
LOCAL NEWS, SOCIAL INTEGRATION, AND COMMUNITY PARTICIPATION: HIERARCHICAL LINEAR MODELING OF CONTEXTUAL AND CROSS-LEVEL EFFECTS

By Hye-Jin Paek, So-Hyang Yoon, and Dhavan V. Shah

This study explores the cross-level interactions of local media use with individual and community factors, in particular, local print news use, using a multi-level analysis of community participation. Findings show local print news readership, an essential constituent of communal solidarity, increases the likelihood of community participation both at the individual level and as a function of readership in communities with higher levels of social interaction. Cross-level effects are also observed between individual-level differences in social interaction and home ownership and contextual variation in print news readership.



Although many scholars embrace the premise that individual differences in local news consumption may condition the influence of contextual factors on community engagement, the prevalence of individual-level data combined with the methodological and diagnostic complexities of multi-level analysis have limited formal testing of this proposition.¹ As a consequence, theorizing on contextual effects involving mass media—best illustrated by Pan and McLeod's "multi-level framework" and hinted at by Anderson's notion of "imagined community"—has far outstripped the pace of empirical research.²

The complex interplay of individual factors and community context in shaping social behaviors, such as the interactions between forms of local media use and contextual variables (e.g., social stability and connectedness), has been outlined and tested in a few studies.³ However, extant research suffers from certain limitations. First, it tends to focus on the interactions between individual level news consumption and community level social integration rather than the role of community level news use in creating a local culture that serves as a resource for those who do not consume public affairs content through network relations.⁴ Yet prior theorizing implies that newspapers, in particular, function both as a source of community solidarity for readers and as the seat of local

Hye-Jin Paek is an assistant professor in the Grady College of Journalism and Mass Communication at the University of Georgia; So-Hyang Yoon is an assistant professor in the Department of Communication at Pusan National University, South Korea; and Dhavan V. Shah is a professor in the School of Journalism and Mass Communication and the Department of Political Science at the University of Wisconsin-Madison.

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print culture for socially integrated community members who are not news readers, *per se*.⁵

Second, past studies consider contextual variables at the same level as individual variables, relying on hierarchical regression or weighted regression models despite cautions against treating contextual properties as analytically equivalent to individual differences.⁶ By merging different levels of analysis, empirical tests run the risk of ecological or atomistic fallacies and may produce spuriously significant results.⁷ Analyses must disentangle the effect of geographical context from individual sources of influence to avoid these fallacies.

Building upon the understanding of communication as “cross-level” phenomena involving processes operating at individual and contextual levels, this research explores the relationship of local print news use and social integration with community participation.⁸ Given the centrality of local print news use in creating the community media ecology, we treat it as both an individual and contextual factor.⁹ Differences in local print news use at both levels are expected to condition the effects of individual and contextual variation in two indicators of community integration—home ownership and social interaction.¹⁰ Using the geo-coded 1999 and 2000 DDB Life Style survey datasets for hierarchical linear modeling, this paper delineates the predictors of community participation across levels of analysis.

Literature Review

Social Context and Community Participation. Although social scientists still debate its definition, in general the term *community* represents “human relationships based on spatial propinquity.”¹¹ Stamm and Fortini-Campbell¹² define community as a multi-dimensional concept that involves places of physical boundaries, social products of an existing structure containing businesses and institutions of different kinds, and social process emphasizing efforts to create common goods. Past explication of the concept of community at the contextual and the individual levels depicts community as “large enough to contain the multiple levels of action that are meaningful for understanding integration.”¹³

Community participation, then, most closely intersects with concepts such as *civic engagement*¹⁴ and *community involvement*.¹⁵ These concepts emphasize participation in collective activities revolving around the construction and sustenance of the broader community.¹⁶ Accordingly, we use the term community participation to encompass a wide variety of communal and civic activities, though we exclude solitary acts such as writing letters and contacting officials. Rather, we focus on behaviors that reflect membership in collective community enterprises, such as church attendance, club membership, volunteerism, and community work.

Two factors are known to be associated with participation in community life above and beyond the effects of demographics: community integration and local media use.¹⁷ Community integration is understood as an attachment to the locality, encompassing both structural factors such as home ownership and relational factors such as social networks.¹⁸ Some scholars take this concept a step further, including psychological factors

that reflect connections to the community under the rubric of *community ties*.¹⁹ We opt for a more conservative approach and retain the focus on structural and relational factors, attending to levels of home ownership and rates of social interaction, respectively.

Both of these variables likely have individual *and* contextual influences on community participation, effects that prior research may have confounded due to analytical limitations. Accordingly, we consider whether variables thought to have an individual-level influence on community participation also have distinct aggregate-level effects. For example, individual-level indicators of structural ties to the local community, such as home ownership, have been positively related to civic participation.²⁰ Research has also found that a more stable community—one with higher rates of home ownership—provides an environment more conducive to engagement in a civic life.²¹

Likewise, social interaction helps build a sense of community, creates opportunities for recruitment, and consequently encourages deeper engagement in a public life.²² Of course, a community with a high rate of social interaction, as compared to those with lower rates, should see more participation simply as a by-product of rates of socializing.²³ This same logic applies to print news use when understood in terms of Anderson's "imagined community" thesis.

Local News Readership and the "Imagined Community." Consumption of public affairs content, particularly print news readership, has been among the most common predictors of civic participation,²⁴ community integration,²⁵ and community ties.²⁶ Hard news reading has consistently yielded positive relationships with involvement in community life.²⁷ Likewise, Stamm and his colleagues have found positive associations between local newspaper use and various types of community integration.²⁸ Whether this is the result of people's attachment to the community spurring information seeking or local news consumption stimulating community integration remains unclear.

Recent developments in this line of research reveal that content-specific effects may take precedence over medium-specific ones. Empirical evidence has documented the usefulness of separating local from national news consumption, with local content consumption being particularly important for community participation.²⁹ These findings suggest that the use of local public affairs content, especially print news, has positive effects on political discussion and community participation.³⁰

Although many studies have looked at the associations between civic participation and media, the connection between communication and a community life requires further explication. Anderson's notion of the *imagined community* proves helpful for understanding the ways in which mass communication edifies residents' sense of community.³¹ Anderson recognizes that representations in mass media help form citizens' understanding of their community.³² Most members of a community never know many of their fellow citizens, but come to understand their community, its membership, and its norms through information obtained directly or indirectly via mass media. As Scherer similarly

asserts, "media are creating bonds of style, age, and interest that transcend the particularities of ... background."³³

Essentially, readers begin to conceive of the community as a representative body due to the simultaneous consumption or "imagining" of the stories in local newspapers. Local media content seems particularly likely to convey a "common life" and generate a "local identity."³⁴ Individuals who attend to local media content seem more likely to participate, especially "if the community is represented as stable and connected since this likely reinforces norms of responsibility, reciprocity, and efficacy."³⁵ The assumption is that contextual features of the community make their way into media representations and that people who consume local news context develop a sense of communal solidarity and responsibility.

Likewise, communities that have higher levels of local hard news consumption seem more likely to accrue civic benefits. The penetration of print news reading as a norm across a community is a precondition for the formation of a local print culture that then functions as a broader community resource. That is, localities that have high levels of print news consumption produce an information climate that fosters engagement in community life even among non-readers who have a higher likelihood of learning about community events and getting recruited into community activities, especially if they are part of established social networks.

As this suggests, there are two sets of cross-level interactions that should be explored when examining the relationship of print news use and community integration.³⁶ Individual differences in local media use may interact with contextual differences in community integration (e.g., levels of home ownership and social interaction) to convey local norms, foster community solidarity, and thereby increase engagement. Conversely, individual differences in community integration may interact with contextual variation in rates of print news readership to channel the effects of the local print culture. Pan and McLeod advance these possibilities in their extension of theory-oriented contextual research in communication.³⁷ This approach contends that a genuine process of contextual analysis involves consideration of a range of interactions "among individuals within a particular social structure." This not only requires a multi-level framework, but also demands appropriate analytic techniques.

Contextual Effects and Multi-level Analysis. On the basis of the assumption that individuals are influenced by various factors in their social surroundings, Burbank defines contextual effects as "the systematic variation in the behavior of individuals associated with variations across geographic settings."³⁸ Formal analysis of contextual effects requires attention not only to the extent to which individuals are influenced by their social surroundings, but also whether individual factors interact with contextual features to generate effects.³⁹ Various linear models have been proposed for such hierarchical data analysis, allowing insights about direct and conditional effects across levels.⁴⁰

Sampson's research offered the first highly applicable strategy for studying community engagement at multiple social levels.⁴¹ He empirically tested the basic systemic multi-level model by examining residential

tenure at both the individual and community levels. The systemic model of community social organization conceptualizes the local community as a complex system of friendship and kinship networks and formal and informal associational ties rooted in family life and ongoing socialization processes.⁴² In his two-stage analysis at the macro- and micro-level of community, Sampson found that both individual length of residence and neighborhood residential tenure were significantly and positively associated with most indicators of community attachment and social activity.⁴³

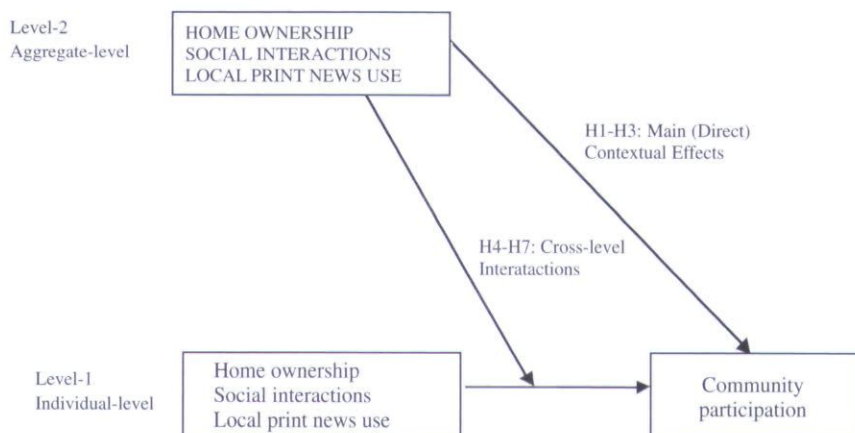
Adopting Sampson's multi-level system model, Kang and Kwak extended his work to examine the relationship between media and civic participation.⁴⁴ They found the use of local TV news was positively related to community participation among those who stay longer in the community. This work moved forward the arguments advanced by Shah and his colleagues, who explored the interactions of individual media use and social context.⁴⁵ However, both studies, along with Sampson's model, share the methodological shortcoming of including individual and contextual variables at the same level of analysis, potentially resulting in significant underestimation of variability across levels.⁴⁶

More recent work by Raudenbush and his associates has pioneered hierarchical linear modeling techniques, which offer a more rigorous statistical procedure for capturing multi-level effects.⁴⁷ We adopt this approach in the present study. We treat Metropolitan Statistical Area (MSA) as the unit of analysis at the aggregate level.⁴⁸ MSA, defined according to published standards that are applied to Census Bureau data, is a population hub that has a high degree of economic and social integration and often stands for a proxy unit of localized mass media system.⁴⁹ In the absence of more refined geographical and communal taxonomy, metropolitan context provides a viable proxy for local context and media market. The metropolitan area also corresponds to many conceptualizations of community and reflects aspects of Anderson's notion of imagined community. While the metropolitan statistical area represents a relatively large geographic area, it is more precise than the use of state of residence as the aggregate unit, as has been the case in some past research on social capital and community participation.⁵⁰ Residents within an MSA share not only common culture and values, but also businesses and institutions such as local media and churches.⁵¹

Based on the discussions and literature review above, we offer the following theoretical model (see Figure 1). In addition to the positive individual-level relationships of home ownership, social interaction, and local print news readership with community participation, this model highlights two potential routes through which contextual variables influence individual differences in community participation: (1) through direct contextual effects on individual behaviors of community participation and (2) through the interaction of contextual variables with individual differences. While home ownership has drawn consid-

Theoretical Model and Hypotheses

FIGURE 1
An Hypothesized Multi-level Model of Community Participation



Note: The capitalization of the variables names (at aggregate-level) denotes contextual variables that were measured as aggregation of corresponding individual-level variables across metropolitan contexts.

erable attention from contextual effect studies as a crucial contextual variable, indicating community belonging and attachment,⁵² social interaction gives a fundamental basis through which contextual influences are spread and processed among community members. Thus, the following hypotheses for contextual effects and cross-level interactions are made:

H1: Community participation will be greater in communities with higher home ownership

H2: Community participation will be greater in communities with higher social interaction.

H3: Community participation will be greater in communities with higher local print news use.

H4: In communities with higher local print news reading, the effects of individuals' home ownership on community participation will be stronger.

H5: In communities with higher local print news reading, the effects of individuals' social interactions on community participation will be stronger.

H6: In communities with higher home ownership, the effects of individuals' local newspaper reading on community participation will be stronger.

H7: In communities with higher social interactions, the effects of individuals' local newspaper reading on community participation will be stronger.

The present study is based on a secondary analysis of the DDB Life Style survey data conducted in 1999 and 2000. To examine the cross-level effects between individuals and local contexts, we merged 1999 and 2000 data to ensure a sufficient number of aggregate-level and individual-level samples.

The Life Style Study relies on a stratified quota sampling technique. First, researchers acquire the names and addresses of a large number of Americans from commercial list brokers. Via mail, millions of people are asked if they would be willing to participate periodically in mail or telephone surveys for incentives. Demographically balanced samples are then drawn from among the more than 500,000 people who agreed to participate (a small fraction of those contacted). In the case of the Life Style Studies, the starting sample of 5,000 is adjusted within the subcategories of race, gender, and marital status to compensate for expected differences in return rates. In addition, the sample is drawn to approximate the distribution of the population in terms of household income, population density, age, and household size within each of the nine census regions.⁵³

The use of merged data enlarged the respondent pool and thus enabled the analyses of contextual effects in relation to measures of community participation. This study employs the Metropolitan Statistical Area (MSA) as the local context, which is the unit of analysis for the examination of aggregate-level variances. Each metropolitan area has at least one urbanized area of 50,000 or more inhabitants. A metropolitan area indicates the existence of economic ties (as measured by commuting and media consumption) with the central counties of that area. Although metropolitan area may not represent the entire local population, it is considered a fair representation of the social and economic linkages between urban cores and outlying, integrated areas⁵⁴ with a shared media system. It is on this basis that we consider the metropolitan context as our aggregate-level unit for addressing the role of contextual factors.

Metropolitan contexts with fewer than 15 individuals were excluded to control for the likelihood of distorted contextual estimates. As a result, we have a pooled individual sample size of 3,869 nested in 46 distinct metropolitan contexts.

Measurement. The survey administered by the Life Style Studies includes questions about attitudes, activities, situational aspects, and a battery of media use questions. The current study includes demographic variables (i.e., age, gender, income, education, and race), home ownership, social interaction, and hard news consumption from local newspapers, as well as community participation as the criterion variable. These individual-level variables are aggregated within each community context to represent contextual variables thought to influence the criterion variable and its relationships with the individual-level factors.

Method

Community participation, which refers to participation in civic and community activities, is an averaging index of the following four items ranging from 1 (none in past years) to 7 (at least once a week): "Went to a club meeting," "Attended church or other place of worship," "Did volunteer work," and "Worked on a community project." Exploratory Factor Analysis (EFA) with Principal Component Analysis (PCA) extraction shows that these four items clearly form one factor with 51% of variance explained. After assessing internal consistency among these items by computing Cronbach's alpha ($\alpha = .67$), the four items were averaged into an index of community participation.

Five *demographic variables* serve as control variables: age, gender, household income, educational attainment, and racial minority status. These demographic variables have been shown to have an impact both on civic engagement and community participation to varying degrees.⁵⁵ The mean age of participants was 49.55 (s.d.=15.77), and the pooled sample has a little higher proportion of females (56%) than males (44%). Surveyed on a 15 income-category scale, ranging from "under \$10,000" to "\$100,000 or more," the sample shows a median income range that falls between \$45,000 and \$49,999 (s.d.=4.09). The average educational attainment is college attendance plus some complementary instruction (s.d.=1.20). Race is measured as a dichotomous variable with "white" (77.4%) and "non-white" (22.6%). These five major demographic variables are residualized in our model to achieve both control and model parsimony.

Home ownership is measured with a dichotomous question "whether or not" the respondent owns a home in the community he or she resides in (77% homeowners).

Social interaction is estimated by averaging the frequency of participating in activities pertaining to interpersonal interactions.⁵⁶ The averaging index comprises the following five items: "Went out to lunch at a restaurant (not fast food)," "Went out to dinner at a restaurant (not fast food)," "Gave or attended a dinner party," "Entertained people in my home," and "I spend a lot of time visiting friends." These items are measured with an ordinal scale ranging from "1" (none in past year) to "7" (52 times or more per year). The same procedure used to develop the index of *community participation* was followed to create this social interaction index (i.e., one factor with 51% of variance explained through EFA and Cronbach's alpha = .67).

This study focuses on the role of hard news consumption through local newspaper readership. Based on previous research findings, we distinguish hard news use from soft news consumption because the former is found to be more closely related to citizen participation than the latter.⁵⁷ Accordingly, our measure of local print news use is constructed on the condition that the respondent reads certain sections of the newspaper. First, an additive index of hard news reading is created with summation of dichotomous items concerning reading of the news section, business news, and editorial section. This "hard news" index is then multiplied by another dichotomous item that asks whether respondents read the local newspaper or not. This results in a variable that conveys the extent of hard news reading via the local newspaper on a four-point scale

ranging from "0" (not read at all) to "3" (read most of the news in local newspaper).

Analytic Strategy. The current study employs Hierarchical Linear Modeling (HLM) performed with an estimation of restricted maximum likelihood across the two levels (individuals nested in metropolitan contexts). HLM is often more appropriate than ordinary least squares regression methods (OLS) because the former captures contextual variation across communities by examining variances at the aggregate-level, which the OLS procedure cannot perform automatically.⁵⁸ This modeling produces fixed effects coefficients at both levels and random components at the aggregate level.⁵⁹ Although effects and variability at the aggregate-level are present, individual-level predictors can still be interpreted in the same way as is in ordinary least square regression.⁶⁰

Table 1 presents the results of our hierarchical linear model with the effects of demographic variables residualized. Consistent with the findings documented in previous studies, the three individual-level variables in our model are statistically significant predictors of community participation.⁶¹ Those who own homes and have more secure positions in their communities are more likely to engage in community activities ($\gamma_{10} = .20, p < .001$). Likewise, there is a positive association between social interaction and community participation ($\gamma_{20} = .36, p < .001$). The more social activities people engage in with others, the more likely they are to participate in community life. Local print news use is also associated with community participation ($\gamma_{30} = .09, p < .001$). Thus, all hypothesized relationships were tested with these predictors operating in the model and with demographic variables controlled in the analysis.⁶²

Aggregate-level (Contextual) Effects. H1 through H3 concern whether contextual factors such as rates of home ownership, social interaction, and local print news consumption in a community are positively related to individuals' community participation. The results show that aggregate home ownership is positively related to community participation. In other words, the mean level of individual residents' community participation is higher in metropolitan contexts where home ownership rates are higher ($\gamma_{01} = .86, p < .001$). This does not hold for the contextual measures of social interaction or local print news use. These results only provide support for H1.

In addition, our final estimation of variance components (lower part of Table 1) indicates some aggregate-level effects on the dependent variable are unaccounted for by our model ($U0 = .004, \chi^2(42) = 62.32, p < .05$). Thus, it is possible that some other aggregate-level predictors that are not included in our model may have an impact on individual-level differences in community participation. The impact of contextual factors on the mean score of community participation verifies that we should not assume every community starts with the same level of participation.

Results

TABLE 1

Estimates of Contextual Effects and Cross-level Interactions on Community Participation

		Coefficient	SE	t-ratio
Fixed Effects				
<u>Contextual Effects</u>				
Intercept	(γ_{00})	2.42	.02	115.25***
(c) HOME OWNERSHIP	(γ_{01})	.86	.36	2.42*
(c) SOCIAL INTERACTION	(γ_{02})	-.01	.14	-.10
(c) LOCAL PRINT NEWS USE	(γ_{03})	-.01	.24	-.03
<u>Individual-level Effects</u>				
Home Ownership	(γ_{10})	.20	.05	4.01***
Social Interaction	(γ_{20})	.36	.02	17.19***
Local Print News Use	(γ_{30})	.09	.02	4.51***
<u>Cross-level Interaction</u>				
(c) LOCAL PRINT NEWS x home ownership	(γ_{11})	-.02	.46	-.04
(c) LOCAL PRINT NEWS x social interactions	(γ_{21})	.47	.21	2.24*
(c) HOME OWNERSHIP x local print news	(γ_{31})	.42	.24	1.74#
(c) SOCIAL INTERACTION x local print news	(γ_{32})	.31	.15	2.19*
Variance Components				
		Variance Component	s.d.	Chi-Square (d.f.)
INTRCPT1	(U0)	.00	.07	62.32 (42)*
(c) HOME OWNERSHIP	(U1)	.01	.12	42.01 (42)
(c) SOCIAL INTERACTIONS	(U2)	.00	.06	47.42 (44)
(c) LOCAL PRINT NEWS USE	(U3)	.00	.05	46.40 (43)
Deviance		12361.55		
Number of estimated parameters		11		

Notes: Table entries are restricted maximum likelihood estimates.

The notation of (c) and the capitalization of the variable names denote contextual variables that were measured as aggregation of corresponding individual-level variables across metropolitan contexts.

N (sample size of MSA) = 46, *n* (individual sample size) = 3,867

$p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Cross-level Interactions. To further explore the relationship of these contextual variables with participation, we test **H4** through **H7**, shown in the two sets of cross-level interactions (see Table 1). The results reveal that aggregate-level local print news use interacts with individual-level indicators of social interaction ($\gamma_{21} = .47$, $p < .05$). This implies that the size of the effect of the individual social interaction on community participation becomes even larger in communities where norms for local print news readership are higher. In addition, contextual variation in home ownership and social interactions condition the relationship between individuals' local print news consumption and community participation ($\gamma_{31} = .42$, $p = .09$ and $\gamma_{32} = .31$, $p < .05$, respectively). Apparently, the influence of indi-

viduals' local print news use on community participation is even stronger in communities where average home ownership is higher and social interactions are more prevalent. These results provided support for H5, H6, and H7, but not H4.

The results reported above add considerably to what we know about contextual effects on community participation, particularly clarifying the role of local news in the dynamic. On top of the statistically significant contributions of individual differences in home ownership, social interaction, and local news reading—and with the variance explained by demographic variables residualized—the results clearly demonstrate aggregate effects and cross-level interactions of community integration and newspaper consumption on community participation. Most revealing among the findings is that aggregate-level local print news consumption moderates the effect of social interaction, as the association between socializing and participation is stronger in communities where local print news readership is higher. This suggests that socially active, connected individuals become more likely to participate in public life when they live in communities with a strong local print news culture. Notably, this effect is distinct from the contextual effects of home ownership and the alternate set of cross-level interactions involving aggregate-level community integration and individual-level news consumption.

The extent of community newspaper reading at the aggregate level is believed to reflect the vibrancy of the local print culture. This climate of information and opinion may encourage learning and deliberation about local events and issues among newspaper nonreaders as these ideas flow through interpersonal networks. As Chaffee noted, "the more people talk with other people about information from the mass media, the greater is the total impact of the media on social action."⁶³ Said another way, news information often reaches people through interpersonal communication. The more vibrant the local print culture, the greater the likelihood that socially active people will learn about and discuss local issues even if they did not directly encounter them in the news, an aggregate level two-step flow.

We also observed the direct and moderating effects of contextual variation in social integration, confirming past findings. Higher rates of home ownership in a metropolitan context indicate greater stability in community life. Since purchasing a home contributes to community attachment and residential stability, localities in which average home ownership is high are likely to have more integrated and involved citizens.⁶⁴ The fact that local news readership plays a more pronounced role in stimulating and facilitating residents' civic activities in such communities suggests two possibilities: (1) people who live in stable communities are more likely to pay attention to local newspaper content because they grow attached to their communities, and (2) consumption of local news in communities with high rates of home ownership is likely to foster a qualitatively different impression of the imagined community than local news consumption in less stable communities.⁶⁵

Discussion

We interpret these two findings as further support for the contention that the structural and relational context within which individuals reside has implications for the consequences of local news consumption.⁶⁶ These accounts also help explain the moderating role of contextual variation in social interaction on the relationship between local news reading and community participation, a relationship that grows stronger in communities with higher mean levels of socializing. Individuals who live in more sociable communities may be motivated to read the local paper for social interaction purposes and, as a result, grow more engaged in community life. Or it could be that local news reading in communities with vigorous social interactions generates a different image of the community than local news reading in less convivial localities.

These insights are gained by applying formerly underutilized multi-level tests that complement extant communication theories on the role of community context on citizen participation. The application of hierarchical linear modeling techniques to examine the connections among communication, context, and community life allows us to test both sets of cross-level interactions suggested by prior theorizing on community participation: the moderating role of aggregate community integration on local news readers and the moderating role of aggregate local news readership on socially integrated individuals.

This study offers a more refined framework for further communication research with the perspective of a "cross-level discipline." Future studies should delve further into multi-level analyses of contextual effects, particularly as they relate to community-based phenomena such as civic participation. When scholars do so, they could also address some of the limitations of the present study such as our reliance on contextual factors measured by aggregating of individual-level measures. Future research may build on this multi-level analysis, incorporating community-level variables such as political and cultural structure, community size and density, and community tradition, or by incorporating community-level census data into the models.⁶⁷

When testing associations using HLM, studies must locate or collect appropriate types of data that are hierarchical and have individuals nested within higher-level groups. Unlike data in education that have distinctly nested structure (e.g., students nested in classrooms nested in schools nested in districts), there are challenges in collecting cross-sectional data without such hierarchically nested structures. The DDB Life Style data analyzed here is arguably insufficient in the respect that the survey designers did not use multi-stage random sampling. The authors' decision of excluding the metropolitan areas (MSA) with fewer than 15 respondents is also debatable for it can weaken data requirements in that consideration.

The present study also residualized five demographic variables (i.e., age, gender, income, education, and race) to clarify interpretation and model parsimony. Future research may opt to explore how different levels of education, wealth, and diversity operate as contextual factors. Individuals may participate in communities more when they have greater resources, better education, and class homogeneity. Although neglected in

communication studies thus far, further scrutiny of such community characteristics and their interplay with media consumption patterns may advance the understanding of community participation and communicative interactions in varying contexts.

We must end by revisiting a fundamental question concerning multilevel analysis on community life—the matter of gauging and quantifying a *community*. We use MSA as a proxy unit of analysis in which citizens share a local media system. It should be noted that what is important when conducting contextual analysis is not merely employing the smallest available unit, like zip code or census bloc, but how such operationalization corresponds to the investigator's research questions.⁶⁸ In addition to the question about the geographical boundary of context units, the rise of the Internet and the development of "virtual communities" further complicate these issues. Future studies identifying predictors of active community participation are especially encouraged to capture the multi-level associations embedded in facets of social capital such as networks of trust and reciprocity. As this suggests, much remains to be done in exploring the complex interrelationships among communication, context, and community.

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12. Keith R. Stamm and Lisa Fortini-Campbell, "The Relationship of Community Ties to Newspaper Use," *Journalism Monographs* 84 (1983): 2-27.

13. Friedland and McLeod, "Community Integration and Mass Media: A Reconsideration."

14. Michael Hanks and Bruce K. Eckland, "Adult Voluntary Associations and Adolescent Socialization," *Sociological Quarterly* 19 (summer 1978): 481-90; Dhavan V. Shah, "Civic Engagement, Interpersonal Trust, and TV Use: An Individual-level Assessment of Social Capital," *Political Psychology* 19 (September 1998): 469-94; Shah, McLeod, and Yoon, "Communication, Context, and Community."

15. Leo W. Jeffres, David Atkin, and Kimberly A. Neuendorf, "A Model Linking Community Activity and Communication with Political Attitudes and Involvement in Neighborhoods," *Political Communication* 19 (October 2002): 387-421; Stamm and Fortini-Campbell, "The Relationship of Community Ties to Newspaper Use"; Sidney Verba, Kay Lehman Schlozman, and Henry E. Brady, *Voice and Equality: Civic Volunteerism in American Politics* (Cambridge, MA: Harvard University Press, 1995).

16. Civic engagement is conceptualized with the membership in voluntary associations (e.g., PTA, labor union, church clubs, political groups) and current civic activities (e.g., voting, donating money to political candidates, contacting elected officials). See, for example, Hanks and Eckland, "Adult Voluntary Associations and Adolescent Socialization." Similarly, civic participation is defined as volunteer activities, club attendance, and community project work. See, for example, Shah, "Civic Engagement, Interpersonal Trust, and TV Use"; Shah, McLeod, and Yoon, "Communication, Context, and Community."

17. This is not to discount the positive influence of socioeconomic status variables and age on participatory activities that have been consistently confirmed. See, for example, Alberto Alesina and Eliana La Ferrara, "Participation in Heterogeneous Communities," *The Quarterly Journal of Economics* 115 (August 2000): 847-904; Angus Campbell, Philip E. Converse, Warren E. Miller, and Donald E. Stokes, *The American Voter* (Survey Research Center, University of Michigan, New York: John Wiley & Sons, 1960); Seymour Martin Lipset, *Political Man*, expanded edition (Baltimore, MD: Johns Hopkins University Press, 1960/1981); Sidney Verba and Norman H. Nie, *Participation in America: Political Democracy and Social Equality* (New York: Harper & Row, 1972); Verba, Schlozman, and Brady, *Voice and Equality*. We are more concerned here with the differences among more or less established groups of people with respect to their access to information, availability of resources, and group pressure. Thus, we consider demographic factors exogenous to the individual and contextual differences in newspaper use and community integration.

18. Friedland and McLeod, "Community Integration and Mass Media: A Reconsideration"; McLeod et al., "Community Integration, Local Media Use, and Democratic Processes"; Keith R. Stamm and Avery M. Guest, "Communication and Community Integration: An Analysis of the Communication Behavior of Newcomers," *Journalism Quarterly* 68 (summer 1991): 644-57; Keith R. Stamm and Robert J. Weis, "The Newspaper and Community Integration: A Study of Ties to a Local Church Community," *Communication Research* 13 (February 1986): 125-37.

19. See Kasisomayajula Viswanath, Gerald M. Kosicki, Eric S. Fredin, and Eunkyung Park, "Local Community Ties, Community-boundedness, and Local Public Affairs Knowledge Gaps," *Communication Research* 27 (February 2000): 27-50. Community ties are defined as a combination of structural, cognitive, and affective connections to and investment in the community. Stamm and Fortini-Campbell ("The Relationship of Community Ties to Newspaper Use") also capture varying degrees of community involvement, ranging from awareness and attendance of activities, to cognitive orientation toward the community, to sharing the concerns of others and connecting with them.

20. Verba, Schlozman, and Brady, *Voice and Equality*.

21. Robert J. Sampson, "Linking the Micro-and Macro-level Dimensions of Community Social Organization," *Social Forces* 70 (September 1991): 43-64.

22. James Coleman, *Foundations of Social Theory* (Cambridge: Belknap, 1990); William B. Davidson and Patrick R. Cotter, "Sense of Community and Political Participation," *Journal of Community Psychology* 19 (1989): 119-25; Robert Putnam, *Bowling Alone: The Collapse and Revival of American Community* (NY: Simon and Schuster, 2000).

23. John D. Kasarda and Morris Janowitz, "Community Attachment in Mass Society," *American Sociological Review* 39 (June 1974): 328-39.

24. See, for example, Stephen Earl Bennett, *Apathy in America 1960-1984: Causes and Consequences of Citizen Political Indifference* (Dobbs Ferry, NY: Transnational Publishers, 1986); Gary Kebbel, "Strength of Political Activity in Predicting Newspaper Use," *Newspaper Research Journal* 6

(winter 1985): 1-7.

25. See, for example, McLeod et al., "Community Integration, Local Media Use, and Democratic Processes"; Stamm and Guest, "Communication and Community Integration"; Stamm and Weis, "The Newspaper and Community Integration."

26. Stamm, *Newspaper Use and Community Ties*; Stamm and Guest, "Communication and Community Integration"; Stamm and Weis, "The Newspaper and Community Integration"; Stamm and Fortini-Campbell, "The Relationship of Community Ties to Newspaper Subscribing and Use."

27. Robert D. Putnam, "Tuning In, Tuning Out: The Strange Disappearance of Social Capital in America," *Political Science and Politics* 28 (December 1995): 664-83; Robert D. Putnam, "The Strange Disappearance of Civic America," *The American Prospect* 24 (winter 1996): 34-48; Putnam, *Bowling Alone: The Collapse and Revival of American Community*.

28. Stamm and Fortini-Campbell, "The Relationship of Community Ties to Newspaper Subscribing and Use"; Stamm, *Newspaper Use and Community Ties*; Stamm and Weis, "The Newspaper and Community Integration"; Stamm and Guest, "Communication and Community Integration."

29. McLeod et al., "Community Integration, Local Media Use, and Democratic Processes."

30. John P. Robinson and Mark R. Levy, "News Media Use and the Informed Public: A 1990s Update," *Journal of Communication* 46 (spring 1996): 129-35.

31. See Anderson, *Imagined Communities*. While Anderson used the concept of imagined community in order to provide the definitions of nation and nationalism, the concept seems suitable to explain how the meaning of community in this complex modern world becomes blurry and how local media that community members share provide a sense of community belonging.

32. Anderson, *Imagined Communities*.

33. Jacqueline Scherer, *Contemporary Community: Sociological Illusion or Reality?* (London: Tavistock Publications, 1972), 107.

34. Friedland, "Communication, Community, and Democracy"; Phyllis Kaniss, *Making Local News* (Chicago: University of Chicago Press, 1991).

35. Shah, McLeod, and Yoon, "Communication, Context, and Community."

36. Although it can take all shapes, here the term interaction refers to a multiplicative product of two explanatory variables. See Jeffrey M. Wooldridge, *Introductory Econometrics: A Modern Approach*, 2d ed. (Mason, OH: South-Western College Publishing, 2003). It means that the effect of one independent variable on the dependent variable is conditional upon the value of another independent variable. In this paper, we address two kinds of interaction: one is an individual-level interaction and the other a cross-level interaction. Unlike an ordinary linear regression model where such multiplicative product term often produces multicollinearity problems, hierarchical linear models have no such problems dealing with cross-level interaction, because the two variables for the interaction

product (i.e., individual-level variable and group-level variable) come from different populations (i.e., individuals versus group units such as MSA). See Snijders and Bosker, *Multilevel Analysis*. We thank one anonymous reviewer who addressed this issue on the unclear notion of interaction.

37. See Pan and McLeod, "Multilevel Analysis in Mass Communication Research"; Lutz Erbring and Alice A. Young, "Individuals and Social Structure: Contextual Effects as Endogenous Feedback," in *Aggregate Data: Analysis and Interpretation*, ed. Edgar F. Borgatta and David J. Jackson (Beverly Hills, CA: Sage, 1980).

38. Matthew J. Burbank, "How Do Contextual Effects Work?: Developing a Theoretical Model," in *Spatial and Contextual Models in Political Research*, ed. Munroe Eagles (London: Taylor & Francis, 1995).

39. Erbring and Young, "Individuals and Social Structure."

40. See, for example, Harvey Goldstein, *Multilevel Models in Educational and Social Research* (London: Oxford University Press, 1987); Stephen W. Raudenbush and Anthony S. Bryk, *Hierarchical Linear Models: Applications and Data Analysis Methods* (Thousand Oaks: Sage, 2002); Robert J. Sampson, Stephen W. Raudenbush, and Felton Earls, "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy," *Science* 277 (August 1997): 918-24.

41. Robert J. Sampson, "Local Friendship Ties and Community Attachment in Mass Society: A Multilevel Systemic Model," *American Sociological Review* 53 (October 1988): 766-79; Sampson, "Linking the Micro- and Macro-level Dimensions of Community Social Organization."

42. John D. Kasarda and Morris Janowitz, "Community Attachment in Mass Society," *American Sociological Review* 39 (June 1974): 328-39.

43. Sampson, "Linking the Micro- and Macro-level Dimensions of Community Social Organization."

44. Sampson, "Local Friendship Ties and Community Attachment in Mass Society"; Sampson, "Linking the Micro- and Macro-level Dimensions of Community Social Organization"; Kang and Kwak, "A Multilevel Approach to Civic Participation."

45. Shah, McLeod, and Yoon, "Communication, Context, and Community."

46. Sampson, "Local Friendship Ties and Community Attachment in Mass Society"; Sampson, "Linking the Micro- and Macro-level Dimensions of Community Social Organization"; Hox, *Applied Multilevel Analysis*; Ita G. Kreft and Jan de Leeuw, *Introducing Multilevel Modeling* (Thousand Oaks, CA: Sage, 1998); Snijders and Bosker, *Multilevel Analysis*; Wong, Young, and Fraser, "A Multilevel Analysis of Learning Environments and Student Attitudes."

47. For detailed discussion of the advantages of HLM over other nested model approaches, see Stephen W. Raudenbush and Wing-Shing Chan, "Application of a Hierarchical Linear Model to the Study of Adolescent Deviance in an Overlapping Cohort Design," *Journal of Consulting and Clinical Psychology* 61 (December 1993): 941-51; Raudenbush and Bryk, *Hierarchical Linear Models*.

48. While some might argue that smaller units such as neighborhoods,

suburbs, or cities might be more desirable, contextual effects scholars have cautioned that contextual-level unit should be chosen based on theoretical groundwork rather than dimension. See, for example, Lutz Erbring and Alice A. Young, "Individuals and Social Structure: Contextual Effects as Endogenous Feedback," *Sociological Methods and Research* 7 (May 1979): 396-430; Heinz Eulau, *Politics, Self, and Society: A Theme and Variation* (Cambridge, MA: Harvard University Press, 1986); Heinz Eulau and Lawrence S. Rothenberg, "Life Space and Social Networks as Political Contexts," *Political Behavior* 8 (June 1986): 130-57. We wish to point out that our choice of local media system, or MSA, as the unit of analysis, is closely related to the argument made by Books and Prysby that if the local media are a primary information source, the relevant contextual unit will be "community" corresponding to the local media market. See John W. Books and Charles L. Prysby, "On the Future of Contextual Models of Political Behavior," in *Spatial and Contextual Models in Political Research*, ed. Munroe Eagles (London, UK: Taylor and Francis, 1995).

49. The U.S. Census Bureau, "About Metropolitan and Micropolitan Statistical Areas," <<http://www.census.gov/population/www/estimates/aboutmetro.html>>.

50. Eric M. Uslaner, "Social Capital, Television and the 'Mean World': Trust, Optimism and Civic Participation," *Political Psychology* 19 (September 1998): 441-69.

51. Bogart and Orenstein, "Mass Media and Community Identity in an Interurban Setting"; Stamm and Fortini-Campbell, "The Relationship of Community Ties to Newspaper Use."

52. Robert J. Sampson, "The Neighborhood Context of Well-being," *Perspectives in Biology and Medicine* 46 (summer 2003): S53.

53. Putnam (*Bowling Alone: The Collapse and Revival of American Community*) validated these data against the General Social Survey and Roper Poll, conducting longitudinal and cross-sectional comparisons of parallel questions found in the Life Style Studies and conventional samples. He concludes that there are "surprisingly few differences between the two approaches" with the mail panel approach producing data that is "consistent with other modes of measurement." Also see Robert D. Putnam and Steven J. Yonish, "How Important Are Random Samples? Some Surprising New Evidence" (paper presented to the annual meeting of the American Association for Public Opinion Research, May 1999, St. Pete Beach, FL).

54. John T. Spotila, "Standards for Defining Metropolitan and Micropolitan Statistical Areas," Office of Information and Regulatory Affairs, <<http://www.census.gov/population/www/estimates/00-32997.txt>>.

55. See, for example, John Brehm and Wendy Rahn, "Individual-Level Evidence for the Causes and Consequences of Social Capital," *American Journal of Political Science* 41 (July 1997): 999-1023; Putnam, *Bowling Alone: The Collapse and Revival of American Community*; Shah, McLeod, and Yoon, "Communication, Context, and Community"; Verba, Schlozman, and Brady, *Voice and Equality*.

56. Conceptually, community participation involves civic mindedness, while social interaction is more relevant to personal amusement and entertainment with others. Methodologically, to confirm the items that construct the two scales of community participation and social interaction, two-factor confirmatory factor analysis (CFA) was performed using LISREL 8.30. The result shows that the two-factor model provides a good fit only with the correlation between the two error terms—go out for lunch and go out for dinner – allowed to be free (Chi-square=140.74, d.f.=25, $p = .00$, RMSEA= .03, SRMR= .025, NNFI= .97, CFI = .98), which confirms our argument of a clear distinction between community participation and social interaction. More detailed information on the CFA result can be obtained upon request to the first author.

57. McLeod et al., "Community Integration, Local Media Use, and Democratic Processes"; Shah, McLeod, and Yoon, "Communication, Context, and Community"; Robinson and Levy, "News Media Use and the Informed Public."

58. Raudenbush and Bryk, *Hierarchical Linear Models*; Snijders and Bosker, *Multilevel Analysis*.

59. The multi-level model contains two components: (1) a fixed effects component—gamma(γ) coefficients denoted as G_{ij} or γ_{ij} , where "i" indicates number of indicators at individual-level and "j" at aggregate-level—that consists of level-1 slope coefficients and cross-level interaction coefficients and (2) a random effects component—tau (τ) coefficients denoted as U_{ij} —that indicates variability across metropolitan contexts.

60. Hox, *Applied Multilevel Analysis*; Kreft and de Leeuw, *Introducing Multilevel Modeling*; Snijders and Bosker, *Multilevel Analysis*.

61. Davidson and Cotter, "Sense of Community and Political Participation"; Sampson, "Linking the Micro-and Macro-level Dimensions of Community Social Organization"; Shah, McLeod, and Yoon, "Communication, Context, and Community."

62. Prior to testing the hierarchical linear model that we hypothesized, we conducted two analyses to test the performance of alternative model specifications. These two modifications of the hypothesized model involve rearrangement of the interaction terms. Models were tested that alternately included individual level interactions or contextual level interactions between local print news use and the indicators of community integration indicators. None of these interactions were significant, providing implicit support for the structure of our hierarchical model.

63. Steven H. Chaffee, "Mass Media and Interpersonal Channels: Competitive, Convergent, or Complementary?" in *Inter/Media: Interpersonal Communication in a Media World*, ed. Gary Gumpert and Robert Cathcart (New York: Oxford University Press, 1982).

64. Sampson, "The Neighborhood Context of Well-being."

65. Andrea L. Kavanaugh and Scott J. Patterson, "The Impact of Community Computer Networks on Social Capital and Community Involvement," *The American Behavioral Scientist* 45 (November 2001): 496-513.

66. Shah, McLeod, and Yoon, "Communication, Context, and Community."

67. Leo W. Jeffres, Connie Cutietta, Leslie Sekerka, and Jae-won Lee,

"Newspapers, Pluralism, and Diversity in an Urban Context," *Mass Communication and Society* 3 (August 2000): 157-84.

68. Erbring and Young, "Individuals and Social Structure"; Eulau, *Politics, Self, and Society*; Eulau and Rothenberg, "Life Space and Social Networks as Political Contexts."

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