HOMEOWNERSHIP AND ITS EFFECTS ON VOLUNTEERING: A COMPARISON ACROSS COMMUNITIES

A Thesis
submitted to the Faculty of the
Graduate School of Arts and Sciences
of Georgetown University
in partial fulfillment of the requirements for the
degree of
Master of Public Policy
in Public Policy

By

Katherine E. Drew, B.S.

Washington, DC
April 12, 2011
HOMEOWNERSHIP AND ITS EFFECTS ON VOLUNTEERING: 
A COMPARISON ACROSS COMMUNITIES

Katherine E. Drew, B.S.

Thesis Advisor: Christopher M. Toppe, Ph.D.

ABSTRACT

Of the many effects caused by the recession that began in the United States in 2008, one of the largest is in the expectations of homeowners. With the drop in home values, homeowners face a dramatically different set of circumstances than they did a decade ago. Homeownership promotion has long been a key component of federal housing policy, on the assumption that homeownership promotes civic engagement, one measure of which is volunteering. In the face of this today’s economic realities, policymakers must decide how to best align their priorities, and where to make changes. While the relationship between homeownership and volunteering has been examined in many ways at the individual level and in very constrained geographic circumstances, little investigation has been conducted to measure whether, across communities, this relationship is valid. This paper undertakes such an investigation, examining rates and averages across 195 Metropolitan Statistical Areas in the US, using ordinary least squares regression to test whether the volunteer rates of a community can be predicted by rates of homeownership. The data in this study comes from pooled responses in the Volunteering in America dataset and the American Community Survey.

The results of my regressions show statistical significance in the relationship between homeownership and volunteering, predicting across several different models.
and in the presence of various controls that increases by one percentage point in the homeownership rate will increase volunteering by about .22 percentage points. Yet with a consistently low R-squared value, this result is of minimal practical significance. Thus, policymakers should be wary of making the claim or designing policy on the assumption that homeownership itself brings positive benefits to a community. Also, the predicted estimates of the different control variables used suggest that community-wide economic indicators do effect volunteering. While further research is required to understand precisely the nature of these relationships, policy makers should keep in mind that the economic downturn is likely to have a detrimental effect on volunteering, and explore ways to mitigate this effect.
This thesis is dedicated to Allan Drew—a lifelong volunteer whose example inspires me.

I also thank my family, friends and classmates who supported me in the research and writing of this paper.

Many thanks,
Katherine E. Drew
# Table of Contents

List of Figures and Tables .......................................................................................................................... vi

1. Introduction ........................................................................................................................................ 1

2. Background and Literature Review ................................................................................................. 2

3. Conceptual Framework, Data and Methods ...................................................................................... 7
   Hypotheses ........................................................................................................................................ 9

4. Results and Analysis ......................................................................................................................... 16
   Descriptive Statistics ....................................................................................................................... 16
   Regression Results .......................................................................................................................... 18

5. Discussion and Recommendations ................................................................................................. 28

6. Appendix ........................................................................................................................................ 33

7. Bibliography .................................................................................................................................... 35
LIST OF FIGURES

Figure 1: Diagram of Conceptual Framework.................................................................7

LIST OF TABLES

Table 1: Anticipated effects of demographics associated with volunteering and homeownership........8
Table 2. Descriptive Statistics of Volunteer Rate......................................................................17
Table 3. Descriptive Statistics of Homeownership Rate..............................................................17
Table 4. Descriptive Statistics of Demographic Control Variables..............................................18
Table 5. Descriptive Statistics of Financial Control Variables.....................................................18
Table 6. Regression Results for Ordinary Least Squares Analysis of Predictors of Volunteering.....19
Table 7. Results of Ordinary Least Squares Regression: Model 3 With and Without Income........24
Table 8. Results of Ordinary Least Squares Regression: Model 4 With and Without Income........25
Table 9. Results of Ordinary Least Squares Regression of Tenure in Home on Volunteering Rate....26
Table 10. Results of Ordinary Least Squares Regression: Model 3 without Tenure .....................27
Table 11. Results of Ordinary Least Squares Regression: Model 4 without Tenure....................28
INTRODUCTION

The economic downturn that began in the United States in 2008 has been transformative to the economics of families and communities in many ways. At the heart of this downturn was the foreclosure crisis that plunged the housing market into upheaval. As of 2011, the foreclosure crisis is stubbornly refusing to be quelled. Its long duration and uncertain future raise the possibility that the housing market fluctuations could affect more than just the individual homeowners themselves.

Homeownership has long been idealized in American conventional wisdom and one key reason for its inclusion in the federal housing policy agenda has been for its perceived role in building social capital. It is often thought that owning a home makes a person care more about her community and neighbors. It follows that as people care more, they are compelled to participate more in the community, and as a result spend an increasing amount of time volunteering.

This relationship has piqued the interest of many researchers, and empirical studies of the extent to which homeownership predicts volunteering have been undertaken, but most revolve around the individual and her propensity to volunteer. Given the narrow focus of many of these studies, challenges arise when trying to generalize the findings to a larger population, and to understand the role that non-homeowners may play in community volunteering. A full examination of the aggregate effect of homeowners with respect to volunteering has yet to be undertaken.

In this paper I seek to contribute to this understanding of the community-level relationship between homeownership and volunteering. I will analyze data from communities
across the country to examine the extent to which the homeownership rate is an underlying cause of variation in volunteer activity. Based on the existing individual-level research, the current assumption is that the homeownership rate in a community is a predictor of its volunteer activity. I will test this hypothesis using data from the Corporation for National and Community Service and the American Community Survey.

If an empirical relationship between homeownership and volunteering in fact exists, then the changes in homeownership brought on by the housing market fluctuations have the potential to influence volunteerism; by decreasing volunteering, the housing crisis can have a wider-spread effect than on just the homeowners themselves. An understanding of the results of this test and the effects that homeownership has on an entire community will be relevant to policymakers and can inform the critical decisions they will face in the coming years.

**Background and Literature Review**

Before considering the plan by which this empirical study will take place, a more thorough explanation of the relationship between volunteering and homeownership must be articulated. In this section, I will first examine the various effects that homeownership can have on a community. Then I will examine the various factors which research has found to predict volunteering. Then I will examine the relationship between homeownership and volunteering, looking at the theoretical and empirical tenets of the relationship.
Social Effects of Homeownership

Researchers fairly recently began analyzing whether the popular claim that homeownership is universally good for society is, in fact, true. Chiefly, these studies have explored the relationship between homeownership and change in social outcomes from either a sociological perspective or an economic one. Researchers have typically posited one of two theories: that the relationship between homeownership and social outcome improvement is a function of economic factors or that it is a function of sociological factors. Those who test the first theory tend to believe as DiPasquale and Glaeser do, that “homeownership should create incentives for households to improve the quality of their communities since community quality is capitalized into the value of their homes. In addition, because of the high transaction costs associated with homeownership, homeowners tend to be considerably less mobile than renters.” (DiPasquale & Glaeser, 1999). The researchers who take the sociological approach argue, as do Rotolo, Wilson and Hughes, that homeownership’s effects stem from the attachment that a homeowner has with his or her neighborhood. They agree that “homeownership encourages psychological identification with the neighborhood or community and this does not depend on the value of the house” (Rotolo, Wilson, & and Hughes, 2010).

However, while these findings may have theoretical validity, empirical validity has only been established incrementally and in constrained circumstances. Findings have largely suggested that the presumed relationships are weaker than the unequivocal ones that conventional wisdom would suggest (Dietz, 2003; Dietz & Haurin, 2003; Green, 2001; Hubbard & Davis, 2002; Rohe, Van Zandt & McCarthy, 2001; Rossi & Weber, 1996). Nevertheless, some key relationships have been measured to be significant. Among the key social outcomes
resulting from homeownership are increased household stability, social involvement, local political participation and activism, environmental awareness, child outcomes, health, crime and community characteristics (Dietz, 2003).

In studying these effects, researchers have identified several key demographic characteristics that correlate consistently with inclination towards becoming a homeowner. These are: household type (Li, 1977), foreign-born or native to the US (Painter, Gabriel & Myers, 2001 and Painter & Yu, 2010), area poverty rate (Cohen, Lindblad, Paik & Quercia, 2009), race (Deng, Ross & Wachter, 2003), income (Painter, Gabriel & Myers, 2001), and tenure in home (Rohe, Van Zandt, & McCarthy, 2001).

Moreover, the relationships that have been established most strongly are those that relate homeownership to an individual’s behavior or outcomes. The underlying assumption behind the research in this area is that when enough individuals undertake this behavior, a community’s level of the social change in question will change. This assumption has not been measured to as extensive a degree as the individual-level relationship, however, there is also a small body of research that tests whether this assumption is true. This research has found in that in some key ways, homeownership can have a spillover or multiplier impact on a community, inducing larger changes than just the aggregate of the individual changes (Dietz, 2003). On this particular level, I will focus the research in my paper.

**Causes of Volunteering**

A substantial amount of research has been done in the study of volunteering as it represents a measurable indicator of many sociological and psychological factors. Throughout
this research, volunteering is assumed to be “part of a general cluster of helping activities...[and] is typically proactive rather than reactive and entails some commitment of time and effort” (Wilson, 2000). The majority of this research has focused on exploring the various factors that would compel an individual to volunteer through individual-level research.

There are several demographic characteristics about a person that suggest that he or she would be more likely to volunteer. These are: having attained a high level of education (Brown, 1999), having a higher income (as an indicator of the person’s socioeconomic class) (Rotolo, Wilson & Hughes, 2010), the amount of free-time a person has, race (Musick, Wilson, & Bynum Jr., 2000), living as a part of a family unit (as an indicator of types of activities that a person may be engaged with, particularly whether or not there are school-aged children) (Brown, 1999), age (as an indicator of the stage where the person is in life) (Wilson, 2000).

There are also several characteristics of the environment in which an individual finds him or herself that are associated with varying levels of volunteerism. The first of these is being part of a wide social network, since being asked directly to volunteer increases volunteering activity, and the larger a social network, the more likely that a person will be asked directly (Wilson, 2000). Also, communities with lower poverty rates see higher volunteer rates (Corporation for National and Community Service, Office of Research and Policy, 2010). Finally, the presence of a large foreign-born population is a negative predictor of volunteering (Sundeen, Garcia, & Raskoff, 2009).
Rationale Behind the Relationship Between Homeownership and Volunteering

Now understanding more clearly the mechanisms associated with changes in homeownership and volunteering, we can examine the theory and research that suggests the two are related. There are several theoretical reasons that suggest that a person who is a homeowner will volunteer more than that person did before becoming a homeowner and more than a neighbor who rents. First, volunteering typically is employed in projects that improve a community’s quality. In turn, these improvements usually have a positive effect on property within that community. Though everyone in a community benefits from community-wide improvements, only the homeowners stand to benefit financially. Thus, it follows that they would be more induced to volunteer, as the return to such activity is more valuable to them than to renters (Hoff & Sen, 2005). Moreover, since this investment is fixed in location, homeowners are particularly motivated to volunteer in order to improve the environment around their investment (Dietz, 2003). As such, it might follow that the value of a person’s home is an indicator of the degree to which they might be induced to volunteer (Rotolo, Wilson & Hughes, 2010).

Another related reason that homeownership is likely to predict volunteering is that homeownership often serves as an indicator of socioeconomic class. When people purchase a home, it suggests that they belong to a certain class, and as class is a predictor of volunteering, it is likely that those who are homeowners will also be volunteers (Rotolo, Wilson & Hughes, 2010).

A third relationship at work is that as homeownership increases the length of time a person lives in a community, that person’s social net grows wider. Since a wider social net is a
predictor of more frequent volunteering activity, it follows that homeownership would increase volunteering (Janoski, Musick, & Wilson, 1998; Rotolo, Wilson, & and Hughes, 2010).

Finally, a fourth aspect to this relationship speaks to the community-wide effects of homeownership. There are distinct impacts on the neighborhoods where homeownership is common, and those impacts can come to define the norms that members of a community are expected to follow (Dietz, 2003). Volunteering and civic engagement can be adopted as one such norm and become adopted by a whole community as homeownership grows, even among those who are not homeowners themselves.

**CONCEPTUAL FRAMEWORK, DATA AND METHODS**

**Conceptual Framework**

Though the relationships between homeownership and volunteering have a wide array of explanations, for this study, I will employ a conceptual framework that bases the relationship between homeownership and volunteering on two key mechanisms (See Figure 1 for a summary of these mechanisms).

**Figure 1: Diagram of Conceptual Framework**
First, an increase in the financial stake that a homeowner has in a community prompts him or her to value time spent volunteering more than a person who does not have a financial stake, and thus, will engage more frequently in volunteering activities. Second, homeowners increase the amount of time they spend in a community because of the high transaction costs associated with selling a home and buying a new one. This increase in time in one place helps the homeowner build a wider social network, which is a key predictor of increased volunteer activity (Wilson, 2003). Underlying these two relationships are correlations between several demographics and homeownership and volunteering. That is, both homeownership and volunteering are often predicted by the same demographics. These relationships are summarized in Table 1.

Table 1: Anticipated effects of demographics associated with volunteering and homeownership

<table>
<thead>
<tr>
<th>Variable</th>
<th>Predicted correlation with volunteering</th>
<th>Predicted correlation with homeownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volunteer Rate</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Homeownership rate</td>
<td>Positive</td>
<td>-</td>
</tr>
<tr>
<td>Household type</td>
<td>Positive</td>
<td>Positive</td>
</tr>
<tr>
<td>Foreign-born population</td>
<td>Negative</td>
<td>Negative</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>Negative</td>
<td>Negative</td>
</tr>
<tr>
<td>Age</td>
<td>Positive</td>
<td>None</td>
</tr>
<tr>
<td>Race</td>
<td>Positive</td>
<td>Positive</td>
</tr>
<tr>
<td>Time spent commuting</td>
<td>Negative</td>
<td>None</td>
</tr>
<tr>
<td>Income</td>
<td>Positive</td>
<td>Positive</td>
</tr>
<tr>
<td>Value of home</td>
<td>Positive</td>
<td>None</td>
</tr>
<tr>
<td>Tenure in community</td>
<td>Positive</td>
<td>Positive</td>
</tr>
</tbody>
</table>

While these relationships have been examined in many ways at the individual level and in very constrained geographic circumstances, little investigation has been conducted to measure whether, across communities, these relationships are valid. In this study, I will undertake such
an investigation, examining rates and averages across 195 Metropolitan Statistical Areas in the US, testing whether the aggregate volunteer rate of a community can be explained by rate of homeownership.

**Hypotheses**

The volunteer rates across cities in the US vary widely—the rates across MSAs in this sample vary from 12.5% to 60.3%. This paper will examine the extent to which this variation is explained by variations in homeownership rates. In studies at the individual level, a positive association has been found between homeownership and volunteering, and I anticipate that my analysis will show a similar relationship. Thus, my hypotheses for this study are as follows:

- **Hₐ**: Homeownership rates, after controlling for financial and demographic characteristics of a city, have a positive association with rates of volunteering.
- **H₀**: Homeownership rates, after controlling for financial and demographic characteristics of a city, have no association with rates of volunteering.

**Dataset Descriptions**

In this paper, I will use two datasets to evaluate the relationship between homeownership and volunteering. To examine volunteering, I will use the Volunteering in America dataset, collected from 2007 and 2009 by the Corporation for Community and National Service. To examine homeownership and all control variables I will use data collected from 2006 to 2008 as a part of the American Community Survey, collected by the US Census Bureau.

*Volunteering in America*
The Volunteering in America dataset is updated annually in conjunction with the Current Population Survey (CPS)—a survey administered by the US Census Bureau for the Bureau of Labor Statistics. The CPS, a project that has been ongoing for over 50 years, reaches out to 60,000 different households each month, collecting data on around 100,000 individuals, to understand the characteristics of the labor force in the U.S. This survey collects information on individuals who are potentially a part of the labor force: respondents are at least 15 years old and not institutionalized (though data is only published on those 16 and older). Every September, since 2002, a supplement to the survey has been included asking individual respondents about their volunteering activities. According to the CNCS website, “Volunteers are considered individuals who performed unpaid volunteer activities through or for an organization at any point during the 12-month period, from September 1 of the prior year through the survey week in September of the survey year.” The questions included in this supplement prompt respondents to recall any unpaid work, however infrequent, they may have performed with an organized group such as a school, church, neighborhood association or a child’s athletic team, and then examine the degree of the respondents’ involvement with these groups. The data from this supplement does not include a measure of volunteer activity performed more informally, such as running errands for an elderly neighbor.

The data collected in the CPS survey are designed to be generalizable to the national population. The data on the volunteering supplements has been aggregated by CNCS into different units of analysis, allowing for the examination of volunteer information by city, state or Metropolitan Statistical Area—a larger geographic unit comprised of adjacent smaller units that are economically and socially integrated with one another. However, the size of one year’s
supplement (100,000 respondents) poses sample size problems to the comparison across cities, states and MSAs. In order to enhance the validity of the measures, the responses to the 2007, 2008 and 2009 supplements have been pooled by CNCS. Additionally, after pooling and aggregating into MSAs, CNCS found the sample sizes within some MSAs to be too small to be statistically valid, so those MSAs have been dropped from the sample. While 366 MSAs have been defined by the Office of Management and Budget, the Volunteering in America dataset presents pooled data on 198 MSAs. In this paper, I will examine the pooled responses at the MSA level.

American Community Survey

Conducted by the U.S. Census Bureau, the American Community Survey is a randomized survey designed to collect information annually on the national population in areas relevant to a variety of policy questions. The survey begins with a sample of three million households and addresses many household characteristics, ranging from education, marital status, household composition, to income, housing expenses, household facilities, and number of rooms in the household. Within all these measures, several typical control variables are relevant to this study, such as education, income, race, ethnicity, etc. Additionally, this dataset includes information about the key independent variable within this paper: homeownership. Furthermore, there are also measures of controls that are important to consider when looking at this topic, including length of time living in a home and the length of time spent commuting.

This data has been analyzed by the U.S. Census Bureau and, as with the Volunteering in America dataset, is available at the MSA level. Also, this data has been pooled into a three-year composite, and I will be examining the data presented in the 2006, 2007, 2008 composite.
Though the dates of this pool do not appear to line up perfectly with the dates of the Volunteering in America pool, in fact, they cover activity and community demographics from the same years. As the Volunteering in America questionnaire asked respondents to reflect on activities during the previous year, the respondents’ data is about activities performed in 2006, 2007 and 2008.

Analysis Plan

Models

To test these hypotheses, I will use ordinary least squares regression methods to estimate the following relationship:

\[
Volunteer rate = a + \text{homeownership rate} + \text{demographic characteristics of city} + \text{financial characteristics of city} + \mu
\]

I expect a significant number of demographic variables and financial variables are endogenous to one another, to homeownership and to volunteering. A study with such high associations between variables runs the risk of either over-controlling and introducing multicollinearity or under-controlling, and making it difficult to isolate the effect of the relevant variables. I intend to test four models in my analysis. Doing so will allow me to understand through which mechanisms my key independent variable—homeownership rate—affects the dependent variable—volunteer rate. The four models are:

Model 1:

\[
Volunteer rate = a + \text{homeownership rate} + \mu
\]

Model 2:

\[
Volunteer rate = a + \text{homeownership rate} + \text{demographic characteristics of city} + \mu
\]
Model 3:
\[ \text{Volunteer rate} = a + \text{homeownership rate} + \text{financial characteristics of city} + \mu \]

Model 4:
\[ \text{Volunteer rate} = a + \text{homeownership rate} + \text{demographic characteristics of city} + \text{financial characteristics of city} + \mu \]

A comparison of the ways homeownership rate responds when controlled for either demographic characteristics, financial characteristics or both will provide insight into the ways that homeownership does or does not affect volunteering.

**Variables**

**Volunteer rate**

Rate of volunteering will be the dependent variable in this study. All the above models will attempt to explain the variations of volunteer rate. Volunteer rate, in this study, is defined as a percentage of the people living within an MSA who fit into the CNCS definition of a volunteer—someone who “performed unpaid volunteer activities through or for an organization at any point during the 12-month period, from September 1 of the prior year through the survey week in September of the survey year.” The volunteer rates of the MSAs in my study range from 13 to 64. They are reported as a percentage of the total population of the MSA. The mean volunteer rate is 28.8.

**Homeownership rate**

This is the most critical independent variable of the study. This study will define the homeownership rate of an MSA to be the percentage of total housing units within an MSA that
are occupied by their owners. This variable is gathered from the ACS data. In my study, the homeownership rates across the MSAs range from 51.9 to 81.7. The mean value is 68.1.

**Demographic characteristics of city**

Several demographic characteristics are highly correlated with homeownership and volunteering. I intend to control for these characteristics in order to isolate the effect that homeownership has on volunteering. The demographic characteristics I intend to examine are the following: education level, poverty rate, racial composition of the MSA, household type, nationality and age. Education is measured in my data as the percentage of people in an MSA who have a bachelor’s degree or higher level of educational attainment. The poverty rate is the percentage of people in a given MSA whose income over the 12 months prior to the survey was below the poverty threshold. Race is measured as the percentage of white people living in an MSA. Household type is measured as the percentage of households within the MSA that are families. Nationality is represented in broad terms—the survey presents the percentage of the total population of the MSA who were born in another country. Finally, age is represented as the median age of the total MSA population. All of these characteristics have known associations with volunteering—appropriately controlling will help identify more precisely the effect of homeownership on volunteering.

**Financial characteristics of city**

Several financial characteristics also have high associations with both homeownership and volunteering. The financial characteristics I intend to examine are the following: median income of residents of the MSA (measured in 2008-inflation adjusted dollars, including income
and benefits), the average time (in minutes) that MSA residents spend commuting to work, the median dollar value of owner-occupied units in the MSA, and average tenure in a home for all residents--both renters and owners (measured as the percentage of people in the MSA who have lived in their current home since 2001, or less than 9 years). To more clearly interpret these variables, I will scale two to more understandable levels—home value and income. Both will be divided by 10,000.

By controlling for these characteristics, I will be able to understand whether the effect that a community’s homeownership rate has on its volunteering rate works through these characteristics, or if, in fact, the homeownership rate has an independent effect. Moreover, controlling for these characteristics will help me understand the validity of the theoretical construct on which this study is based. If a positive association can be established between home value, homeownership and volunteering, it suggests that there is validity to their theory that an increase in the financial stake in the community is likely to increase time spent volunteering. Similarly, a negative relationship between tenure (as the variable measures low-tenure residents), homeownership and volunteering would validate the claim that the more time spent in a community increases the likelihood of volunteering. That is, as the percentage of people living in their current homes for less than 9 years decreases (meaning, their tenure has continued growing longer, moving them out of this category), we should see an increase in volunteering in order to validate the theoretical construct of this study.
RESULTS AND ANALYSIS

Descriptive Statistics

Before analyzing regression results, an understanding of the descriptive statistics of my sample is necessary in order to have a more thorough understanding of the variables and their interpretations.

While the original Volunteering in America dataset contained information on 198 MSAs, three MSAs appeared to be categorized differently in this dataset than in the American Community Survey data. This is likely due to the fact that OMB adjusts the parameters that define MSAs as populations shift and change. To be conservative in my estimates, I dropped the three data points that appeared to be slightly misaligned across datasets. As such, I am left with 195 records in my study. I do not anticipate that this exclusion will introduce substantial bias into my study. For a list of the MSAs included in this study, please see Appendix A. Beyond this element, my datasets do not have any missing data, as I am comparing the average characteristics of one MSA to the average characteristics of another. There could have been missing values in the initial surveys that introduced bias into the estimates of each MSA’s characteristics, but as the surveys are conducted nationally and administered and analyzed by statisticians in the federal government, these biases have likely been addressed.

As mentioned (and shown in Table 2), the average volunteer rate across all the MSAs is 28.8. With a minimum rate of 13 and a maximum rate of 64, there is sufficient variation in this variable to explore using regression analysis.
Table 2. Descriptive Statistics of Volunteer Rate

<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>195</td>
<td>28.8</td>
<td>7.095</td>
<td>13</td>
<td>64</td>
</tr>
</tbody>
</table>

The average homeownership rate across the 195 MSAs in this study is 68.1 (See Table 3). A minimum value of 51.9 and a maximum value of 81.7 suggest that there is less variation across MSAs in homeownership rate than in volunteer rate, but the variance is still large enough to analyze. These numbers suggest that homeownership is much more prevalent in MSAs than is volunteering.

Table 3. Descriptive Statistics of Homeownership Rate

<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>195</td>
<td>68.1</td>
<td>5.069</td>
<td>51.9</td>
<td>81.7</td>
</tr>
</tbody>
</table>

Descriptive statistics of the demographic control variables (See Table 4) suggest that in an average MSA, based on this sample of data:

- 66.3% of households are families
- 9.0% of the population is foreign-born
- 9.3% of the population earned income lower than the poverty level
- The median age of the population is 36.55
- 78.8% of the population is white
- 27.3% of the population has at least a bachelor’s degree
Table 4. Descriptive Statistics of Demographic Control Variables

<table>
<thead>
<tr>
<th>Demographic</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household type</td>
<td>195</td>
<td>66.3</td>
<td>3.898</td>
<td>53.7</td>
<td>80.3</td>
</tr>
<tr>
<td>Nationality</td>
<td>195</td>
<td>9.0</td>
<td>7.256</td>
<td>1.0</td>
<td>36.9</td>
</tr>
<tr>
<td>Poverty</td>
<td>195</td>
<td>9.3</td>
<td>3.311</td>
<td>3.7</td>
<td>30.6</td>
</tr>
<tr>
<td>Age</td>
<td>195</td>
<td>36.6</td>
<td>3.261</td>
<td>24.4</td>
<td>46.8</td>
</tr>
<tr>
<td>Race</td>
<td>195</td>
<td>78.8</td>
<td>11.883</td>
<td>22.6</td>
<td>95.9</td>
</tr>
<tr>
<td>Education</td>
<td>195</td>
<td>27.3</td>
<td>7.258</td>
<td>12.7</td>
<td>55.9</td>
</tr>
</tbody>
</table>

The descriptive statistics of the financial control variables (See Table 5) suggest that, based on this sample, in an average MSA:

- Workers spend 23 minutes commuting to work
- The median income (including benefits) of the population is $51,988.13
- The median home value is $209,016.50
- 57.4% of people have lived in their current homes for 9 years or less

Table 5. Descriptive Statistics of Financial Control Variables

<table>
<thead>
<tr>
<th>Financial characteristic</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time spent commuting</td>
<td>195</td>
<td>23.00</td>
<td>3.16</td>
<td>16.00</td>
<td>34.50</td>
</tr>
<tr>
<td>Income</td>
<td>195</td>
<td>5.198813</td>
<td>.894214</td>
<td>3.019</td>
<td>8.6806</td>
</tr>
<tr>
<td>Value of home</td>
<td>195</td>
<td>20.90615</td>
<td>12.36545</td>
<td>7.19</td>
<td>73.97</td>
</tr>
<tr>
<td>Tenure in home</td>
<td>195</td>
<td>57.40</td>
<td>6.08</td>
<td>42.20</td>
<td>76.10</td>
</tr>
</tbody>
</table>

**Regression Results**

By conducting an ordinary least squares regression analysis in Stata software, I was able to test my hypotheses and better understand the different elements that play a role in the relationship between homeownership and volunteering. In addition to the models I described earlier, I also ran a regression to look at the effect that all my control variables have on
volunteering in the absence of homeownership. The results of this regression are represented in the final column of Table 6.

Table 6. Regression Results for Ordinary Least Squares Analysis of Predictors of Volunteering

<table>
<thead>
<tr>
<th></th>
<th>Model 1: Basic</th>
<th>Model 2: Demographic control</th>
<th>Model 3: Financial controls</th>
<th>Model 4: Full model</th>
<th>Model 4: Full model, absent homeownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeownership rate</td>
<td>0.225**</td>
<td>0.223*</td>
<td>0.260**</td>
<td>0.228*</td>
<td>___</td>
</tr>
<tr>
<td></td>
<td>(0.0994)</td>
<td>(0.119)</td>
<td>(0.103)</td>
<td>(0.128)</td>
<td></td>
</tr>
<tr>
<td>Household type</td>
<td>___</td>
<td>0.129</td>
<td>___</td>
<td>0.479***</td>
<td>0.651***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.163)</td>
<td></td>
<td>(0.180)</td>
<td>(0.152)</td>
</tr>
<tr>
<td>Nationality</td>
<td>___</td>
<td>-0.337***</td>
<td>___</td>
<td>-0.321***</td>
<td>-0.356***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0773)</td>
<td></td>
<td>(0.0946)</td>
<td>(0.0932)</td>
</tr>
<tr>
<td>Poverty</td>
<td>___</td>
<td>-0.754***</td>
<td>___</td>
<td>-0.916***</td>
<td>-0.988***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.156)</td>
<td></td>
<td>(0.236)</td>
<td>(0.234)</td>
</tr>
<tr>
<td>Age</td>
<td>___</td>
<td>-0.828***</td>
<td>___</td>
<td>-0.829***</td>
<td>-0.652***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.171)</td>
<td></td>
<td>(0.181)</td>
<td>(0.153)</td>
</tr>
<tr>
<td>Education</td>
<td>___</td>
<td>0.334***</td>
<td>___</td>
<td>0.551***</td>
<td>0.584***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0853)</td>
<td></td>
<td>(0.0995)</td>
<td>(0.0984)</td>
</tr>
<tr>
<td>Time spent commuting</td>
<td>___</td>
<td>___</td>
<td>-1.289***</td>
<td>-0.389**</td>
<td>-0.333**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.159)</td>
<td>(0.163)</td>
<td>(0.161)</td>
</tr>
<tr>
<td>Income</td>
<td>___</td>
<td>___</td>
<td>5.307***</td>
<td>-3.225**</td>
<td>-3.189**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.780)</td>
<td>(1.248)</td>
<td>(1.256)</td>
</tr>
<tr>
<td>Value of home</td>
<td>___</td>
<td>___</td>
<td>-0.0962</td>
<td>0.215***</td>
<td>0.171***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0602)</td>
<td>(0.0639)</td>
<td>(0.0592)</td>
</tr>
<tr>
<td>Tenure in home</td>
<td>___</td>
<td>___</td>
<td>0.162**</td>
<td>-0.0852</td>
<td>-0.0866</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0737)</td>
<td>(0.0705)</td>
<td>(0.0710)</td>
</tr>
<tr>
<td>Race</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>0.111***</td>
<td>0.137***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.0408)</td>
<td>(0.0383)</td>
</tr>
<tr>
<td>Constant</td>
<td>13.46**</td>
<td>36.17**</td>
<td>5.776</td>
<td>25.47</td>
<td>20.68</td>
</tr>
<tr>
<td>Observations</td>
<td>195</td>
<td>195</td>
<td>195</td>
<td>195</td>
<td>195</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.026</td>
<td>0.478</td>
<td>0.352</td>
<td>0.603</td>
<td>0.596</td>
</tr>
</tbody>
</table>

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Model 1: Homeownership and Volunteering

The coefficient estimate of homeownership is statistically significant at the 5% level in a two-sided test, and a 2.5% level in my one-sided hypothesis. It suggests that with an increase of
1 percentage point of the homeownership rate, an increase in the volunteer rate by .225 percentage points could be expected. Also, the regression itself is statistically significant. Yet the model shows a very low R-squared value. While the coefficient on homeownership is both signed as I predicted and statistically significant, the low R-squared value suggests there is little practical significance of the relationship between homeownership and volunteering absent any other control variables. That is, only 2.6% of the variation in volunteering across the MSAs in my sample is explained by the variation in homeownership rates across the MSAs.

Model 2: Demographic Controls

After controlling for demographic characteristics of MSAs, homeownership continues to have a very similar effect on volunteering as that identified in Model 1. That is, the coefficient has a very similar magnitude and it remains statistically significant (as this is a one-sided test, a p-value of .1 is the equivalent of a p-value of .05 on a two-sided test, and thus significant for this study). The R-squared value increased substantially, meaning this combination of variables taken together better explain the difference in volunteer rates.

Of the six dependent variables, four have estimated coefficients that substantiate previous research and support my theoretical construct. Household type did not present a meaningful relationship, as its coefficient fails to achieve statistical significance. Also, the variable for age did not estimate the relationship to volunteering that was predicted. Generally, volunteering is thought to increase with age, but in this sample, it appears that an increase in the median age of an MSA would predict a decline in its volunteer rate.
Model 3: Financial Controls

Under this model that employed financial controls, the estimated coefficient on homeownership rose in magnitude very slightly and remains statistically significant. Compared to Model 2, this model’s dependent variables explain less variation in the volunteer rates, indicated by an R-squared value of .352. Homeownership, time spent commuting and income all have estimates the support my theoretical construct and align with my predictions based on previous research.

However, home value and tenure both fail to support the theoretical construct. Home value, in this model, is statistically insignificant, and so cannot support the assertion that a homeowner’s financial stake in a community is likely to increase volunteering. Tenure in home, while statistically significant, in fact suggests the opposite relationship than predicted. As the percentage of people in an MSA who have lived in their homes for less than 9 years declines, the average length of time that people spend in homes is increasing. It was predicted that longer time in one place is associated with a rise in volunteering. The coefficient estimate suggests, however, that as the percentage of people in their homes for less than 9 years increases, volunteering is predicted to increase.

Model 4: Full Model

This model contains all the variables of interest of this study, is statistically significant, and explains a substantial amount of the variation in volunteer rates (R-squared = .603). Alongside the set of full controls, homeownership has a magnitude of .228—nearly the same as
the magnitudes under Models 1 and 2. It is statistically significant, and thus supports my alternative hypothesis, though the minimal change in magnitude in the presence of many controls suggests that the relationship between homeownership and volunteering has not strengthened in the presence of the controls.

While many of the controls continued to support the theoretical construct of this study (these are household type, nationality, poverty, education, time spent commuting and race), some fail to support the expected results. As in Model 2, age continues to defy my expectations by estimating a negative relationship. Also, household income switched sign so rather than having a large, positive association with volunteering, it instead has a large negative association when all other variables were included in the regression. Value of the home, however, became a stronger estimate in the presence of these varied controls. The estimated coefficient is both positive and statistically significant, suggesting that in fact, as median home value rises by $10,000 in an MSA, the volunteer rate can be predicted to rise by .215 percentage points. Unfortunately, tenure remains problematic, and is no longer statistically significant.

**Model 4: Full Model Absent Homeownership**

Through Model 1’s low R-squared value, and the consistent magnitude of the estimated coefficient, I felt that homeownership’s role in explaining variations in volunteer rates across MSAs was not growing in the presence of the additional control variables. To test this, I ran the final regression in Table 6—the full model, absent homeownership rate. This regression showed an R-squared value very close to that in Model 4 and few other variables changed sign, significance or magnitude. This leads me to conclude that though the coefficient on
homeownership was significant in all models, the association between homeownership and volunteer rate did not change in strength despite all the controls.

**Additional Results**

The variables in Model 3 appeared to present some of the largest problems statistically. Also, they undermine two of the key aspects of my theoretical construct—the relationship between home value and volunteering, and the association between tenure and volunteering. To better understand these regressions, I examined Model 3 in greater detail, and identified the problems as coming in large part from the income variable.

**Income**

To understand the roots of the problems with Model 3, I looked at the correlations between the different variables. I found a correlation of .7526 between income and home value. This is not particularly surprising—in communities where the average income is high, living expenses, including the cost of housing, also tend to be higher. High correlation between dependent variables can negatively impact regression results in many ways and lead to inaccurate estimates. To compensate for this high correlation, I re-ran Model 3 without including income as a control. The results are presented in Table 7.

The exclusion of income led to a large drop in the R-squared value, and it led to very little change in the estimated coefficient on tenure, but it did have some positive results. The estimated coefficient on homeownership nearly doubled and the estimated coefficient on home value became statistically significant and positive. Thus, in the absence of income as a control
variable, the relationship between home value and volunteering that underpinned my theoretical construct is substantiated.

Table 7. Results of Ordinary Least Squares Regression: Model 3 With and Without Income

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 3: Full</th>
<th>Model 3: Without Income as a Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeownership rate</td>
<td>0.260**</td>
<td>0.457***</td>
</tr>
<tr>
<td></td>
<td>(0.103)</td>
<td>(0.110)</td>
</tr>
<tr>
<td>Time spent commuting</td>
<td>-1.289***</td>
<td>-0.981***</td>
</tr>
<tr>
<td></td>
<td>(0.159)</td>
<td>(0.169)</td>
</tr>
<tr>
<td>Income</td>
<td>5.307***</td>
<td>__</td>
</tr>
<tr>
<td></td>
<td>(0.780)</td>
<td></td>
</tr>
<tr>
<td>Value of home</td>
<td>-0.0962</td>
<td>0.190***</td>
</tr>
<tr>
<td></td>
<td>(0.0602)</td>
<td>(0.0480)</td>
</tr>
<tr>
<td>Tenure in home</td>
<td>0.162**</td>
<td>0.168**</td>
</tr>
<tr>
<td></td>
<td>(0.0737)</td>
<td>(0.0821)</td>
</tr>
<tr>
<td>Constant</td>
<td>5.776</td>
<td>6.625</td>
</tr>
<tr>
<td></td>
<td>(9.542)</td>
<td>(10.62)</td>
</tr>
<tr>
<td>Observations</td>
<td>195</td>
<td>195</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.352</td>
<td>0.193</td>
</tr>
</tbody>
</table>

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

A similar examination of income in the full model (the results of which are listed in Table 8) shows that with the omission of income as a control, home value maintains its significance in the full model, even if it decreases in magnitude.
**Table 8. Results of Ordinary Least Squares Regression: Model 4 With and Without Income**

<table>
<thead>
<tr>
<th></th>
<th>Model 4: Full</th>
<th>Model 4: Without Income as a Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeownership rate</td>
<td>0.228*</td>
<td>0.222*</td>
</tr>
<tr>
<td></td>
<td>(0.128)</td>
<td>(0.129)</td>
</tr>
<tr>
<td>Household type</td>
<td>0.479***</td>
<td>0.275*</td>
</tr>
<tr>
<td></td>
<td>(0.180)</td>
<td>(0.164)</td>
</tr>
<tr>
<td>Nationality</td>
<td>-0.321***</td>
<td>-0.353***</td>
</tr>
<tr>
<td></td>
<td>(0.0946)</td>
<td>(0.0953)</td>
</tr>
<tr>
<td>Poverty</td>
<td>-0.916***</td>
<td>-0.503***</td>
</tr>
<tr>
<td></td>
<td>(0.236)</td>
<td>(0.176)</td>
</tr>
<tr>
<td>Age</td>
<td>-0.829***</td>
<td>-0.773***</td>
</tr>
<tr>
<td></td>
<td>(0.181)</td>
<td>(0.183)</td>
</tr>
<tr>
<td>Race</td>
<td>0.111***</td>
<td>0.129***</td>
</tr>
<tr>
<td></td>
<td>(0.0408)</td>
<td>(0.0408)</td>
</tr>
<tr>
<td>Education</td>
<td>0.551***</td>
<td>0.393***</td>
</tr>
<tr>
<td></td>
<td>(0.0995)</td>
<td>(0.0798)</td>
</tr>
<tr>
<td>Time spent commuting</td>
<td>-0.389**</td>
<td>-0.514***</td>
</tr>
<tr>
<td></td>
<td>(0.163)</td>
<td>(0.159)</td>
</tr>
<tr>
<td>Income</td>
<td>-3.225**</td>
<td>_</td>
</tr>
<tr>
<td></td>
<td>(1.248)</td>
<td></td>
</tr>
<tr>
<td>Value of home</td>
<td>0.215***</td>
<td>0.152**</td>
</tr>
<tr>
<td></td>
<td>(0.0639)</td>
<td>(0.0600)</td>
</tr>
<tr>
<td>Tenure in home</td>
<td>-0.0852</td>
<td>-0.0249</td>
</tr>
<tr>
<td></td>
<td>(0.0705)</td>
<td>(0.0676)</td>
</tr>
<tr>
<td>Constant</td>
<td>25.47</td>
<td>20.67</td>
</tr>
<tr>
<td></td>
<td>(16.04)</td>
<td>(16.17)</td>
</tr>
<tr>
<td>Observations</td>
<td>195</td>
<td>195</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.603</td>
<td>0.588</td>
</tr>
</tbody>
</table>

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

**Tenure**

The other critical area where additional regression analysis was necessary was with the variable for tenure. I began by checking for correlations between homeownership and tenure, as homeownership and tenure have been shown in previous research not to be independent from one another. However, in this sample, the correlation between the two was just .0637—a correlation not likely to be causing major problems. Following this, I ran a basic regression of tenure on volunteering, the results of which are shown in Table 9. The coefficient on tenure is
not a statistically significant estimate in this sample, so no conclusions can be drawn about the relationship between volunteering and tenure in this sample.

Table 9. Results of Ordinary Least Squares Regression of Tenure in Home on Volunteering Rate

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure</td>
<td>0.0744</td>
<td>(0.0838)</td>
</tr>
<tr>
<td>Constant</td>
<td>24.51***</td>
<td>(4.843)</td>
</tr>
<tr>
<td>Observations</td>
<td>195</td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>0.004</td>
<td></td>
</tr>
</tbody>
</table>

In the absence of a strong central correlation, such as between home value and income, I re-ran Model 3 absent the tenure control, to test whether any other major relationships would become evident. The results of this analysis are in Table 10. In the absence of tenure, few other estimates changed and those changed saw only slight adjustments. Homeownership rate underwent one of the more notable shifts, decreasing in magnitude when tenure was removed. This could suggest that by controlling for tenure, the effect of homeownership rate on volunteering is isolated and is larger than when tenure is uncontrolled.
Table 10. Results of Ordinary Least Squares Regression: Model 3 without Tenure

<table>
<thead>
<tr>
<th></th>
<th>Model 3: Full</th>
<th>Model 3: Without Tenure as a Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeownership rate</td>
<td>0.260** (0.103)</td>
<td>0.185* (0.0978)</td>
</tr>
<tr>
<td>Time spent commuting</td>
<td>-1.289*** (0.159)</td>
<td>-1.292*** (0.160)</td>
</tr>
<tr>
<td>Income</td>
<td>5.307*** (0.780)</td>
<td>5.325*** (0.788)</td>
</tr>
<tr>
<td>Value of home</td>
<td>-0.0962 (0.0602)</td>
<td>-0.0992 (0.0608)</td>
</tr>
<tr>
<td>Tenure in home</td>
<td>0.162** (0.0737)</td>
<td>—</td>
</tr>
<tr>
<td>Constant</td>
<td>5.776 (9.542)</td>
<td>20.30*** (6.963)</td>
</tr>
<tr>
<td>Observations</td>
<td>195</td>
<td>195</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.352</td>
<td>0.335</td>
</tr>
</tbody>
</table>

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Additionally, I ran the full model absent tenure in order to see what effect the exclusion of tenure would have on the other estimates. Results from this regression are found in Table 11. These results are even less revealing than those from the analysis of tenure under Model 3. In this case, the coefficient on homeownership rate does not change at all—in fact it increases by .001. All other variables show minimal change in estimated coefficients.
Table 11. Results of Ordinary Least Squares Regression: Model 4 without Tenure

<table>
<thead>
<tr>
<th></th>
<th>Model 4 Full</th>
<th>Model 4 Without Tenure as a Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeownership rate</td>
<td>0.228*</td>
<td>0.229*</td>
</tr>
<tr>
<td></td>
<td>(0.128)</td>
<td>(0.128)</td>
</tr>
<tr>
<td>Household type</td>
<td>0.479***</td>
<td>0.476***</td>
</tr>
<tr>
<td></td>
<td>(0.180)</td>
<td>(0.180)</td>
</tr>
<tr>
<td>Nationality</td>
<td>-0.321***</td>
<td>-0.352***</td>
</tr>
<tr>
<td></td>
<td>(0.0946)</td>
<td>(0.0913)</td>
</tr>
<tr>
<td>Poverty</td>
<td>-0.916***</td>
<td>-0.816***</td>
</tr>
<tr>
<td></td>
<td>(0.236)</td>
<td>(0.221)</td>
</tr>
<tr>
<td>Age</td>
<td>-0.829***</td>
<td>-0.743***</td>
</tr>
<tr>
<td></td>
<td>(0.181)</td>
<td>(0.167)</td>
</tr>
<tr>
<td>Race</td>
<td>0.111***</td>
<td>0.115***</td>
</tr>
<tr>
<td></td>
<td>(0.0408)</td>
<td>(0.0407)</td>
</tr>
<tr>
<td>Education</td>
<td>0.551***</td>
<td>0.535***</td>
</tr>
<tr>
<td></td>
<td>(0.0995)</td>
<td>(0.0988)</td>
</tr>
<tr>
<td>Time spent commuting</td>
<td>-0.389**</td>
<td>-0.402**</td>
</tr>
<tr>
<td></td>
<td>(0.163)</td>
<td>(0.163)</td>
</tr>
<tr>
<td>Income</td>
<td>-3.225**</td>
<td>-2.726**</td>
</tr>
<tr>
<td></td>
<td>(1.248)</td>
<td>(1.179)</td>
</tr>
<tr>
<td>Value of home</td>
<td>0.215***</td>
<td>0.212***</td>
</tr>
<tr>
<td></td>
<td>(0.0639)</td>
<td>(0.0639)</td>
</tr>
<tr>
<td>Tenure in home</td>
<td>-0.0852</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>(0.0705)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>25.47</td>
<td>14.79</td>
</tr>
<tr>
<td></td>
<td>(16.04)</td>
<td>(13.39)</td>
</tr>
<tr>
<td>Observations</td>
<td>195</td>
<td>195</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.603</td>
<td>0.599</td>
</tr>
</tbody>
</table>

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

**DISCUSSION AND RECOMMENDATIONS**

My findings suggest that the relationship between homeownership and volunteering at a community-wide level, while statistically significant, are so small as to be unusable in a practical sense. Analysis of the relationship between these variables at the community level has not often been undertaken, so this study lays a foundation upon which further research can be built. This analysis also finds that many variables included as controls predicted a similar relationship at the community-wide level as predicted in research performed at the individual level. These findings uphold part of the theoretical construct I proposed, but not all of it. Because of this, further
research into the precise nature of the relationship between the control variables and volunteering would help develop a construct that better explains the relationship between homeownership and volunteering. In the following sections, I will more closely examine the reasons for these findings and consider specific steps to build on this research and actionable ways to use these findings.

**Limitations**

This study had several limitations that may have contributed to the lack of clarity in the results. In explaining these limitations, I will identify potential solutions for future research.

One critical limitation is the way in which tenure is measured. The theoretical construct was based upon the relationship between time in one MSA and volunteering more than the relationship between time in one house and volunteering, which is what this study analyzed. A future study could include a variable that addresses length of time in one MSA, if the MSA remains the unit of analysis. Additionally, an examination of those living in one home for nine years or less may not have been the most useful analysis. It is entirely plausible that a person begins volunteering more after only three, four or five years. If this is the case, the effect was not observable in this study because of examination of the percentage of people living in their homes for nine years or less. A study that looks at those living in one place for shorter periods of time may reveal more about the nature of the relationship between volunteering and tenure in one place.

Another critical limitation is in the variable for volunteering. In this case, it counts strictly “official” measures of volunteering. Daily, people assist one another in ways that may not be considered volunteering in an official sense, such as shoveling a neighbor’s walkway. These
activities are not captured in this measure of volunteering, yet presumably, they achieve similar effects as formal volunteering activity. A study that considers volunteering in a more broadly defined way could add depth to this analysis. Also, this study examined the volunteer rate as the dependent variable. An examination of this research question using other measures of volunteering, such as the average number of hours spent volunteering per MSA could also add depth to this study.

A third limitation of this study was the unit of analysis. In considering each MSA equally, I was able to examine the relative strength of the associations between variables within each unit. Yet many of the MSAs are substantially larger in population than others. Thus, the association of variables to one another on a national level may be quite different. If national policy decisions are being made based on this research approach, then more consideration should be given to the relative size of each of the MSAs in the study. Also, it is possible that by examining the average characteristics of each MSA, a critical amount of variation in variables was lost. Another approach to answering this question would be to run this study in a way that takes into account all the data points for each MSA instead of just the averages. This would mean that the research question would involve an individual unit of analysis instead of looking at the ways that changes in an MSA’s characteristics and dynamics are associated with each other. However, this examination might include some essential data variation that will help better answer the research question.
Policy Implications

The purpose of this study was to understand the extent to which there is empirical validity to the relationship between homeownership and volunteering at a community-wide level. If such a relationship exists, my belief was that homeownership changes would alter the volunteer rates observed, suggesting that the housing market’s challenges could have an effect that extends beyond just the changes felt by individual homeowners themselves. This empirical relationship could not be substantiated in a practical and meaningful way through this sample. This presents two key policy implications.

First, policy should not be made on the assumption that homeownership itself has substantial benefits for a community at large. The more likely relationship is that homeownership brings benefits to the individuals who buy homes, and the individuals who are prone to buying homes (because of a penchant for, among other things, setting down roots, assuming responsibility, seeking ownership over things around them) bring benefits to the community at large, such as increased volunteering because of their personal characteristics. When supporting homeownership-related policy and pursuing an increased level of volunteering, it appears more important to be mindful of who receives the benefits of such programs, and who is moving into and out of a community because of housing choices than merely focusing on increasing overall rates of homeownership and rates of volunteering. Policy in these two areas should be designed in a way to target specific individual-level behaviors, and not community-wide indicators.

While the community-wide relationship between volunteering and homeownership could not be established practically, there remains evidence in my model that community-wide
economic indicators do have a relationship with volunteering. Educational attainment, poverty alleviation, and working closer to home all had positive associations with volunteer rates. These are components of a community’s characteristics that are particularly threatened during a difficult economic time. Thus there is an imperative for policy makers to confront these threats in order to avoid harm to a community’s existing levels of volunteering. Admittedly, sustaining volunteering is a secondary goal to fixing these aspects in their own right. Yet, this study clearly suggests that if community-wide economic indicators collectively suffer, the volunteer rate will suffer as well.

Beyond these two policy actions, this study has also highlighted a few areas where further research would be of use. The imperative for this study was an acknowledgement that the traditional expectations of homeownership are changing. This study suggests that homeowners’ changed circumstances will have minimal spillover effect onto their community’s level of volunteering. Nevertheless, these changed expectations will likely have a deep impact on the families themselves. Further research at the family level should be undertaken to better understand not just the benefits of becoming a homeowner, but the effects that loss of homeownership can have on a family. With a clearer understanding of these effects, a more nuanced understanding of the relationship between homeownership and volunteering will become clear and can guide policy makers going forward.
Appendix A: List of Metropolitan Statistical Areas included in this study

Akron, OH Metro Area
Albany-Schenectady-Troy, NY Metro Area
Albuquerque, NM Metro Area
Allentown-Bethlehem-Easton, PA-NJ Metro Area
Ann Arbor, MI Metro Area
Anniston-Oxford, AL Metro Area
Appleton, WI Metro Area
Asheville, NC Metro Area
Atlanta-Appling County, GA Metro Area
Atlantic City, NJ Metro Area
Augusta-Richmond County, GA-S.C. Metro Area
Austin-Round Rock, TX Metro Area
Bakersfield, CA Metro Area
Baltimore-Towson, MD Metro Area
Bangor, ME Metro Area
Barnstable Town, MA Metro Area
Baton Rouge, LA Metro Area
Beaumont-Port Arthur, TX Metro Area
Bellingham, WA Metro Area
Bend, OR Metro Area
Billings, MT Metro Area
Binghamton, NY Metro Area
Birmingham-Hoover, AL Metro Area
Bloomington, IN Metro Area
Boise City-Nampa, ID Metro Area
Boston-Cambridge-Quincy, MA-NH Metro Area
Boulder, CO Metro Area
Bridgeport-Stamford-Norwalk, CT Metro Area
Brownsville-Harlingen, TX Metro Area
Buffalo-Niagara Falls, NY Metro Area
Burlington-South Burlington, VT Metro Area
Canton-Massillon, OH Metro Area
Cape Coral-Fort Myers, FL Metro Area
Cedar Rapids, IA Metro Area
Champaign-Urbana, IL Metro Area
Charleston-North Charleston, SC Metro Area
Charleston, WV Metro Area
Charlotte-Gastonia-Concord, NC-SC Metro Area
Chattanooga, TN-GA Metro Area
Chicago-Naperville-Joliet, IL-IN-WI Metro Area
Cincinnati-Middletown, OH-KY-IN Metro Area
Cleveland-Elyria-Mentor, OH Metro Area
Coeur d'Alene, ID Metro Area
Colorado Springs, CO Metro Area
Columbia, SC Metro Area
Columbus, OH Metro Area
Corpus Christi, TX Metro Area
Dallas-Fort Worth-Arlington, TX Metro Area
Davenport-Moline-Rock Island, IA-IL Metro Area
Dayton, OH Metro Area
Deltona-Daytona Beach-Ormond Beach, FL Metro Area
Denver-Aurora, CO Metro Area
Des Moines, IA Metro Area
Detroit-Warren-Livonia, MI Metro Area
Dover, DE Metro Area
Duluth, MN Metro Area
Durham, NC Metro Area
Eau Claire, WI Metro Area
El Paso, TX Metro Area
Erie, PA Metro Area
Eugene-Springfield, OR Metro Area
Fargo, ND-ND Metro Area
Fayetteville-Springdale-Rogers, AR-MO Metro Area
Fayetteville, NC Metro Area
Flint, MI Metro Area
Fort Collins-Loveland, CO Metro Area
Fort Smith, AR-OK Metro Area
Fort Wayne, IN Metro Area
Fresno, CA Metro Area
Grand Rapids-Wyoming, MI Metro Area
Greeley, CO Metro Area
Green Bay, WI Metro Area
Greensboro-High Point, NC Metro Area
Greenville, SC Metro Area
Harrisburg-Carlisle, PA Metro Area
Hartford-West Hartford-East Hartford, CT Metro Area
Hickory-Morganton-Lenoir, NC Metro Area
Holland-Grand Haven, MI Metro Area
Honolulu, HI Metro Area
Houston-Baytown-Sugar Land, TX Metro Area
Huntsville, AL Metro Area
Indianapolis, IN Metro Area
Iowa City, IA Metro Area
Jackson, MI Metro Area
Jackson, MS Metro Area
Jacksonville, FL Metro Area
Janesville, WI Metro Area
Joplin, MO Metro Area
Kalamazoo-Portage, MI Metro Area
Kankakee-Bradley, IL Metro Area
Kansas City, MO-KS Metro Area
Knoxville, TN Metro Area
Lafayette, LA Metro Area
Lakeland-Winter Haven, FL Metro Area
Lancaster, PA Metro Area
Lansing-East Lansing, MI Metro Area
Las Cruces, NM Metro Area
Las Vegas-Paradise, NV Metro Area
Lawrence, KS Metro Area
Lexington-Fayette, KY Metro Area
Little Rock-North Little Rock, AR Metro Area
Los Angeles-Long Beach-Santa Ana, CA Metro Area
Louisville, KY-IN Metro Area
Madison, WI Metro Area
Medford, OR Metro Area
Memphis, TN-MS-AR Metro Area
Miami-Fort Lauderdale-Miami Beach, FL Metro Area
Milwaukee-Waukesha-West Allis, WI Metro Area
Minneapolis-St Paul-Bloomington, MN-WI Metro Area
Mobile, AL Metro Area
Modesto, CA Metro Area
Monroe, LA Metro Area
Montgomery, AL Metro Area
Myrtle Beach-Conway-Myrtle Beach, SC Metro Area
Naples-Marco Island, FL Metro Area
Nashville-Davidson-Murfreesboro, TN Metro Area
New Haven, CT Metro Area
New Orleans-Metairie-Kenner, LA Metro Area
New York-Northern New Jersey-Long Island, NY-NJ-PA Metro Area
Norwich-New London, CT-RI Metro Area
Ocala, FL Metro Area
Ogden-Clearfield, UT Metro Area
Oklahoma City, OK Metro Area
Olympia, WA Metro Area
Omaha-Council Bluffs, NE-IA Metro Area
Orlando, FL Metro Area
Oxnard-Thousand Oaks-Ventura, CA Metro Area
Palm Bay-Melbourne-Titusville, FL Metro Area
Panama City-Lynn Haven, FL Metro Area
Pensacola-Ferry Pass-Brent, FL Metro Area
Peoria, IL Metro Area
Philadelphia-Camden-Wilmington, PA-NJ-DE Metro Area
Phoenix-Mesa-Scottsdale, AZ Metro Area
Pittsburgh, PA Metro Area
Port St. Lucie-Fort Pierce, FL Metro Area
Portland-South Portland, ME Metro Area
Portland-Vancouver-Beaverton, OR-WA Metro Area
Poughkeepsie-Newburgh-Middletown, NY Metro Area
Providence-Fall River-Warwick, RI-MA Metro Area
Provo-Orem, UT Metro Area
Pueblo, CO Metro Area
Racine, WI Metro Area
Raleigh-Cary, NC Metro Area
Reading, PA Metro Area
Reno-Sparks, NV Metro Area
Richmond, VA Metro Area
Riverside-San Bernardino-Ontario, CA Metro Area
Roanoke, VA Metro Area
Rochester, NY Metro Area
Rockford, IL Metro Area
Sacramento--Arden-Arcade-Roseville, CA Metro Area
Salina, KS Metro Area
Salt Lake City, UT Metro Area
San Antonio, TX Metro Area
San Diego-Carlsbad-San Marcos, CA Metro Area
San Francisco-Oakland-Fremont, CA Metro Area
Santa Barbara-Santa Maria-Goleta, CA Metro Area
Santa Barbara-Santa Maria-Goleta, CA Metro Area
San Jose-Sunnyvale-Santa Clara, CA Metro Area
Sarasota-Bradenton-Venice, FL Metro Area
Savannah, GA Metro Area
Scranton-Wilkes-Barre, PA Metro Area
Seattle-Tacoma-Bellevue, WA Metro Area
Shreveport-Bossier City, LA Metro Area
Sioux Falls, SD Metro Area
South Bend-Mishawaka, IN-MI Metro Area
Spartanburg, SC Metro Area
Spokane, WA Metro Area
Springfield, MA-CT Metro Area
Springfield, MO Metro Area
St. Cloud, MN Metro Area
St. Louis, MO-IL Metro Area
Stockton, CA Metro Area
Syracuse, NY Metro Area
Tampa-St. Petersburg-Clearwater, FL Metro Area
Trenton-Ewing, NJ Metro Area
Tucson, AZ Metro Area
Tulsa, OK Metro Area
Utica-Rome, NY Metro Area
Vallejo-Fairfield, CA Metro Area
Victoria, TX Metro Area
Virginia Beach-Norfolk-Newport News, VA-NC Metro Area
Visalia-Porterville, CA Metro Area
Waco, TX Metro Area
Washington-Arlington-Alexandria, DC-VA-MD-WV Metro Area
Waterloo-Cedar Falls, IA Metro Area
Wichita, KS Metro Area
Winston-Salem, NC Metro Area
Worcester, MA-CT Metro Area
York-Hanover, PA Metro Area
Youngstown-Warren-Boardman, OH-PA Metro Area
BIBLIOGRAPHY


