

Journal of Rural Social Sciences

Volume 34 | Issue 2

Article 3

11-11-2019

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Recommended Citation

Ghimire, Ramesh, and Jim Skinner. 2019. "The Relationship between Length of Community Tenure and Residents' Volunteering at Community Events: Results from the Metro Atlanta Speaks Survey." *Journal of Rural Social Sciences*, 34(2): Article 3. Available At: <https://egrove.olemiss.edu/jrss/vol34/iss2/3>

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Cover Page Footnote

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The Relationship between Length of Community Tenure and Residents' Volunteering at Community Events: Results from the Metro Atlanta Speaks Survey

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ABSTRACT

Volunteering at community events could be associated with length of community tenure as residents with longer years of “tenure” might have a greater sense of community belonging, greater social capital (e.g. social networks and trust), and greater familiarity with regional cultures, compared to new residents. Using the Metro Atlanta Speaks survey conducted in 2015 and 2016, this study finds that residents' volunteering at community events is significantly and positively associated with their length of community tenure in metro Atlanta counties. Other sociodemographic characteristics, such as age, gender, education, income, and children in the household also significantly influence residents' volunteering at community events. Since metro Atlanta counties consist of both urban and rural counties, changes in sociodemographic characteristics are expected to influence community events volunteering in metro Atlanta and other similar metro or non-metro counties in the future, and necessitate focused efforts on raising volunteering rates to compensate for those changes.

KEYWORDS: Community engagement, community tenure, Metro Atlanta Speaks survey, volunteering

INTRODUCTION

Volunteering or participating in community service is an important part of American culture. The Corporation for National and Community Service and National Conference on Citizenship (2010) report that civic activities such as volunteering or community service participation “make the American democracy work.” Encouraging residents to volunteer or participate in community service has long been a goal of many national policies in the US (Corporation for National and Community Service 2007). President Bush’s creation of the Points of Light Foundation and President Clinton’s creation of AmeriCorps are some examples of how this goal has been pursued in the US national policies (US Department of Education/National Center for Education Statistics 1997).

While volunteering at any form of community event (e.g. formal, informal, organized, or unorganized) may be performed without the goal of direct economic benefits but with the intention of helping others, previous studies have shown that volunteering has positive effects on the physical and mental health (Alonso and Nyanjom 2016; Brown, Consedine, and Magai 2005), life satisfaction (Meier and Stutzer 2008; Thoits and Hewitt 2001), and self-esteem/control over life of those who volunteer (Janoski, Musick, and Wilson 1998; Thoits and Hewitt 2001). Volunteering is also associated with enhanced personal development (e.g. identity, problem solving, organization skills, etc.) as well as with greater interpersonal development (e.g. prosocial behavior and ties to the community) (Dworkin, Larson, and Hansen 2003; Leviten-Reid and Campbell 2016). Further, volunteering fosters social capital by creating knowledge spillover and developing trust and reciprocity across diverse cross-sections of the population in societies with linguistic and cultural diversity (Fukuyama 1995; Marschall and Stolle 2004). Also, volunteering promotes community development by growing community capacity and promoting social inclusion (Seyfang 2004).

Community events may of course take any form (e.g. formal, informal, organized, or unorganized). Extensive studies have analyzed factors influencing residents’ volunteering for formal nonprofits (e.g. volunteering through or for organizations) and identified socioeconomic and demographic characteristics associated with residents’ volunteering at formal or organized events (Clerkin et al. 2013; Rotolo, Wilson, and Dietz 2015). Length of community tenure could be associated with residents’ volunteering at community events, as residents with more years of tenure in the area generally have a greater sense of community belonging or attachment, greater social capital such as social networks and trust, and

greater familiarity with regional cultures, when compared to relatively new community residents (Chipuer and Pretty 1999; Clerkin et al. 2013). In this study, using Metro Atlanta Speaks surveys conducted in 2015 and 2016, we analyze the relationship between the years of tenure in the metro Atlanta region and residents' volunteering at community events.

Community events were defined as any type of events – formal, informal, organized, or unorganized events with nonprofit or philanthropic motives – that occur in a given community at which residents of the given community have the opportunity to volunteer (Atlanta Regional Commission 2016a).

A study analyzing the relationship between the length of community tenure and residents' volunteering at community events is policy-relevant for several reasons. Despite the numerous benefits of volunteering as discussed earlier, the percentage of Americans volunteering for formal nonprofits (e.g. volunteering through or for organizations) dropped from 29 percent of the population in 2003 to nearly 25 percent in 2015 (US Bureau of Labor Statistics 2016). As volunteering plays a key role in social life and as volunteers are important cogs of many organizations, the decline in volunteering rate may diminish the capacity of all nonprofit organizations and endanger the existence of some of them. Further, drops in volunteering might slow down the delivery of many important services provided or supplied by those organizations – e.g. raising funds for local schools, parks, or libraries; rescuing animals; providing disaster relief and distribution of aid; and supporting other community initiatives. Such reduced response could exacerbate humanitarian crises, as governments often do not have the capacity, know-how, or fiscal resources to provide the needed services “on their own” (Lall et al. 2004). Also, volunteers provide free services worth billions of dollars to society. In fact, it would cost society an estimated \$184 billion a year if all services provided by the people who volunteer for or through organizations were to have been provided by paid employees (Corporation for National and Community Service 2018a).

Although Atlanta, Georgia has a relatively low share of senior population (defined as 65 years +) as compared to the national average (10.4 percent in Atlanta compared to 14.4 percent in the US in 2014) (US Census Bureau 2014), Atlanta is “going gray” the fastest (among metros) on a percentage basis. The share of the senior population in metro Atlanta has grown by 20 percent between 2010 and 2014 compared to a nearly 11 percent increase across the 53 largest metropolitan areas in the US (Kotkin and Cox 2014). As volunteering is one way to remain socially active after retirement (Luoh and Herzog 2002), a decline in the

volunteering rate may contribute to mental and physical health problems among elderly people. As such, a decline in volunteering rate would be expected to increase government healthcare spending (e.g. Medicare), particularly in many southern states due to their relatively high concentration of rapidly aging populations. Findings of this study will be useful in understanding in general the factors affecting residents' volunteering at community events, and in particular the relationship of that volunteering with the residents' years of community tenure. These findings may then be valuable inputs for local nonprofit organizations and community leaders in identifying and refining efforts to improve the volunteering rate or civic engagement in general and among senior populations in particular (as that population cohort experiencing the highest health benefits of volunteering) (Li and Ferraro 2006). While many studies have assessed volunteering for formal nonprofits and a few studies have looked at volunteering at community events, findings of this study also help understand how volunteering at community events compares to volunteering for formal nonprofits.

Although we focus on the 13-counties in metro Atlanta, the findings of this study are still relevant to understand residents' community event volunteering in other metro or non-metro areas. The 13-counties covered by this study are not 100 percent all urban. According to the U.S. Census Bureau definition, which is based on the percentage of the population living in areas designated "rural," Butts County is 88 percent rural; Coweta County is 33 percent, and Paulding County is 20 percent, compared to Clayton, Gwinnett, DeKalb, or Cobb Counties where less than one percent is deemed "rural" (Hambrick, 2016). The area covered by this study, thus, represents the urban-rural mix of areas, the areas where the majority of American live today. Additionally, counties in metro Atlanta and its residents have historically supported the non-metro or other regions through volunteering or donating whenever the non-metro counties or other regions experience distress. For instance, when coastal counties in Georgia and the Bahamas were hit by the most recent hurricane Dorian, metro Atlanta residents did a number of relief and recovery efforts to support the victims¹. Hence, changes in volunteering rates or behaviors in metro Atlanta are likely to impact, to some extent, the delivery of goods and services to other regions (e.g. non-metro regions).

After this introductory section, we describe the theoretical links between the length of community tenure and residents' volunteering at community events, followed by the findings. The final two sections discuss the results and offer conclusions.

LENGTH OF COMMUNITY TENURE AND RESIDENTS' VOLUNTEERING AT COMMUNITY EVENTS: THEORETICAL LINKS

As noted earlier, community events may take any form (e.g. formal, informal, organized, or unorganized). Empirical literature tends to focus on identifying the factors influencing residents' volunteering for formal nonprofits (e.g. volunteering through or for organizations) (Clerkin et al. 2013; Kasarda and Janowitz 1974; Theodori 2004; Wiepking and Maas 2009). The literature indicates three aspects of community connectedness to be associated with individuals' volunteering or community events participation: (1) the sense of belonging or attachment, (2) social capital such as social networks (e.g. social ties or connections) and social trust, and (3) regional culture (Clerkin et al. 2013; Pooley, Cohen, and Pike 2005; Theodori 2004). A sense of community belonging or community attachment reflects the feeling that "members have of belonging, of significance to one another and to groups, and a shared faith that members' needs will be met through their relationships" (Peterson et al. 2008). In an empirical study, 83 percent of metro Atlanta respondents indicated that they donated to nonprofits because of a sense of community belonging or attachment (Van Slyke and Brooks 2005). There is research evidence that length of tenure in the community is positively associated with a sense of community belonging or attachment (Chipuer and Pretty 1999; Sampson 1988). Hence, residents with longer years of tenure in the community might volunteer more at community events because of a strong sense of community belonging or attachment.

Social capital is a multifaceted concept and there are a variety of definitions in the literature. Social capital generally includes building social networks and enhancing social trust (Wang and Graddy 2008). Individuals with more social capital, such as larger social networks or greater trustworthiness, are more likely to engage in various forms of civic engagements (such as volunteering at community events) for two primary reasons (Becker and Dhingra 2001; Dekker and Halman 2003; Paxton 2007). First, individuals with greater social capital tend to be more generous and as such more likely to engage in various community events. Second, individuals with more social capital tend to receive more invitations to volunteer for or participate at community events. Individuals are also more likely to volunteer when they are asked to do so by someone else (Verba, Schlozman, and Brady 1995). Bekkers (2012) found that individuals who are deemed more trustworthy are more likely to be asked to volunteer. Some studies have found that more religious individuals tend to be generous and accordingly more likely to participate

at community events (Becker and Dhingra 2001; Gibson, 2008; Wang and Graddy 2008). Analyzing giving behavior in the Netherlands, Wiepking and Maas (2009) found that individuals with extended social networks are more generous and thus are invited to volunteer more often. Likewise, Hogan, Eggebeen, and Clogg (1993) reported that individuals with higher socioeconomic status (e.g. educated, higher income, better job, etc.) volunteer more often primarily because they are asked to by their larger social networks. Along with other factors, building social networks, in general, depends on the length of residency (Sampson 1988). Hence, we expect residents with longer years of tenure in the community to volunteer more at community events because of their greater social capital.

Philanthropic engagement, such as volunteering or donating, may also depend on culture, which generally varies across regions (Randle and Dolnicar 2009; Schneider 1996). Regions tend to vary in residents' general attitudes toward the role of government involvement and in terms of civic organizations' role in meeting community needs. For instance, historically, many northern states were dominated by Federalist supporters who wanted to give political control to a few elite members of society and to support private efforts towards civic engagement and charity-giving (Hall 1992). In many southern communities, volunteering or donating often occurs through the church, mutual aid, and fraternal associations, as well as through other informal networks of relations, neighbors, and community members (Winters 1999). In contrast, volunteering or donating in many northeast and Midwest communities tends to occur through more formal expression of generosity through professional and institutionalized organizations (O'Donnell 1994). New residents face norms and expectations for appropriate philanthropic behavior that may discourage them from engaging in their new communities.

Residents' volunteering or community involvement is influenced by a number of socioeconomic and demographic factors including age, gender, education, income, employment, and the presence of children in the household (Goudy 1990; Quarnberg 2011; Wang and Graddy 2008). We might expect that older residents (despite having more free time and flexibility than other age groups) would, in general, volunteer less frequently compared to younger residents, due to declining health and lower socioeconomic status (Cutler and Hendricks 2000). However, residents with a higher socioeconomic status (e.g. higher income or higher education) have more skills and experience of value to many organizations, and they tend to feel more confident about their skills and

ability to contribute in significant ways (Thoits and Hewitt 2001). Also, residents with higher socioeconomic status tend to have more social connections and are more likely to be asked to volunteer at community events (Hogan et al. 1993). It is also argued that residents with a higher socioeconomic status feel an obligation to contribute time to their community (Population Reference Bureau 2011). Hence, residents with higher income, education, or better jobs, in general, are likely to volunteer more often than their lower-income, less-educated, and under/un-employed counterparts.

Having school-aged children in households, in general, increases the likelihood of engagement in various community events. Parents are often asked to participate in school-related activities, such as selling sports tickets and fund raising (US Bureau of Labor Statistics 2007; Wang and Graddy 2008). Females tend to volunteer at community events more often than males (US Bureau of Labor Statistics 2016), perhaps because females seem generally more empathic and altruistic than do males (Greeno and Maccoby 1993). Regarding race/ethnicity, whites in general volunteer more often at community events probably because of relatively higher socioeconomic status (U.S. Bureau of Labor Statistics 2016; CIRCLE 2008), or because whites are also more likely to be asked to volunteer than ethnic minorities (Wilson 2000).

Given the various aspects of community connectedness and sociodemographic factors influencing residents' community event volunteering discussed earlier, residents' volunteering at community events could also depend on the length of their residence in the given community. Accordingly, we hypothesize that residents' odds of volunteering at community events depend on the length of their community tenure, given all other factors influencing volunteering the same. We test this hypothesis using data from the Metro Atlanta Speaks Survey conducted in 2015 and 2016.

METHODS

Metro Atlanta Speaks Survey

This study used the individual survey data from the Metro Atlanta Speaks (MAS) survey conducted in 2015 and 2016. The MAS survey is an ongoing regional survey conducted by the Atlanta Regional Commission (ARC), the planning agency for the metro Atlanta region, in collaboration with its community partners. Inspired initially by the Kinder Institute's Houston Area Surveys in Texas, ARC has conducted the MAS survey annually since 2012. The goal of the MAS survey is to assess residents'

attitudes and opinions on a number of key regional issues, including transportation, the economy, public education, quality of life and amenities, and aging. However, each annual iteration of the survey has included some additional questions. For example, questions related to water, job training, starting a business, health care, and park access and quality were added in the 2014 survey; questions related to civic involvement and engagement were included in the 2015 survey; and questions related to financial resilience, food insecurity, and challenges faced in accessing transportation were added in the 2016 survey.

This is a random-digit-dialed telephone survey (it targets quotas for landline and cellphone) of people aged 18 years and older living in metro Atlanta region households. The survey is conducted using a computer-aided telephone interviewing (CATI) system which randomly selects telephone numbers to be contacted for an interview. The interviewer, upon hearing someone answer, inquires how many people in the household are 18 years or older. The person with the most recent birthday is selected/requested for interviewing if available at the home. Each MAS survey sought to collect responses from 52,000 individuals living in the 13-county metro Atlanta region. Response rates on both surveys were nearly 10 percent (5,200 responses) and the survey in both years was conducted by the A. L. Burruss Institute of Public Service and Research at Kennesaw State University (Atlanta Regional Commission 2016a).²

The core part of the MAS surveys conducted in 2015 and 2016 was a series of questions related to residents' perceptions of the civic strengths and weaknesses of the metro Atlanta region. One "question block" in the surveys asked residents about whether they had volunteered to work at community events over the past year with three possible response options – *yes*, *no*, or *don't know*. Community events were defined as any type of events – formal, informal, organized, or unorganized events with nonprofit or philanthropic motives – that occur in a given community at which residents of the given community have the opportunity to volunteer. Some examples of community events include but are not limited to events, fairs, or festivals to promote local arts and culture; fundraising to support local library, parks, or schools; human services, such as health fairs and free health screening, family counselling, and job services; environmental and animal welfare, such as animal rescue and adoption, river/lake/park cleanups, and other events for environmental quality and beautifications. The variable *volunteering* equals one if respondents indicated they volunteered to work at any of the

community events (as defined above) over the past year, and zero otherwise.

The survey also collected respondents' socioeconomic and demographic information including age, gender, race/ethnicity, education, employment, annual household income, years of tenure in the metro Atlanta region, home zip code, and presence of children under 18 in the household surveyed. All survey responses are anonymous since no identifiable personal information is asked or collected in the survey.

Econometric Model

We model the relationship between individual *i*'s volunteering at community events (v_i) to depend on his/her years of tenure in the metro Atlanta region (t_i), while controlling for a range of his/her sociodemographic characteristics (s_i), zip code fixed effects (α_j) and year-fixed effects (τ_k), as summarized in equation (1).

$$v_i = f(t_i; s_i; \alpha_j; \tau_k) \quad (1)$$

The vector \mathbf{s} includes socioeconomic characteristics (education, employment, and annual household income), demographic characteristics (age, gender, and children under 18 in the household), and race/ethnicity of responding residents.

The zip code fixed effects α_j are included in the model to account for zip code specific heterogeneities affecting residents' volunteering at community events or their tenure length. Locations represented by the zip codes in the metro Atlanta region vary significantly based on a number of community indicators, such as income or wealth, school quality, crime rates, dominant political ideology, religiosity or spirituality, and so on. For instance, residents in affluent areas would be expected to have more volunteering opportunities, or to be asked to volunteer more often, because of their greater social capital and larger social networks (Hogan et al. 1993; Musick and Wilson 2007). Schools in higher-income, lower crime areas tend to organize more extracurricular activities (e.g. sports and concerts) (Frey 2015), providing more opportunities for residents to volunteer at community events (e.g. raising school-funds by selling school-lot parking spaces to game-day visitors). Some areas in the metro Atlanta region are more racially diverse than others. For example, the four metro counties – Douglas, Gwinnett, Henry, and Rockdale – are the most racially diversified in the region. Racial distributions have shifted (majority switch to minority and vice-versa) in three metro Atlanta counties – Douglas, Gwinnett, and Rockdale – between 2000 and 2010 (Krogstad 2015) and since then (by 2015) in Henry County. These shifts are likely to influence

volunteering opportunities at community events, as the volunteering rate tends to be higher in more racially homogenous communities (Rotolo and Wilson 2014; Stolle 2001). Because of diversity, we expect heterogeneities in the celebration/observation of local fairs, events, or festivals across communities represented by zip codes in the region. Further, political ideology, trustworthiness, or spirituality or religiosity may also be different across communities in the region. The use of zip code fixed effects accounts for these differences so long as they are correlated with locations represented by zip codes. Finally, the use of zip code fixed effects also accounts for heterogeneities in physical development (e.g. road access and mobility, proximities to local parks and recreation areas, prevalence of public library, etc.) across communities represented by zip codes in the region.

Since we used surveys conducted in 2015 and 2016, we accounted for year-specific heterogeneity by using year fixed effects τ_k in the regression equation. The economy was relatively better in 2016 than in 2015, as reflected in various regional or macroeconomic indicators, such as lower unemployment rates and higher consumer confidence levels. Further, the presidential election in 2016 might have provided greater opportunities for volunteering, compared to 2015. The use of year fixed effects also helps to mitigate the impact of external shocks, such as globalization, urbanization, and technological advancements (e.g. the development and use of mobile apps, such as GiveGap) that evolve over time, affecting volunteering or length of community tenure in the region.

FINDINGS

Sample Description

We used responses provided by 8,128 residents who lived in 178 zip code areas across the 13 metro Atlanta counties in Georgia. Table 1 summarizes the variables used in this analysis.

Forty-six percent of respondents indicated they “volunteered” at community events over the past year. This rate is higher than the overall rates of volunteering in metro Atlanta as reported by the U.S. Bureau of Labor Statistics (24 percent in 2014), with the survey incorporating volunteering at any types of community events – formal, informal, organized, or unorganized, while the latter includes volunteering only for formal nonprofits (Corporation for National and Community Service 2018b). Respondents, on average, were 53 years old and had 28 years of tenure in the metro Atlanta region. Forty-seven percent of respondents had completed college degrees (undergraduate or graduate/professional

degree), 56 percent of respondents were white, and 34 percent of respondents had children under 18 in the household. Sixty-seven percent of respondents had annual household incomes below \$50,000, 54 percent of respondents were employed (working full-time or part-time), and 58 percent of respondents were female.

As we see in Table 1, certain subpopulation groups (e.g. relatively older people, females, and whites) are oversampled in the survey, which could lead to bias and incorrect estimates (Pfeffermann 1996). To mitigate this bias, the regression analysis uses survey weights, based on the 2010 Census (Atlanta Regional Commission 2016a). The survey weights adjust

Table 1: Summary and Description of Variables

Variables	Descriptions	Mean	VIF
Volunteering	Binary variable = 1 if respondent “volunteered to work at community events” over the past year, and 0 otherwise	0.46	Dep. variable
Years of tenure	Years of tenure/residence reported by respondents in the metro Atlanta area	28.28	1.52
Age	Age reported by respondents, in years	53	2.14
Children	Binary variable = 1 if respondent had children under 18 in the household, and 0 otherwise	0.34	1.26
Female	Binary variable = 1 if respondent was female, and 0 otherwise	0.58	1.14
Education			
High school or less	Binary variable = 1 if respondent had high school or less level of education, and 0 otherwise	0.23	Base category
Some college or associate degree	Binary variable = 1 if respondent had some college or associated degree, and 0 otherwise	0.30	1.49
Undergrad degree	Binary variable = 1 if respondent indicated he/she had undergrad degree, and 0 otherwise	0.28	1.70
Graduate or professional degree	Binary variable = 1 if respondent had graduate or professional degree, and 0 otherwise	0.19	1.55
Race/ethnicity			
White	Binary variable = 1 if respondent was white, and 0 otherwise	0.56	Base category
Black or African American	Binary variable = 1 if respondent was Black or African American, and 0 otherwise	0.27	1.84
Hispanic or Latino	Binary variable = 1 if respondent was Hispanic or Latino, and 0 otherwise	0.05	1.34
Other races	Binary variable = 1 if respondent was other race/ethnicity, and 0 otherwise	0.12	1.52
Income			
Below \$25,000	Binary variable = 1 if had annual household income below 25,000, and 0 otherwise	0.30	3.98

Variables	Descriptions	Mean	VIF
\$25,000 - \$49,999	Binary variable = 1 if respondent had household income between \$25,000 and \$49,999, and 0 otherwise	0.37	3.51
\$50,000 - \$74,999	Binary variable = 1 if respondent had annual household income between \$50,000 and \$74,999, and 0 otherwise	0.10	Base category
\$75,000 - \$100,000	Binary variable = 1 if respondent had annual household income between \$75,000 and \$100,000, and 0 otherwise	0.11	1.94
\$100,000 & above	Binary variable = 1 if respondent had annual household greater or equal to \$100,000, and 0 otherwise	0.12	2.12
Employment			
Employed	Binary variable = 1 if respondent was employed, and 0 otherwise	0.54	2.18
Unemployed	Binary variable = 1 if respondent was unemployed, and 0 otherwise	0.10	Base category
Retired	Binary variable = 1 if respondent was retired, and 0 otherwise	0.33	2.69
Disabled	Binary variable = 1 if respondent was disabled, and 0 otherwise	0.03	1.40

for responses of subpopulation groups, based on their demographic profiles (e.g. age, gender, race/ethnicity, place of residence). In other words, survey weighting attaches more weights to responses of under-represented subpopulation groups (in this case, relatively younger population, males, and nonwhite ethnic groups) and assigns less weight to the responses of over-represented subpopulation groups (in this case, relatively older people, females, and whites).

Multicollinearity among covariates in the regression equation can increase the variance of estimates (Gujarati 2012). Variance inflation factor (VIF) was estimated to test for multicollinearity among covariates (Table 1). The VIF was less than 4 in all cases, indicating no multicollinearity problems (Gujarati 2012).

Regression Results

Years of community tenure and volunteering at community events. Table 2 summarizes the findings (logistic regression coefficients and odds ratios). As indicated by the *log pseudolikelihood*, *wald chi2*, and *prob>chi2*, the regression equation was statistically significant to explain residents' volunteering at community events. The decision criteria for hypothesis testing were based on $p < 0.10$.

Table 2: Years of Tenure and Volunteering at Community Events

Variables	Coefficients	Coefficients with 95% CI	Odds ratios	Odds ratios with 95% CI
Years of tenure	0.027*** (0.006)	0.014, 0.040	1.027*** (0.007)	1.014, 1.041
Years of tenure squared	-0.0004*** (0.000)	-0.0006, -0.0002	0.999*** (0.000)	0.999, 0.999
Age	-0.0143*** (0.003)	-0.020, -0.007	0.985*** (0.003)	0.979, 0.992
Children	0.176** (0.083)	0.014, 0.338	1.192** (0.098)	1.014, 1.402
Female	0.301*** (0.079)	0.146, 0.455	1.350*** (0.106)	1.157, 1.576
Education (base: High school or less)				
Some coll./associate	0.578*** (0.104)	0.374, 0.781	1.782*** (0.185)	1.453, 2.184
Undergraduate	0.747*** (0.112)	0.528, 0.965	2.110*** (0.235)	1.696, 2.625
Grad./professional	0.907*** (0.132)	0.649, 1.165	2.477*** (0.326)	1.914, 3.207
Race/ethnicity (base: White)				
African American	0.115 (0.102)	-0.084, 0.313	1.121 (0.113)	0.918, 1.368
Hispanic or Latino	0.018 (0.175)	-0.325, 0.362	1.018 (0.178)	0.722, 1.436
Other races	-0.011 (0.142)	-0.288, 0.267	0.989 (0.140)	0.749, 1.307
Income (base: \$50,000 – \$74,999)				
Below \$25,000	-0.444*** (0.148)	-0.734, -0.154	0.641*** (0.094)	0.479, 0.857
\$25,000 – \$49,999	-0.161 (0.137)	-0.429, 0.106	0.850 (0.116)	0.650, 1.112
\$75,000 – \$99,999	0.026 (0.168)	-0.302, 0.354	1.026 (0.172)	0.739, 1.426
\$100,000 & above	-0.122 (0.162)	-0.439, 0.194	0.884 (0.143)	0.644, 1.215
Employment (base: Unemployed)				
Employed	0.188 (0.121)	-0.049, 0.424	1.206 (0.145)	0.952, 1.529
Retired	-0.063 (0.159)	-0.373, 0.247	0.939 (0.148)	0.688, 1.281
Disabled	-0.552** (0.264)	-1.06, -0.03	0.575 (0.152)	0.343, 0.966
Constant	-1.433* (0.824)	-3.346, -0.121	0.176** (0.145)	0.176, 0.145
Zip code fixed effects	Included			
Year fixed effects	Included			
Log pseudolikelihood	-5050.29			
Wald chi2	475.68			
Prob > chi2	<0.001			
Observations	8,128			

Logistic regression estimates; (robust standard errors); * $p < .1$, ** $p < .05$, *** $p < .01$.

Years of tenure was positively associated with residents' volunteering at community events and the relationship was non-linear. The odds of volunteering increases with tenure length until tenure length equals to 34 years, and then the odds decrease.³ The variable *age* was negatively associated with residents' volunteering at community events, suggesting that getting older means lower odds of volunteering.⁴ Compared to residents without children, residents with children had 19 percent higher odds of volunteering. Likewise, females had 35 percent higher odds of volunteering, compared to their male counterparts. When compared to residents with high school or less level of education, with regard to volunteering, residents with some college or an associate's degree had 78 percent higher odds, those with an undergraduate degree had 111 percent higher odds, and residents with graduate or professional degree had 148 percent higher odds of volunteering. Residents with annual household income below \$25,000 had 36 percent lower odds of volunteering than did residents with annual household income \$50,000 – \$74,999. The results also indicate that disabled residents had 66 percent lower odds of volunteering.⁵

Robustness checks with years of tenure tails. We analyzed the robustness of the results using different samples. In Table 3, we show regression results for subsamples that excluded individuals with bottom 5 percent years of tenure (col. 1), bottom 10 percent years of tenure (col. 2), top 5 percent years of tenure (col. 3), and top 10 percent years of tenure (col. 4) from the sample. In all cases, the variable *years of tenure* and *years of tenure squared* remained statistically significant in explaining residents' volunteering at community events.

Robustness checks with different specifications. We also analyzed the robustness of the results using different specifications in Table 4. In column 1, we regressed *volunteering* on *years of tenure* and *years of tenure squared* only. In column 2, we regressed *volunteering* on *years of tenure*, *years of tenure squared*, and demographic controls (*age*, *children*, and *gender*). In column 3, we regressed *volunteering* on *years of tenure*, *years of tenure squared*, demographic controls (*age*, *children*, and *gender*), and *race/ethnicity*. In column 4, we regressed *volunteering* on *years of tenure*, *years of tenure squared*, demographic controls (*age*, *children*, and *gender*), *race/ethnicity*, and *education*. As in the case of the baseline results shown in Table 2, all regression equations included zip code and year fixed effects. In all regression equations, the variables, *years of tenure* and *years of tenure squared* were statistically significant in explaining *volunteering*.

Table 3: Years of Tenure and Volunteering at Community Events with Different Samples

Variables	Excluding bottom 5% years of tenure (1)	Excluding bottom 10% years of tenure (2)	Excluding top 10% years of tenure (3)	Excluding top 5% years of tenure (4)
Years of tenure	0.024*** (0.008)	0.023*** (0.008)	0.032*** (0.010)	0.030*** (0.008)
Years of tenure squared	-0.000*** (0.000)	-0.000*** (0.000)	-0.001*** (0.000)	-0.000*** (0.000)
Age	-0.015*** (0.003)	-0.015*** (0.004)	-0.015*** (0.003)	-0.014*** (0.003)
Children	0.224*** (0.086)	0.177** (0.089)	0.184** (0.084)	0.186** (0.083)
Female	0.327*** (0.081)	0.311*** (0.083)	0.309*** (0.081)	0.299*** (0.080)
Education (base: High school or less)				
Some coll./associate	0.545*** (0.106)	0.534*** (0.109)	0.559*** (0.108)	0.565*** (0.106)
Undergraduate	0.722*** (0.114)	0.755*** (0.118)	0.737*** (0.115)	0.743*** (0.113)
Grad./professional	0.890*** (0.136)	0.933*** (0.141)	0.882*** (0.136)	0.899*** (0.134)
Race/ethnicity (base: White)				
African American	0.112 (0.105)	0.068 (0.108)	0.140 (0.104)	0.120 (0.103)
Hispanic or Latino	0.072 (0.182)	0.036 (0.188)	0.019 (0.178)	0.020 (0.175)
Other races	-0.088 (0.150)	-0.174 (0.153)	0.012 (0.144)	-0.004 (0.143)
Income (base: \$50,000 – \$74,999)				
Below \$25,000	-0.365** (0.155)	-0.389** (0.159)	-0.424*** (0.153)	-0.442*** (0.150)
\$25,000 – \$49,999	-0.104 (0.143)	-0.097 (0.147)	-0.163 (0.140)	-0.179 (0.139)
\$75,000 – \$99,999	0.139 (0.173)	0.108 (0.177)	-0.005 (0.174)	0.016 (0.170)
\$100,000 & above	-0.057 (0.168)	-0.032 (0.173)	-0.115 (0.166)	-0.118 (0.164)
Employment (base: Unemployed)				
Employed	0.291** (0.126)	0.300** (0.130)	0.184 (0.122)	0.181 (0.121)
Retired	0.072 (0.163)	0.097 (0.168)	-0.028 (0.165)	-0.062 (0.161)
Disabled	-0.455* (0.270)	-0.486* (0.281)	-0.670** (0.278)	-0.575** (0.267)
Constant	-1.550* (0.835)	-1.511* (0.835)	-1.430* (0.825)	-1.451* (0.825)
Zip code fixed effects	Included	Included	Included	Included
Year fixed effects	Included	Included	Included	Included
Log pseudolikelihood	-4698.38	-4398.49	-4832.64	-4972.91
Wald chi2	467.97	463.97	402.81	433.33
Prob > chi2	<0.001	<0.001	<0.001	<0.001
Observations	7,729	7,369	7,286	7,727

Logistic regression estimates; (robust standard errors); * $p < .1$, ** $p < .05$, *** $p < .01$.

Table 4: Years of Tenure and Volunteering at Community Events with Different Specifications

Variables	No controls	Demographic controls	Demographic controls and race/ethnicity	Demographic controls, race and education
	(1)	(2)	(3)	(4)
Years of tenure	0.032*** (0.007)	0.034*** (0.007)	0.033*** (0.007)	0.029*** (0.007)
Years of tenure squared	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.000*** (0.000)
Age		-0.011*** (0.003)	-0.012*** (0.003)	-0.017*** (0.003)
Children		0.245*** (0.081)	0.258*** (0.081)	0.209** (0.083)
Female		0.263*** (0.076)	0.268*** (0.077)	0.225*** (0.078)
Race/ethnicity (base: White)				
African American			0.137 (0.102)	0.121 (0.102)
Hispanic or Latino			-0.154 (0.175)	0.019 (0.178)
Other races			-0.014 (0.142)	-0.004 (0.141)
Education (base: High school or less)				
Some coll./associate				0.671*** (0.104)
Undergraduate				0.932*** (0.108)
Grad./professional				1.107*** (0.128)
Constant	-1.236 (0.816)	-0.792 (0.847)	-0.801 (0.836)	-1.510* (0.803)
Zip code fixed effects	Included	Included	Included	Included
Year fixed effects	Included	Included	Included	Included
Log pseudolikelihood	-5282.41	-5224.85	-5219.68	-5090.32
Wald chi2	296.89	331.43	336.37	442.95
Prob > chi2	<0.001	<0.001	<0.001	<0.001
Observations	8,128	8,128	8,128	8,128

Logistic regression estimates; (robust standard errors); * $p < .1$, ** $p < .05$, *** $p < .01$.

Table 5: Years of tenure as percent of age and residents' volunteering

Variables	Coefficients
Years of tenure as percent of age	1.108** (0.442)
Years of tenure as percent of age squared	-0.751** (0.371)
Children	0.253*** (0.081)
Female	0.264*** (0.078)
Education (base: High school or less)	
Some college or associate degree	0.590*** (0.103)
Undergrad degree	0.755*** (0.111)
Graduate or professional degree	0.886*** (0.130)
Race/ethnicity (base: White)	
African American	0.079 (0.100)
Hispanic or Latino	0.013 (0.142)
Other races	0.075 (0.173)
Income (base: \$50,000 – \$74,999)	
Below \$25,000	-0.414*** (0.148)
\$25,000 – \$49,999	-0.155 (0.137)
\$75,000 – \$99,999	-0.010 (0.168)
\$100,000 & above	-0.135 (0.162)
Employment (base: Unemployed)	
Employed	0.162 (0.122)
Retired	-0.487*** (0.143)
Disabled	-0.710*** (0.256)
Constant	-2.311*** (0.841)
Zip code fixed effects	Included
Year fixed effects	Included
Log pseudolikelihood	-5084.1497
Wald chi2	443.21
Prob > chi2	<0.001
Observations	8,128

Logistic regression estimates; (robust standard errors); * $p < .1$, ** $p < .05$, *** $p < .01$.

Robustness checks with a different indicator for length of community tenure. Instead of using *years of tenure*, we used *years of tenure as percent of age* as the indicator for length of community tenure and estimated the regression equation (Table 5). The regression equation had exactly the same set of explanatory variables and also accounted for zip code and year fixed effects. Similar to Table 2, the variables *years of tenure as percent of age* and *years of tenure as percent of age squared* were statistically significant in explaining residents' volunteering at community events.

DISCUSSION

As the length of community tenure is associated with higher odds to volunteering, increasing residents' tenure length is expected to increase odds that those residents will volunteer at community events. Since the odds of volunteering are lower for newcomers to metro Atlanta counties, providing explicit opportunities for new residents to get connected with the local community through various programs may be helpful to increase the odds of newcomers' volunteering. As we mentioned earlier, metro Atlanta region consist of both urban and rural counties and the region is home to nearly 4.5 million people as of 2016, adding nearly 70,000 new residents annually since 2010 (Atlanta Regional Commission 2016b). Relatively strong job growth and affordable housing in the region will continue attracting new residents in the region into the future (Picchi 2015; PNC Financial Services Group 2015). In this regard, local or community leaders can play crucial roles in bringing new residents into the fabric of the local communities. Interacting with new residents about various community issues and involving them in decision-making processes would also help improve their sense of community belonging and attachment. Fostering a warm and welcoming culture for new residents would help them feel more comfortable in the new physical settings and gradually improve their connections to the community. Likewise, providing opportunities for new residents to get familiarized with local cultures through programs like exchanges also might help improve their connectedness to community.

Although volunteering at community events is different from volunteering for formal nonprofits, many of the determinants are akin to those of volunteering for formal nonprofits. The findings suggest older residents volunteer at community events less than do other age cohorts. This finding is consistent with a study on volunteering for formal nonprofits, conducted by the U.S. Bureau of Labor Statistics (2016), which reports that volunteering rates are highest for 35 to 44 years old and 45 to

54 years old (28.9 percent and 28 percent, respectively), but that rates are lower for 55 to 64 years old and 65 years and older (25.1 percent and 23.5 percent, respectively). Since older people are much less likely to start volunteering than they are to stop volunteering, it is important to focus on retaining current volunteers (Butrica, Johnson, and Zedlewski 2007). In this regard, providing volunteering opportunities to older people based on their skills, personalities, experiences, and future goals might help increase volunteering rates, particularly among older people. Also, outreach to elderly people about volunteering opportunities, based upon their experiences, skills, and interests, may also help them in volunteering.

Education and gender are other robust predictors of residents' volunteering at community events, as they also are predictors of volunteering for formal nonprofits. These findings align with those of a previous study on volunteering for formal nonprofits, conducted by the U.S. Bureau of Labor Statistics (2016), which reports that volunteering rate for formal nonprofits is 38 percent for individuals with bachelor's degree and higher (master's, professional, and doctoral degrees), followed by 26.5 percent for individuals with some college or associate degrees, but is only 15.6 percent for individuals with high school degrees. Further, Wang and Graddy (2008) found education to be a significant predictor for volunteering and charitable giving. We expect that increasing the share of educated residents in the metro Atlanta counties and other similar metro or non-metro counties would improve volunteering rates in the future. The U.S. Bureau of Labor Statistics (2016) also reports that females had significantly higher volunteering rates compared to males in the US (27.8 percent vs. 21.8 percent).

Our findings suggest that residents with children had higher odds of volunteering at community events compared to residents without children. This finding aligns with those of the U.S. Bureau of Labor Statistics (2016) which reports that the volunteering rate is 31.3 percent for individuals with children, compared to 22.6 percent for individuals without children. Likewise, Wang and Graddy (2008) find that having children in the household significantly increased the probability of volunteering for and giving to charities in the US. Hence, increasing the number of households having children is expected to improve the rate of community events volunteering in the metro Atlanta region. However, per expectation, residents with lower household income or with disabilities had lower odds of volunteering at community events. Previous studies also reported that individuals with higher income or no disabilities participate more in various community events or civic engagements, as compared to their lower-

income or disabled counterparts (CIRCLE 2008; Theodori, 2004; Wang and Graddy 2008). The finding, hence, suggests that an increase in the share of low-income residents in the metro Atlanta counties and other similar metro or non-metro counties is expected to lower the rate of community events volunteering.

CONCLUSIONS

The length of tenure in metro Atlanta counties is positively associated with residents' volunteering at community events. Hence, increasing residents' tenure length is expected to increase the odds of their volunteering at community events in metro Atlanta and other similar metro or non-metro counties. As we discussed earlier, volunteering occurs via three aspects of community connectedness – sense of belonging or attachment, social networks, and regional culture. Improving community connectedness of new residents through these channels may also help raise the volunteering rate. Since sociodemographic factors influence residents' volunteering at community events, sociodemographic changes are expected to influence the volunteering rate in metro Atlanta and other similar metro or non-metro counties in the future. For instance, increasing the share of female, educated population, and population with children may increase the volunteering rate, given all other factors influencing volunteering the same. Conversely, increasing the share of elderly population and low-income populations may lower the volunteering rate. Although volunteering at community events is different from volunteering for formal nonprofits, many of the sociodemographic determinants appear to be similar. Policies encouraging residents' volunteering for formal nonprofits may thus be expected to increase resident volunteering “more broadly” at community events.

Two caveats to this study should be noted. First, because of the cross-sectional analysis, we fail to account for the influence of time on the variables measured into the model. It may, therefore, be difficult to infer the temporal association between dependent and independent variables. We recommend that future studies use panel surveys to address this issue. Secondly, because of the lack of data, we fail to account directly in our model for some important predictors of residents' volunteering as suggested by the literature. For instance, we fail to include religiosity or trustworthiness directly in our model. However, we do account for a large number of socioeconomic and demographic variables, as well as zip code and year fixed effects in the regression analysis to mitigate the risk of omitted variable bias. As we mentioned earlier, the use of zip code fixed

effects mitigates the influence of many confounding factors, including those of religiosity or trustworthiness so long as they are correlated with locations represented by zip codes in the region.

DISCLAIMER

The views and opinions expressed here are those of the authors and do not necessarily reflect the official policy or position of the Atlanta Regional Commission.

ENDNOTES

¹ Metro Atlanta counties held initiatives to collect foods and other supplies; the North American Properties hosted a number of events in various parts of the metro Atlanta to gather donations and raise funds; university students in metro Atlanta conducted initiatives to collect donations to support relief and recovery efforts (Nouryeh, 2019).

² The Atlanta Regional Commission (ARC) is a quasi-state government body (one of twelve such commissions in Georgia), charged primarily with transportation, air quality, and land use planning for various functional county-based areas, and also serving as the metropolitan planning agency for the Atlanta metro. Although ARC is not an academic institution, it has always maintained a high level of research ethics to protect anonymity and confidentiality of research participants. ARC has maintained the anonymity of randomly selected respondents in all of the six Metro Atlanta Speaks surveys conducted, as well as in the hundreds of other surveys for transportation and land use planning that the agency has undertaken since the 1950s. The survey data for Metro Atlanta Speaks are collected by a third-party survey consultant, in a randomly selected and de-identified manner, with names and addresses not known, asked, or recorded. Respondents are assured by the consultants and by ARC of this de-identification and apprised of the agency commitment to publish only aggregated results. Individual de-identified records are made available only on specific request to researchers or local governments.

³ To find the turning point of the function, $v = 0.027 \times t - 0.0004 \times t^2 + x$, we differentiate the function w.r.t. T and then set it equals to zero. This gives T equals 34 years.

⁴ Odds ratios for continuous variables (e.g. years of tenure or age) do not have exactly similar interpretation as do categorical variables (e.g. education, race/ethnicity, or income) because there is no reference group to compare the odds (Williams 2011); therefore, we do not interpret their odds ratios despite reporting them in Table 2.

⁵ In general, the relationship between a factor increase and the percentage change is $(f-1) \times 100\%$ (Buis 2016). Hence, an odds ratio of 1.027 corresponds to a $(1.027 - 1) \times 100\% = 2.7\%$ change in odds, or 2.7% higher odds. Likewise, an odds ratio of 0.641 corresponds to a $(0.641-1) \times 100\% = -0.36\%$ change in odds or 36% lower odds.

ACKNOWLEDGMENTS

We thank the reviewers and the editor for their useful comments and suggestions. All remaining errors are our own.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

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