it was a negative

predictor of community-oriented Internet participation. One plausible explanation for this comes from the nature of the study area selected for the analysis—a linguistically and ethnically diverse community experiencing a lack of local news and information. Like many similar neighborhoods, this city affords scarce opportunities for engagement, even to organizational members and heavy news consumers.

This situation is exacerbated by recent developments in U.S. media and society. The economic downturn combined with existing problems in funding journalism has resulted in a widespread decline of community news (Downie & Schudson, 2009; Waldman, 2011). Small local venues in particular were forced to drastically cut down original reporting and rely heavily on news wires. Previous research in multiethnic communities uncovers similar trends. Analyzing geo-ethnic publications from predominantly Asian and Latino neighborhoods, Lin and Song (2006) found that local coverage was much less prominent than international news and stories from the wire services.

Local news is essential for community building and democratic participation (Ball-Rokeach et al., 2001; Delli Carpini, 2004), but our respondents seem to have limited opportunities to connect to media that produce stories about their community. We have consequently conducted two waves of media monitoring and a series of focus groups with Asian, White, and Hispanic participants from the area. Findings from the monitoring of three Chinese, two English, and one Spanish daily newspapers covering the neighborhood (Chen et al., 2011) indicate that, after recent cutbacks in local bureaus and reporters, neither geo-ethnic nor regional or mainstream media provides critical coverage of community issues and events. Focus group discussions also suggest that residents can find local information through conversations with family or neighbors, but rarely obtain it from news media. This could partly explain why interpersonal and intergroup communication promotes engagement, while connections to local media may have no effect on—or may even suppress—participation.

Findings related to the role of local organizations in community building were similarly a cause of concern. Residents did not report many connections with the nonprofits in the area. The connections that they did have did not seem to enhance participation in traditional or online civic activities. One possibility not explored in detail here is that organizational membership may have an indirect positive impact on civic engagement by increasing the levels of interpersonal communication among residents. The scope of connections to local organizations had a significant positive correlation with interpersonal discussions in the neighborhood ($r = .29$, $p < .01$), controlling for respondent education, income, and age.

Another possible explanation is that residents in the study area are not connected to the type of "politically meaningful" (Uhlaner, Cain, & Kiewiet, 1989) organizations that are more likely to facilitate civic engagement. Based on our survey results, community members typically are affiliated with religious and sports or recreational groups. Although churches have demonstrated effects on enhancing civic participation (Jones-Correa & Leal, 2001; Wong, Lien, & Conway, 2005), the extent to which sports organizations have the same capacity remains to be investigated.

We note several limitations of this study that might be addressed in future research. This analysis focused on a single community. Further investigations may expand and validate our findings through a comparative cross-area investigation of local participation. Due to space considerations, this article does not report results from more detailed analyses unpacking the engagement patterns within each ethnic

group. Another study focusing on paths to civic participation within each ethnicity is currently under development.

Even though the use of structural equation modeling allows us to make plausible causal inferences from cross-sectional data, the patterns of civic engagement discussed here need to be studied over time. Future work should seek to collect and analyze longitudinal data confirming the results presented in this article.

Although we are optimistic about the opportunities provided by new media, the patterns uncovered by this study are not unproblematic. Our results indicate that online participation enhances intergroup dialogue and civic engagement. Yet other findings are less encouraging. The social groups that are already disconnected from local civic practices and communication resources may remain excluded from online engagement. Analyzing the data for this study, we found Internet participants in all ethnic groups and age categories. Yet the elderly and those with lower education levels and socioeconomic status were—as is often the case (DiMaggio & Hargittai, 2001)—less likely to look into digital avenues for participation.

One question that remains to be explored is whether certain segments of the population are completely disengaged or whether there are still paths to engagement relying on interpersonal connections with socially active individuals. Future research may focus on the social networks and communication ecologies of residents. A study of this kind may investigate whether civically active online participants are clustered in groups or dispersed among population segments and able to serve as a resource for less engaged residents. Exploring this in the larger context of a neighborhood storytelling network may extend our understanding of both community structures and patterns of democratic participation.

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