

HOMEOWNERSHIP AND CIVIC ENGAGEMENT
IN LOW-INCOME URBAN NEIGHBORHOODS:
A Longitudinal Analysis

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A Longitudinal Analysis**

Abstract

This paper tests whether there is a causal relationship between homeownership and two forms of civic engagement. We explore three theoretical linkages between homeownership and civic engagement: financial self-interest, the dwelling as a bundle of interests, and residential mobility. Using a sample of low- and moderate-income homeowners and a matched sample of renters, we analyze data on neighborhood group membership, social activity, homeownership status, and mobility over a 4-year period. We find that renters who became homeowners during the study period were no more involved in neighborhood organizations prior to homeownership than renters who did not become homeowners. However, involvement increased significantly after these initial renters became homeowners. We also find that long-time homeowners who move are more likely to get involved in community organizations in their new neighborhoods, while renters who relocate are not. Conversely, we find that homeowners are less likely to socialize frequently with their neighbors than renters. We discuss the implications of this finding for policies aimed at promoting homeownership in lower-wealth urban neighborhoods.

Keywords: Homeownership, civic engagement, low-income families

Introduction

Civic engagement is the cornerstone of a healthy democracy and vibrant community. One of the justifications given for policy interventions designed to promote and reward homeownership has been that increasing homeownership rates not only benefits individuals but communities as well by increasing citizen participation in civic organizations. In this research, we explore several theories about the relationship between homeownership and civic engagement in lower-income neighborhoods. Homeownership has been linked to a variety of positive social outcomes such as increased community involvement, more diverse social capital networks, and greater political participation (Dietz and Haurin 2003; DiPasquale and Glaeser 1999; Haurin, Parcel, and Haurin 2002). However, neighborhood disadvantage has been linked to equally important negative outcomes such as lower levels of trust, lack of citizen participation in community groups, and decreased involvement in community life (Wilson 1996; Wilson and Kelling 1982; Skogan 1990; Furstenburg 1993). It is possible that, rather than fostering civic engagement, promoting homeownership among lower-income families may lock them in disadvantaged neighborhoods where they are more likely to withdraw from community life than engage. In light of the recent sharp decline in the U.S. housing market, it is important to theoretically and empirically re-evaluate the relationship between homeownership and civic engagement.

Contributions

Lower-income citizens have historically had lower levels of civic engagement than the general population, thus excluding them from fully voicing their interests in the democratic process. Research has shown that people who participate actively in civic life tend to have higher incomes and are more likely to be white (Verba, Schlozman, and Brady 1995). Because civic engagement is a precursor to civic influence, the relative lack of engagement among lower-income and minority populations directly translates to less political and social influence. It is therefore important to

understand what factors can increase civic engagement among traditionally marginalized populations. Identifying ways to increase civic engagement within this population can lead to policies which promote active citizenry and participatory democracy.

In this paper, we use longitudinal data to test whether homeownership influences civic engagement in low-income neighborhoods. This study offers two important contributions, one theoretical and one methodological. First, we focus on lower-income homeowners in order to consider whether they experience the same social benefits from homeownership that middle-class buyers do. Until recently, homeownership was widely viewed as an asset-building strategy that provided a pathway to upward mobility for poor families (Johnson and Sherraden 1992). However, recently some scholars have suggested that the costs associated with homeownership make it burdensome for lower-income families who may struggle with maintenance and repair costs and who may see little or no property value increases (Krugman 2008a, 2008b). While the financial costs and benefits of homeownership are important, it is also beneficial to weigh the social costs and benefits when evaluating policies aimed at promoting homeownership among the poor. Our research speaks directly to this debate by focusing on whether homeownership is linked with increased civic engagement within low-income neighborhoods.

Second, we offer an innovative method for addressing the self-selection bias that has prompted many recent critiques of studies on the social impacts of homeownership (Dietz and Haurin 2003). We present a reverse longitudinal model – a logistic regression model run “backwards” so the outcome variable is from an earlier point in time than the independent variables. In the language of intervention research, this model evaluates whether the treatment and control groups differed on the outcome of interest prior to the intervention (purchasing a home). For this study, the model tests whether homeownership status at year four predicts differences in civic engagement at year one. This analytic strategy indicates whether people who became homeowners

during the study period were more involved in local organizations *prior to* purchasing a home. We supplement the reverse longitudinal model by replicating the findings using propensity score analysis.

Civic Engagement

Civic engagement requires time and resources, but provides important benefits to individuals and their communities. As McBride, Sherraden, and Pritzker (2004) explain, “Civic engagement...is considered a means for developing skills and capacity, increasing tolerance among peoples, building community, supporting collective action on common goals, and girding democratic governance through representation of interests.” Communities with high levels of civic engagement have fewer social problems, lower crime rates, and are more cohesive.

We define civic engagement as citizen participation in civic organizations or processes. The key aspect of civic engagement is that it represents engagement between the individual and a larger group, organization, or social process. This definition encompasses what researchers have identified as two distinct forms of civic engagement: expressive engagement and instrumental engagement (Swaroop and Morenoff 2006; Son and Lin 2008). Expressive civic engagement consists of actions motivated by a sense of identity as a member of a neighborhood or community. Examples of expressive civic engagement include having frequent conversations with neighbors or organizing community social events. Instrumental civic engagement, on the other hand, consists of goal-oriented actions which address the functional concerns of residents in a community. Joining a neighborhood organization and participating in local politics are examples of instrumental civic engagement¹. These forms of civic engagement are similar to what other scholars label social and political engagement (Putnam 2000).

¹ Some forms of expressive engagement may result in problem solving, and most types of instrumental engagement do include some amount of socializing. For example, one may talk with a neighbor about a barking dog problem, or make small talk with a friend at a political meeting. The key distinction is the general intent; activities which are primarily motivated by problem-solving are instrumental while those motivated by community identity are expressive.

Civic engagement, both expressive and instrumental, not only produces tangible benefits within a community but also contributes to the formation of trust and shared norms that, in turn, foster social capital (Putnam 2000). Over the past fifteen years, much of the discussion on civic engagement has focused on whether or not it is declining in western society (Putnam 1995; Ladd 1996; Perrin 2006). While this debate certainly has merit, it remains difficult to answer unless scholars have a clearer understanding of what factors produce civic engagement and why. In this research, we evaluate whether there is a relationship between homeownership and civic engagement. We focus on expressive and instrumental civic engagement by measuring whether people converse often with their neighbors and whether they participate in an organized neighborhood group.

Homeownership and Civic Engagement

Prior research on the link between homeownership and civic engagement among lower-income populations has produced mixed results, and many earlier studies have been critiqued for methodological flaws, limited data, and imprecise measures (Herbert and Belsky 2006). Rohe and Stegman (1994) found that homeowners were more likely to join neighborhood-based groups, but not other types of community organizations. A pair of studies by Pratt (1986; 1987) found that homeowners were more active in several types of community groups, but these studies failed to account for selection bias. It is possible that people who become homeowners were more involved in community groups even before purchasing a home. Based on their review of existing research on the relationship between homeownership and civic engagement, Dietz and Haurin (2003) concluded that, “Given the mixed empirical results and the questionable methodology of many studies where sorting, endogeneity, and unobserved variables are not accounted for, no strong conclusions can be drawn at this time.”

While a link between homeownership and civic engagement has not been conclusively established, several theories can potentially explain why they may be related. Within economics,

scholars have tended to focus on financial explanations and presumed that homeowners have a financial motive to be more engaged in their communities (Dietz and Haurin 2003). Other researchers have proposed a more nuanced theory that views dwellings as a collection of interests which combine to promote or suppress engagement (Davis 1991; Saunders 1978). Returning to Putnam's (1995; 2000) theory, however, homeownership could be associated with declines in civic engagement due to social isolation.

Financial Self-Interest

Much of the early research on homeownership and civic engagement focused on the financial motivations that may prompt homeowners to become involved in local civic organizations. Unlike a renter, a home owner has a financial motive to maintain desirable neighborhood conditions since the value of his/her home is partially tied to the larger community (Rohe and Stewart 1996). For this reason, civic participation yields not only quality-of-life benefits but also long-term economic benefits to home owners. Renters, conversely, experience the same quality-of-life benefits but not the economic ones. In fact, one study even suggested that renters may experience economic consequences to civic participation because rent costs are likely to increase in neighborhoods with active civic organizations (DiPasquale and Glaeser 1999).

If the relationship between homeownership and civic engagement is rooted in financial self-interest, we would expect homeowners to have higher rates of instrumental engagement but not expressive engagement since only instrumental civic activities should raise property values. While financial motives may explain why a homeowner would lobby to have a local park built, the link is much less clear when considering forms of expressive civic engagement such as socializing with neighbors.

Dwellings as Bundles of Interests

Rather than focusing only on a financial explanation for why homeowners may be more

involved in civic life, other scholars have proposed a theory based on an understanding of “interests” in general. In *Contested Ground* (1991), John Emmeus Davis describes domestic property as a “bundle of interests”; acquiring a given property also means acquiring the bundle of interests (p. 44-60). Two types of interests are particularly relevant when examining homeownership and civic engagement: use interests and exchange interests. A use interest is based on expected use, such as an interest in forming social ties with neighbors because doing so provides opportunities to socialize, or an interest in building a neighborhood playground because it will give children a place to play. Both renters and owner-occupiers have use interests which motivate civic engagement. However, owner-occupiers may have more use interests than renters if they expect to remain in the same dwelling longer. Returning to the example of the local park, a renter may expect to move out of the neighborhood after a short period of time, so efforts spent to build the local park would bring only temporary returns. The owner-occupier, however, may have more of an interest in putting forth an effort to build the park since he or she expects to use it for many years.

Exchange value interests, according to Davis, vary between renters and homeowners. An exchange interest is an interest rooted in the exchange value (market value) of the property. This is akin to the financial self-interest motive for civic engagement described previously. Because renters do not own their dwellings and therefore can not sell them, they lack exchange value interests. This translates to a meaningful difference in behaviors; renters are unlikely to engage in civic activities aimed solely at increasing the exchange value of a dwelling.

When someone buys or rents a home, he or she does more than simply become the occupant of a physical structure. The person becomes the occupant of a unique package of property interests, both economic and non-economic, which are shaped by ownership (or lack thereof), neighborhood characteristics, and expected mobility. This combination of use interests and exchange interests influences behavior, in this case motivating homeowners toward higher levels of

expressive and instrumental civic engagement.

Residential Mobility

While compelling, the theory that homeownership is associated with increased civic engagement is far from universal. In his analysis of factors that have contributed to declines in civic engagement, Putnam (2000) specifically points to a rise in single-family homeownership as a key contributor and argues that homeowners are less involved in civic life. This argument hinges on different residential mobility patterns among homeowners and renters. Homeowners are significantly less mobile than renters; one study found the median length of time in a residence was two years for renters and eight years for homeowners (Rohe, Van Zandt, and McCarthy 2002). Prior research has found that, when controlling for actual neighborhood conditions, long-term residents are more likely to report feeling satisfied with their neighborhoods (Rohe and Stegman 1994). Even within low-income, disadvantaged neighborhoods, homeowners are more likely than renters to recommend their neighborhood as a good place to live (Yeo, Grinstein-Weiss, and Taylor 2010). It is possible that the decreased mobility of homeowners leads them to hold more favorable views of their communities and, in turn, perceive fewer problems which would necessitate instrumental forms of civic engagement such as participating in local politics or organizing a neighborhood watch group. Residents may be willing to get involved, but simply perceive no need to do so because they don't think there are community concerns which need to be resolved.

There has been some research to support this theory. According to research by Oliver (1999), political participation is lower in affluent cities than in middle-income cities because there are fewer problems and therefore less need to be engaged. Oliver concluded that "...contentment with local politics breeds apathy toward local affairs and lower participation." Similarly, Kim and Rokeach (2006) found that the longer people remained in a residence, the more likely they were to report a feeling of neighborhood belonging, but they were not more likely to actually participate in

neighborhood organizations. Homeowners may feel attached to their neighborhoods, but simply not perceive any significant problems which merit their attention.

While decreased residential mobility may decrease *instrumental* civic engagement among homeowners, it may conversely increase *expressive* civic engagement. Because homeowners are less mobile, they have more time to form social ties with their neighbors and are more likely to feel attached to their neighborhoods (Rohe, Van Zandt, and McCarthy 2002). Taylor (1996) found that “in more stable neighborhoods, residents feel closer to the community and to one another...” Kasarda and Janowitz (1974) similarly found that length of residence was the key factor predicting the strength and number of social ties people had with their neighbors. These social ties, in turn, helped to strengthen residents’ sense of attachment to the neighborhood. In summary, the decreased residential mobility of homeowners may lead them to perceive fewer neighborhood problems, prompting less instrumental civic engagement, yet feel closer to their neighbors, prompting more expressive engagement.

TABLE 1 ABOUT HERE

Potential Outcomes

Based on the theories outlined above, we present three possible outcomes, illustrated in Table 1. It is important to note that these theories are not mutually exclusive; civic engagement is far too complex an outcome to be attributable to a single cause. If the relationship between homeownership and civic engagement is explained by financial self-interest, we would expect homeowners to have higher levels of instrumental civic engagement than renters. We would not expect to see differences in expressive civic engagement between homeowners and renters.

If Davis’ view of property as a collection of interests holds, we expect homeowners to have higher rates of both instrumental and expressive civic engagement compared to renters. However,

we would also expect mobility to play a role in predicting civic engagement since the length of time someone expects to live in an area would directly affect the use value of getting involved in the neighborhood. Therefore both homeowners and renters who plan to move would have lower levels of civic engagement than people who do not move.

Finally, there is the theory that homeownership affects civic engagement by via decreased residential mobility. This theory predicts that homeowners will have lower levels of instrumental engagement because they perceive fewer neighborhood problems or conflicts to confront. However, they will have higher levels of expressive engagement than renters because their decreased mobility allows them to form stronger social ties with their neighbors.

We test these theories using several analytic approaches. We first run cross-sectional models to determine whether there is a correlation between homeownership and both types of civic engagement. We then employ longitudinal data to test whether homeowners were more engaged *before* they became homeowners and whether they subsequently became more engaged *after* purchasing a home. Third, we conduct three propensity score models to compare those findings with the findings with our approach to addressing selection bias, the reverse longitudinal model. Finally, we test whether residential mobility has a different impact on civic engagement for renters than for homeowners. More details about each of these models are presented in the Methods section below.

Data

The data used in this analysis were collected as a part of the Community Advantage Program (CAP). CAP began as a secondary mortgage market program developed out of a partnership between the Ford Foundation, Fannie Mae, and Self-Help, a leading community development financial institution. The goal of this program was to underwrite 30-year fixed-rate mortgages for families who otherwise would not qualify for a prime mortgage. In order to qualify for the program,

participants had to meet one of the following criteria: 1) have an annual income of no more than 80% of the area median income (AMI), 2) be a minority with an income not in excess of 115% of AMI, 3) purchase a home in a high-minority (>30%) or low-income (<80% of AMI) census tract and have an income not in excess of 115% of AMI. By the end of 2004, 28,573 families had purchased homes through CAP.

In 2004, we began conducting annual surveys with a panel of CAP participants to evaluate the impacts of homeownership on their lives. In order to facilitate this analysis, a random sample of CAP borrowers was selected to participate in the Community Advantage Panel Study (CAPS), a series of annual surveys. Once the sample of homeowners was selected, a comparison group of renters was matched to the homeowners based on neighborhood proximity and income. This matching was limited to the 30 metropolitan areas in the United States with the highest number of CAP owners. The renter sample was obtained by randomly selecting households who lived within the same census blocks² as already-enrolled homeowners, based on public telephone directory lists. Like the CAP homeowners, the renters had to have an annual income no more than 80% of AMI if white or no more than 115% of AMI if non-white. Respondents also had to be between 18 and 65 years old and pay rent to the owner of their residence.

The final year one (2004) sample was comprised of 3,743 homeowners and 1,530 renters. The year four sample included 2,079 homeowners and 903 renters. These returns represent an overall attrition rate of 44% for owners and 41% for renters. The majority of attrition, around 30% for both groups, occurred between the year one and year two surveys. As with most surveys, attrition is higher among minorities, respondents with less education, and those over age 40. The vast majority of attrition was due to respondents who could not be located; very few participants declined to be re-interviewed. For this analysis, we limit the sample only to those participants who

² When eligible renters could not be found within the census block, the radius was expanded up to four miles.

completed both the year one (2004) and year four (2007) surveys and were either homeowners or renters at both time points³. This resulted in a final sample size of 2,215.

In order to assess how CAPS compares to a random national sample, Riley and Ru (2009) compared the 2004 CAPS sample of homeowners with a sample of low-income homeowners who participated in the 2004 Current Population Survey (CPS). The socio-demographic composition of CAPS is very similar to the CPS sample. The CAPS sample of homeowners includes a greater percentage of minority respondents than the CPS sample of homeowners since one of the goals of the original program was to increase minority access to homeownership. The other notable difference between CAPS and CPS is that over 90% of CAPS homeowners are employed compared to only 70% of CPS low-income homeowners. We presume this is because all CAPS owners purchased their homes fairly recently and therefore had to have a steady source of income at that time, while the CPS owners likely include more retirees who purchased their homes much earlier.

TABLE 2 ABOUT HERE

Measures

Descriptive statistics for all measures are presented in Table 2. When applicable, statistics are presented for both year one and year four.

Dependent Variables

There are two dependent variables in this study: instrumental civic engagement and expressive civic engagement. We measure instrumental civic engagement as participation in any neighborhood group or organization. At both time points, respondents were asked, “Do you participate in any neighborhood groups?” We use a dichotomous indicator variable coded 1 if a respondent reports participating in such a group and 0 if s/he does not. At year one, 17% of participants were members of some kind of neighborhood group. This figure rose to 19% by year

³ Respondents who reported at either time point that they did not pay rent and did not own their residence were excluded from the analytic sample.

four. A total of 12.4% of respondents did not belong to a neighborhood group at year one but reported joining such a group by year four.

The second dependent variable is expressive civic engagement. This is measured as whether or not a respondent reports having frequent conversations with his/her neighbors. Respondents were asked “In the past month, how many times have you had a conversation with a neighbor? Would you say never, once or twice, once a week or less, or more than once a week?” We coded respondents as 1 if they reported having conversations with a neighbor more than once a week. All others were coded 0⁴.

Independent Variables

The key independent variables of interest in this study are homeownership status and mobility. We measure homeownership at year one with a dichotomous variable coded 1 for homeowners and 0 for renters. At the beginning of the study period, 1363 (61.5%) of respondents were homeowners. By year four, 146 of the renters had become homeowners and 97 of the original owners had returned to renting resulting in 1412 (63.7%) homeowners at year four.

FIGURE 1 ABOUT HERE

While our first model includes only the indicator variable for homeownership, the remaining models use a series of indicator variables to measure all possible homeownership and mobility trajectories over time. This creates six categories: owners who did not move during the study (44.4%), owners who moved but continued homeownership (12.8%), owners who moved and returned to renting (4.4%), renters who never moved (13.6%), renters who moved and continued renting (18.3%), and renters who became homeowners (6.6%). These categories are shown in Figure 1. The omitted category in our models is “renters who never moved”. These variables allow us to differentiate between homeownership and residential mobility effects on civic engagement.

⁴ The measure of frequent conversations with neighbors is collapsed to a 1/0 measure in order to be comparable to the 1/0 measure of neighborhood group membership.

Control Variables

All models include the following control variables which are likely correlated with both homeownership and civic engagement: age, race, marital status, income, employment status, gender, and education. We include age because older people are both more likely to be homeowners (Mingche 1977) and more likely to be involved in civic activities (Putnam 2000). Age is measured as a continuous variable. In order to correct for the skewed distribution of age, it is transformed to $1/\sqrt{\text{age}}$ in the regression models. This is an appropriate data transformation when the majority of variables are normally distributed (Tabachnick & Fidell 2007, p. 87).

We include a measure of race because it is also correlated with both homeownership and civic engagement. Minority families are more likely to rent instead of own, especially in urban communities (Massey 1990) and less likely to participate in civic activities, at least instrumental forms of civic engagement (Wilson 1987). Race is measured using three indicator variables: white, black, and other race. The reference category is white.

One of the strongest predictors of homeownership is marital status; married couples are much more likely to own homes than single people (Townsend 2002). Married people are also more likely to participate in voluntary associations (Schofer and Fourcade-Gourinchas 2001). Marital status is measured using the categories married, cohabiting, divorced, widowed, or single. The reference category is married.

We control for income using a continuous measure of total household annual income in \$10,000's. Income is obviously correlated with homeownership, since household debt-to-income ratio affects whether someone can obtain a mortgage. The higher a family's income, the more likely they are to qualify for a loan. Income is also correlated with civic engagement; people with higher incomes are more likely to get involved in their communities (Verba, Scholzman, and Brady 1995).

Likewise, employment status affects both one's ability to purchase a home and one's

likelihood of participating in civic activities, although findings have been mixed on the nature of the latter relationship. Some research has found that full-time workers are less likely to participate in voluntary activities (Burr, Caro, and Morehead 2002), while others have concluded that retirees participate less (Glaesar, Laibson, and Sacerdote 2000). Employment status is measured using indicator variables for employed full time, employed part-time, involuntarily unemployed, retired, and not in the paid labor force. The reference category in all models is “employed full-time”.

Prior research has found that women participate in voluntary associations more frequently than men (Smith 1994). Therefore, we include an indicator variable for gender coded 1 for female and 0 for male. Because cases in which data was provided by a proxy household member were excluded from this analysis, there is no change in the gender distribution of the sample over time.

People with advanced education are more likely to be politically active (Verba, Scholzman, and Brady 1995), so we control for the highest level of education received by the respondent. Education is measured using indicator variables for the highest level of education obtained by the respondent: high school degree or less, some college, 2-year college degree, 4-year college degree, and advanced/professional degree. The reference category is “high school degree or less”.

In addition to these standard controls, we also include some additional control variables that we believe potentially predict both homeownership and civic engagement. These include the number of adults in the home, number of children in the home, car ownership, and neighborhood disadvantage score.

We control for family composition by including continuous variables for the number of adults living in the home and the number of children in the home. The mean number of adults per home is 1.6-1.7 throughout the study. The mean number of children increased from 0.86 at year one to 1.01 at year four. These measures are included because family composition likely has an impact on the time a respondents has available to participate in civic activities. It would likely be

more difficult for a single parent to make time to attend a neighborhood group meeting than it would be for a married person without children.

The variable indicating car ownership measures not only economic status, but it also addresses the practical point that people are more inclined to join civic groups when they have personal transportation. While most respondents do have at least one car at year one, there was a fairly large (11%) decline in car ownership by year four. Nonetheless, the vast majority of respondents are car owners.

Finally, we control for neighborhood conditions by including an index score measuring concentrated neighborhood disadvantage (Sampson and Raudenbush 1999; Sampson, Morenoff, and Gannon-Rowley 2002). This score is calculated based on the census tract percentage of households below the poverty line, percent of unemployed adults within the tract, percentage of single-parent households, and percentage of families receiving public assistance. These four values are transformed to z-scores and then averaged. This score represents the presence of concentrated social and economic disadvantage within a specific neighborhood, a factor that may influence whether or not residents elect to join neighborhood-based community groups or organizations.

Methods

In order to take advantage of the longitudinal nature of these data, and to conduct a rigorous test of causality, we construct regression models testing both possible causal directions between homeownership and civic engagement. First, we run a logistic model predicting civic engagement at year one using a dichotomous measure of homeownership status (homeowner/renter).

Second, we run the same model predicting year one neighborhood group membership but instead of using year one homeownership status, we use eventual year four homeownership and mobility status. This model is our reverse longitudinal model which tests whether participants who were renters at year one and went on to become homeowners were more involved in localized civic

organizations *prior to* initiating homeownership. This analysis resolves a crucial question because a frequent critique of past studies has been that they lack baseline measures of the social outcomes theorized to be caused by homeownership. Homeownership may be significantly correlated with civic engagement, but if eventual homeowners were more engaged before buying a home then homeownership is not the causal factor. Because our model represents a unique way to evaluate selection, we also test the relationship between homeownership and civic engagement using three propensity score models, described in detail below. The reverse longitudinal model tests whether homeowners were more engaged prior to buying a home; the propensity score models test whether some characteristics (observed or unobserved) influence both selection in to homeownership and subsequent civic engagement.

Finally, we run logistic regression models predicting year 4 civic engagement using longitudinal data on homeownership and mobility over time. These models predict year four neighborhood group membership based on the homeownership and mobility trajectories across the study time frame. This model evaluates whether changes in homeownership or mobility lead to increases or decreases in civic involvement over time. As a corollary to this model, we run the same analysis on a sub-set of only those respondents who were not civically active. This tests whether changes in homeownership status or residential mobility can be a catalyst for non-participants to become active.

Propensity Score Models

Propensity score models aim to address the selection bias that is inherent in observational studies and which is not addressed using traditional regression models which rely on covariate control (Guo & Fraser, 2009). Researchers have identified two crucial flaws in the covariate control approach to modeling causality. First, the selection variable is specified by these models as exogenous but is actually endogenous. Sample selection should be explicitly modeled, and selection

effects should be taken into consideration when estimating causal impacts (Heckman, 1978, 1979). Second, the covariate control approach assumes that selection on the independent variable is uncorrelated with whether a respondent manifests the outcome. When this assumption is violated, as it often is, regression models yield biased and inconsistent estimation of the regression coefficients (Berk, 2004; Imbens, 2004; Rosenbaum & Rubin, 1983).

For the propensity score models, this study uses the Neyman-Rubin counterfactual framework (Neyman, 1923; Morgan & Winship, 2007; Rubin, 1974, 2006) to guide the theoretical model of causality. Within this framework, a *counterfactual* is a potential outcome that is not observed in the data. In order to evaluate the causal effect of a treatment, we must be able to evaluate the counterfactual - what outcome the treated participants would have manifested if they had not received treatment. In this study, the counterfactual is the level of civic engagement that the homeowners would have had if they had not become homeowners. A key assumption of the Neyman-Rubin counterfactual framework is that we can not assume that the counterfactual for the homeowners is the same as the observed outcome for the untreated participants (renters). Put simply, if the homeowners in this study had remained renters, they might still have different outcomes than the renters we observed.

We employ propensity score greedy matching (Rosenbaum & Rubin 1983, 1985), Mahalanobis metric matching (Cochran and Rubin 1973; Rubin 1976, 1979), and propensity score weighting (Rosenbaum 1987; Hirano, Imbens, and Ridder 2003). Greedy matching uses binary logistic regression to estimate propensity score of receiving treatment (i.e., owning a home). By definition, a propensity score is a conditional probability of a participant receiving treatment given observed covariates. In this study, the propensity score represents the probability a respondent is a homeowner given the following covariates: gender, race, marital status, family composition, income, employment status, and level of education. Following Rosenbaum and Rubin (1985), this study uses

the logit of the predicted probability of the logistic regression as a propensity score.

After calculating the propensity score for each participant, we matched the homeowners to renters based on the estimated propensity scores. The matching algorithm, nearest neighbor within a caliper matching (Rosenbaum & Rubin 1985), selects a control participant j as a match for treated participant i , if and only if the absolute distance of propensity scores between the two participants (i.e., the difference between propensity scores P_i and P_j) meets the following condition:

$$||P_i - P_j|| < \varepsilon,$$

where ε is a pre-specified tolerance for matching, or a caliper. Rosenbaum and Rubin (1985) suggest using a caliper size of a quarter of a standard deviation of the sample estimated propensity scores (i.e., $\varepsilon \leq .25\sigma_p$, where σ_p denotes standard deviation of the estimated propensity scores of the sample).

The second model, Mahalanobis metric matching, uses a different approach to also create a matched sample of homeowners and renters. This method requires researcher to first randomly order all participants and then calculate the distance between the first treated participants and all the controls. This distance is the Mahalanobis distance, calculated as:

$$(u - v)^T C^{-1} (u - v)$$

where u and v are values of the matching variables for the treated and control participants. In this analysis, we also include the propensity score, calculated as described previously, in the sample covariance matrix of matching variables. The control participant that minimizes the distance is selected as a match for the first treated case, and the process is repeated.

The third approach uses propensity score weighting, a method to incorporate the propensity scores to adjust for selection without reducing the overall sample size via matching. Rather than

using the logit of the predicted probability of the logistic regression as a propensity score, this method defines the propensity score as the estimated probability of owning a home $\hat{e}(x)$ (Rosenbaum 1987; Hirano and Imbens 2001). Sample weights are then created using the propensity score. Because we are interested in the overall affect homeownership has on civic engagement, we calculate weights for the average treatment effect (ATE) using the formula:

$$\omega(W, x) = \frac{W}{\hat{e}(x)} + \frac{1 - W}{1 - \hat{e}(x)}$$

TABLE 3 ABOUT HERE

Results

Table 2 presents the results of logistic regression models predicting instrumental and expressive civic engagement at year one based on homeownership status. Once cases with missing data are trimmed, the sample consists of 1813 respondents. The cross-sectional models indicate that homeownership has a large impact on instrumental engagement; homeowners are more than twice as likely as renters to belong to a neighborhood group. However, there is no relationship between homeownership and expressive engagement. The only variable which is significantly related to both forms of civic engagement is race. Blacks are more than twice as likely to participate in a neighborhood group, yet 25% less likely to talk with their neighbors more than once a week. While the variable for age is significant, the transformation on the variable means that the positive result indicates a negative effect so older respondents are less likely to be involved in a neighborhood group. Other significant, positive control variables are being single as opposed to married, voluntarily not working full time, or having an advanced degree. No covariates other than race were significant predictors of socializing frequently with neighbors.

While this model confirms that homeownership and neighborhood group membership are

correlated, it does not address the question of causality. It may be that homeownership causes people to get involved in neighborhood groups, but it also may be that homeowners were more involved in their communities prior to buying a house. We test this possibility through our reverse longitudinal models. Civic engagement at year one is regressed on the various homeownership and mobility outcomes measured at year four in order to test whether eventual homeowners were more involved before becoming homeowners.

As shown in Table 3, none of the homeownership and mobility groups are significantly related to having frequent conversations with neighbors. However, there were two significant differences in neighborhood group membership patterns among the various prospective homeownership and mobility groups. First, homeowners who never moved throughout the duration of the study were more likely to be involved in a neighborhood group from the outset than renters who did not move. It is reasonable to assume that homeowners who plan to remain in the same neighborhood for a long period of time would be more likely to join a local community group. Another possibility is that even when renters do not plan to move, others in the community still see them as transient residents and therefore do not seek out their involvement in neighborhood groups.

Second, renters who moved during the study period were significantly less likely to be involved in a neighborhood group even prior to moving. This finding suggests that renters who anticipate they will be moving in the future are less likely to get involved in a neighborhood group than less-transient renters since they do not plan on remaining in the neighborhood for a long time. This is not the case for mobile homeowners though. Homeowners who moved during the study period were no less likely than non-mobile renters to be members of a neighborhood group.

Taken together, these findings suggest that the apparent relationship between homeownership and neighborhood group membership presented in the cross-sectional model may actually involve both homeownership and mobility effects. Renters who anticipate moving in the

future are less involved with neighborhood groups even before they move, while homeowners who plan to stay in the same neighborhood for a long time become more involved. On the other hand, we find no evidence to support a similar pattern in the relationship between homeownership and socializing frequently with neighbors.

One important point to note is that the two indicator variables representing changes in homeownership status, owners who became renters and renters who became owners, were not significant in model 2. Renters who went on to become homeowners later in the study period were not more involved in their neighborhoods at year one compared to renters who remained renters throughout the study.

TABLE 4 ABOUT HERE

Table 4 presents the propensity score models predicting neighborhood group membership at year one. The nearest-neighbor within-caliper match yielded 344 matched owner-renter pairs for a sample size of 688. The Mahalanobis metric matching resulted in 256 matched pairs for a sample size of 512. The propensity score weighting used the full original sample of 1813. Across all three methods, homeownership has a significant positive effect ranging from 2.755 to 3.243. Race also has a significant effect just as in the cross-sectional models. Blacks are significantly more likely to participate in a neighborhood group than all other racial groups. Also replicating the findings in Table 3, people with advanced degrees were more likely to participate. Among the other tested covariates, employment status and education were significant in some, but not all, models. This is not unexpected, as each propensity score model has strengths and limitations based on the assumptions of the model. The key point to note is that all three propensity score models confirm the homeownership effect.

TABLE 5 ABOUT HERE

Table 5 presents the same three propensity score models, this time predicting expressive civic engagement. Again confirming the cross-sectional model, homeownership consistently has no significant impact on whether or not respondents have frequent conversations with their neighbors. None of the other covariates are consistently significant across all the models either, lending further evidence to the claim that instrumental and expressive civic engagement are driven by different factors.

Thus far, the models have indicated that homeownership predicts instrumental civic engagement, but mobility likely has an effect as well. We therefore run a final set of models to explore how homeownership and mobility over time affect civic engagement at year 4.

TABLE 6 ABOUT HERE

Table 6 presents the regression models predicting neighborhood group membership and conversations with neighbors at year four. The first two models include the full sample. The second set of models is limited only to people who were not members of a neighborhood group at year one (model 3) or did not have frequent conversations with their neighbors at year one (model 4). As shown in the full sample models, there is a significant difference between renters who became homeowners and renters who did not. Those who became homeowners during the study period were almost three times as likely to be members of a neighborhood group by year four. As shown previously in Table 3, however, they were not more likely to be members at year one before they became homeowners. This suggests a temporal order to events within the study period where homeownership precedes or closely coincides with increased neighborhood involvement.

Turning to expressive civic engagement, we also see that mobility has an effect on whether respondents have frequent conversations with neighbors. Compared to renters who did not move, owners who did not move were around 30% less likely to have frequent conversations with their neighbors. A similar pattern is found when comparing renters who did not move who owners who

did move; the owners were around 40% less likely to have frequent conversations with their neighbors. Finally, comparing mobile and non-mobile renters shows that mobile renters were also around 40% less likely to interact frequently with their neighbors.

Some of the significant control variables have changed between the year one and year four models. Black respondents were still more likely to be members of a neighborhood group, but those with higher incomes were more likely to members at year four but not year one. Among the employment status categories, only retirees remained more likely to be involved in a neighborhood group by year four. These changes are likely due to the fact that year one neighborhood group membership is a strong predictor of year four membership. In fact, the year one and year four models share the same group of significant predictors when year one membership is removed from the year four model.

Due to the strong relationship between year one membership and the year four outcome, the second set of models in Table 6 looks only at a sub-sample of those respondents who were not members of a neighborhood group or who did not have frequent conversations with their neighbors at year one to offer a clearer picture of whether homeownership can be a catalyst for civic engagement. These models show that renters who became homeowners during the study period, and who were not members of any neighborhood group at year one, were 4.5 times as likely to have joined a neighborhood group by year four compared to year one non-member renters to did not purchase a home. This is consistent with our other findings showing that homeownership comes before increased civic engagement.

A second important finding is that year one non-member homeowners who moved during the study period but did not change homeownership status were also more likely to join a neighborhood group after their move, as compared to renters who did not move. For homeowners who relocate, joining a neighborhood group may be a way to establish new community ties. Just as

buying a home may prompt a renter to increase his/her neighborhood involvement, moving to a new community may do the same for an established homeowner.

Looking at expressive civic engagement, we see the same pattern within the sub-sample as within the full sample. All respondents who were homeowners throughout the study period, whether they moved or not, were 54% to 59% less likely to have started having frequent conversations with their neighbors by year four.

Discussion

Based on this analysis, we conclude that understanding the relationship between homeownership and civic engagement requires a consideration of both homeownership and mobility patterns as well as a distinction between types of civic engagement. While homeownership predicts involvement in neighborhood organizations, this effect differs in meaningful ways depending on patterns of residential mobility. Renters who move are less likely to get involved in local groups, while homeowners who move are not. Conversely, homeowners who remain in the same home are more likely to participate in neighborhood groups, but this is not the case for renters who stay in the same residence. This is consistent with the financial self-interest theory and the bundle of interests theory, yet contradicts the residential mobility theory that predicted homeowners would be less involved in organized neighborhood groups because they would perceive fewer problems within their neighborhoods. We find no evidence to support the theory that homeownership breeds apathy or disengagement from instrumental forms of civic participation.

Turning to expressive civic engagement, we find mixed results. At year one, there is no association between homeownership and whether a respondent has frequent conversations with neighbors, and this is confirmed by the propensity score analysis. At year four, we find that homeowners are less likely than non-mobile renters to have regular conversations with their neighbors. This outcome was not predicted by any of the three theories we tested, indicating that

the mechanisms which can explain instrumental civic engagement do a poor job of explaining expressive civic engagement. One possible explaining could be dwelling type; renters are more likely to live in multi-family housing units with facilitate regular interactions with neighbors more so than single-family detached homes. We suggest that future research should consider the relationship between dwelling type and expressive civic engagement.

This research also points to the importance of considering mobility when examining causes of civic engagement, particularly instrumental civic engagement. Our findings indicate that homeowners and renters are affected differently by residential mobility. For homeowners, moving may prompt them to become more involved in neighborhood groups as a way to establish ties with others and integrate in a new community. Renters who move, however, are less likely to turn to civic participation as a way to build new social network ties. This may be indicative of overall differences in long-term mobility patterns and the frequency with which renters move as compared to homeowners. The findings may also stem from different expectations that existing residents have of homeowners and renters. Whether they plan to move or not, residents may expect that renters will move more often and therefore be less inclined to solicit their participation in neighborhood groups.

Given the recent downturn in the United States housing market, policymakers have increasingly asked whether policies aimed at promoting homeownership among lower-income families continue to be beneficial. Are there non-financial benefits which make homeownership beneficial for families and communities? We conclude that entry in to homeownership can provide a catalyst for increased instrumental civic engagement with neighborhood groups and organizations. Findings demonstrate that renters who become homeowners were not more involved in their neighborhoods than other renters prior to purchasing a home, but their likelihood of such involvement increased significantly after they purchased a home. This is particularly the case for

renters who were not active in local groups prior to homeownership; their likelihood of such participation increases four-fold after they buy a house. Similarly, homeowners who return to renting are no more or less likely to be involved in neighborhood groups than people who have never been homeowners. Findings support the claim that policies aimed at increasing access to homeownership can help foster a more vibrant civic life in lower-income neighborhoods, but it is important that such policies provide a platform for sustained homeownership rather than simply increasing access.

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TABLES AND FIGURES

Table 1: Expected Relationships between Homeownership and Civic Engagement

	Instrumental civic engagement	Expressive civic engagement
Financial self-interest	+	(no effect)
Collection of interests	+	+
Residential stability	-	+

Table 2: Descriptive Statistics (n=2215)

Variable	Year 1 (2004)			Year 4 (2007)		
	Freq.	Percent	Mean	Freq.	Percent	Mean
Neighborhood group member (instrumental engagement)	375	17%		425	19%	
Talk frequently with neighbors (expressive engagement)	891	40%		790	36%	
Homeowner Y1	1363	62%				
Owner no moves Y1 to Y4				983	44%	
Renter no moves Y1 to Y4				301	14%	
Renter became homeowner				146	7%	
Owner became renter				97	4%	
Owner moved Y1 to Y4				283	13%	
Renter moved Y1 to Y4				405	18%	
Age at Y1			35.9			40.1
White	1257	57%				
Black	584	26%				
Other race	370	17%				
Male	883	40%				
Female	1332	60%				
Married	805	36%		915	41%	
Single	445	20%		516	23%	
Divorced	385	17%		511	23%	
Cohabiting	181	8%		176	8%	
Widowed	54	2%		92	4%	
Adults in home			1.63			1.73
Children in home			0.86			1.01
Employed full-time	1663	75%		1639	74%	
Employed part-time	117	5%		88	4%	
Unemployed	132	6%		122	6%	
Retired	86	4%		126	6%	
Not in labor force	235	11%		235	11%	
Income (in \$1000s)			4.16			4.02
HS degree or less	703	32%		703	29%	
Some college	680	28%		440	25%	
2-year degree	288	13%		309	16%	
4-year degree	447	19%		437	20%	
Advanced degree	186	8%		234	11%	
Own a car	2179	98%		1973	89%	
Tract population density			3356.9			3027.6
Tract neighborhood disadvantage			0.0547			-0.0046

Figure 1: Homeownership and Mobility Distribution, Year 1 to Year 4

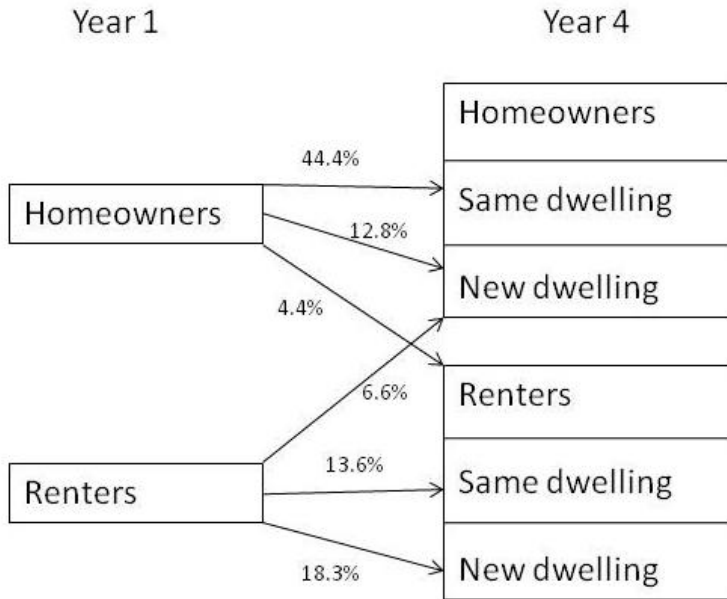


Table 3: Odds Ratios of Instrumental and Expressive Civic Engagement, Year One Outcomes

	Cross-Sectional Models		Reverse Longitudinal Models	
	Neighborhood group	Talk to neighbors	Neighborhood group	Talk to neighbors
Homeowner (year 1)	2.126*** (4.16)	1.072 (0.56)		
Owner, no moves ¹			1.653* (2.14)	0.951 (-0.30)
Renter became owner ¹			0.706 (-0.98)	0.842 (-0.80)
Owner became renter ¹			0.790 (-0.54)	1.276 (0.85)
Owner, moved ¹			1.537 (1.43)	0.904 (-0.47)
Renter, moved ¹			0.573* (-2.24)	0.870 (-0.89)
Female	0.953 (-0.30)	0.983 (-0.16)	0.956 (-0.28)	0.982 (-0.16)
Age (logged)	0.001** (-2.87)	0.097 (-1.08)	0.001* (-2.41)	0.141 (-0.87)
Black ²	2.278*** (5.24)	0.751* (-2.40)	2.273*** (5.18)	0.754* (-2.36)
Other race ²	0.851 (-0.69)	0.918 (-0.60)	0.851 (-0.69)	0.927 (-0.53)
Cohabiting ³	0.928 (-0.25)	1.020 (0.11)	0.944 (-0.19)	1.020 (0.11)
Divorced ³	1.176 (0.80)	1.119 (0.78)	1.241 (1.05)	1.132 (0.86)
Widowed ³	1.874 (1.69)	1.144 (0.42)	2.062 (1.94)	1.170 (0.49)
Single ³	1.599* (2.49)	1.103 (0.71)	1.668** (2.68)	1.099 (0.68)
N of adults in home	0.960 (-0.40)	0.990 (-0.14)	0.965 (-0.35)	0.995 (-0.07)
N of children in home	0.970 (-0.45)	1.059 (1.23)	0.971 (-0.43)	1.062 (1.29)
Income	1.689 (1.46)	1.063 (0.24)	1.780 (1.59)	1.083 (0.32)
Employed part-time ⁴	1.591	1.079	1.661	1.077

	(1.58)	(0.35)	(1.71)	(0.34)
Unemployed ⁴	1.140 (0.44)	1.376 (1.63)	1.247 (0.74)	1.346 (1.50)
Retired ⁴	2.165* (2.41)	1.058 (0.22)	2.131* (2.35)	1.038 (0.15)
Not in labor force ⁴	1.646* (2.29)	1.098 (0.60)	1.740* (2.52)	1.100 (0.61)
Some college ⁵	1.171 (0.90)	1.028 (0.23)	1.175 (0.92)	1.039 (0.31)
2-year degree ⁵	1.473 (1.78)	0.928 (-0.47)	1.488 (1.82)	0.934 (-0.43)
4-year degree ⁵	1.283 (1.24)	0.965 (-0.25)	1.272 (1.19)	0.970 (-0.21)
Advanced degree ⁵	2.337*** (3.44)	0.886 (-0.62)	2.381*** (3.50)	0.892 (-0.58)
Own a car	0.550 (-1.21)	1.942 (1.37)	0.554 (-1.21)	1.918 (1.35)
Tract concentrated disadvantage	1.127 (1.20)	1.128 (1.60)	1.133 (1.26)	1.125 (1.56)
Tract population density	1.000 (0.84)	1.000 (-1.28)	1.000 (0.71)	1.000 (-1.31)
N	1813	1813	1813	1813

*p<0.05; **p<0.01; ***p<0.001; z statistics in parentheses

Notes: 1 reference is renter, no moves; 2 reference is white; 3 reference is married; 4 reference is employed full-time; 5 reference is HS degree or less

Table 4: Propensity Score Analyses Predicting Year One Neighborhood Group Membership

	Nearest neighbor within caliper	Mahalanobis with propensity score	Propensity score weighting (ATE)
Homeowner	2.755*** (4.07)	2.989*** (3.68)	3.243*** (5.33)
Female	0.958 (-0.15)	1.197 (0.51)	0.874 (-0.47)
Age	0.001* (-1.97)	0.001 (-1.38)	0.001** (-2.96)
Black ¹	2.459** (3.28)	2.376* (2.56)	2.424*** (3.36)
Other race ¹	0.956 (-0.11)	1.219 (0.46)	1.165 (0.35)
Cohabiting	1.291 (0.57)	1.117 (0.20)	0.855 (-0.39)
Divorced	1.021 (0.06)	1.190 (0.43)	0.877 (-0.38)
Widowed	1.062 (0.09)	1.192 (0.22)	0.892 (-0.25)
Single	0.897 (-0.29)	1.134 (0.30)	0.924 (-0.25)
N of adults in home	0.883 (-0.62)	0.815 (-0.92)	0.697 (-1.77)
N of children in home	0.969 (-0.26)	0.960 (-0.28)	1.039 (0.35)
Income	1.508 (0.56)	1.514 (0.50)	0.393 (-1.91)
Employed part-time	1.433 (0.69)	1.099 (0.13)	1.164 (0.49)
Unemployed	0.368 (-1.30)	0.246 (-1.31)	0.758 (-0.82)
Retired	2.885* (2.07)	2.481 (1.44)	2.338* (2.03)
Not in labor force	1.942 (1.64)	2.429 (1.89)	1.824 (1.46)
Some college	1.363 (1.00)	1.518 (1.13)	1.404 (1.47)
2-year degree	2.264* (2.13)	1.455 (0.75)	1.897 (1.71)
4-year degree	1.104	1.362	1.266

	(0.27)	(0.75)	(0.99)
Advanced degree	3.097*	4.957***	4.456***
	(2.51)	(3.40)	(3.42)
Neighborhood disadvantage	1.055	1.023	1.226
	(0.29)	(0.10)	(1.26)
Population density	1.000	1.000*	1.000
	(0.81)	(1.99)	(0.78)
N	688	512	1813

Note: ¹ reference is white; ² reference is married; ³ reference is employed full-time; ⁴ reference is high school degree or less

Exponentiated coefficients; t statistics in parentheses

* p<0.05; ** p<0.01; *** p<0.001

Table 5: Propensity Score Analyses Predicting Year One Frequent Conversations with Neighbors

	Nearest neighbor within caliper	Mahalanobis with propensity score	Propensity score weighting (ATE)
Homeowner	1.146 (0.84)	0.976 (-0.13)	1.026 (0.16)
Female	0.907 (-0.52)	0.818 (-0.94)	0.825 (-0.94)
Age	95.28 (1.27)	17.47 (0.69)	0.0102 (-1.07)
Black ¹	0.739 (-1.59)	0.799 (-1.00)	0.522** (-2.59)
Other race ¹	1.173 (0.69)	1.275 (0.94)	1.216 (0.75)
Cohabiting	1.801* (2.02)	1.552 (1.36)	1.475 (0.99)
Divorced	1.838** (2.69)	1.265 (0.88)	1.143 (0.55)
Widowed	3.033* (2.04)	1.115 (0.18)	0.716 (-0.56)
Single	1.318 (1.17)	0.985 (-0.06)	0.821 (-0.74)
N of adults in home	0.964 (-0.32)	0.950 (-0.43)	0.894 (-0.91)
N of children in home	1.041 (0.53)	1.011 (0.13)	1.191* (2.06)
Income	1.696 (1.11)	2.134 (1.53)	0.485 (-1.44)
Employed part-time	0.795 (-0.63)	0.384 (-1.94)	0.722 (-1.17)
Unemployed	1.654 (1.38)	1.557 (1.10)	1.088 (0.30)
Retired	1.402 (0.79)	1.330 (0.59)	0.892 (-0.28)
Not in labor force	1.223 (0.67)	1.643 (1.40)	1.258 (1.02)
Some college	0.718 (-1.65)	0.647 (-1.86)	1.077 (0.34)
2-year degree	1.108 (0.37)	0.952 (-0.16)	0.554 (-1.75)
4-year degree	0.899 (-0.45)	0.984 (-0.06)	1.482 (1.43)

Advanced degree	0.856 (-0.46)	0.801 (-0.62)	1.677 (1.29)
Neighborhood disadvantage	1.167 (1.20)	1.090 (0.56)	1.349* (2.32)
Population density	1.000 (-1.51)	1.000 (-1.78)	1.000 (-1.80)
<hr/>			
N	688	512	1813

Note: ¹ reference is white; ² reference is married; ³ reference is employed full-time; ⁴ reference is high school degree or less

Exponentiated coefficients; t statistics in parentheses

* p<0.05; ** p<0.01; *** p<0.001

Table 6: Odds Ratios of Instrumental and Expressive Civic Engagement, Year 4 Outcomes

	Full Sample		Y1 Non-participants	
	Neighborhood group	Talk to neighbors	Neighborhood group	Talk to neighbors
Owner, no moves ¹	1.354 (1.32)	0.698* (-2.12)	1.451 (1.29)	0.464** (-3.17)
Renter became owner ¹	2.802*** (3.57)	0.925 (-0.34)	4.241*** (4.42)	1.276 (0.79)
Owner became renter ¹	0.599 (-1.03)	0.745 (-0.97)	0.814 (-0.35)	0.963 (-0.09)
Owner, moved ¹	1.498 (1.34)	0.609* (-2.13)	2.627** (2.73)	0.413* (-2.53)
Renter, moved ¹	0.691 (-1.47)	0.601** (-2.99)	0.801 (-0.73)	0.664 (-1.74)
Female	1.368* (2.00)	0.895 (-0.95)	1.344 (1.58)	1.038 (0.22)
Group member Y1	6.606*** (12.16)			
Talked with neighbors Y1		3.510*** (12.02)		
Age (logged)	0.036 (-0.93)	0.003* (-2.32)	0.006 (-1.19)	0.001* (-2.01)
Black ²	2.033*** (4.40)	0.938 (-0.51)	2.373*** (4.35)	1.107 (0.56)
Other race ²	1.242 (1.01)	0.769 (-1.68)	1.376 (1.29)	0.703 (-1.53)
Cohabiting ³	0.480* (-2.22)	1.007 (0.03)	0.572 (-1.43)	0.776 (-0.84)
Divorced ³	1.008 (0.04)	0.804 (-1.25)	1.274 (0.87)	0.645 (-1.72)
Widowed ³	0.732 (-0.79)	0.830 (-0.61)	0.835 (-0.35)	0.480 (-1.55)
Single ³	0.837 (-0.77)	0.901 (-0.61)	0.987 (-0.05)	0.822 (-0.81)
N of adults in home	0.905 (-0.86)	0.877 (-1.68)	0.936 (-0.51)	0.900 (-0.93)
N of children in home	0.929 (-1.06)	1.014 (0.28)	0.968 (-0.40)	1.075 (0.99)
Income	2.246*** (3.45)	1.186 (0.99)	2.292** (2.90)	0.883 (-0.49)

Employed part-time ⁴	0.739 (-0.71)	1.085 (0.30)	0.718 (-0.67)	0.902 (-0.25)
Unemployed ⁴	1.555 (1.49)	1.246 (0.99)	1.179 (0.42)	0.934 (-0.21)
Retired ⁴	2.635** (3.08)	1.308 (1.05)	2.912** (2.76)	1.031 (0.08)
Not in labor force ⁴	1.248 (0.86)	1.352 (1.60)	1.615 (1.55)	1.236 (0.79)
Some college ⁵	1.242 (1.11)	0.947 (-0.37)	1.170 (0.66)	1.004 (0.02)
2-year degree ⁵	0.896 (-0.46)	1.064 (0.38)	0.945 (-0.20)	1.068 (0.28)
4-year degree ⁵	1.298 (1.25)	0.932 (-0.45)	1.255 (0.89)	0.812 (-0.89)
Advanced degree ⁵	1.406 (1.36)	1.124 (0.60)	1.712 (1.80)	1.231 (0.74)
Own a car	0.716 (-1.44)	1.161 (0.84)	0.845 (-0.58)	1.015 (0.06)
Tract concentrated disadvantage	1.002 (0.02)	0.969 (-0.42)	0.928 (-0.60)	1.033 (0.31)
Tract population density	1.000 (0.28)	1.000 (-0.24)	1.000 (0.27)	1.000 (-0.90)
N		1813	1813	1480
				928

*p<0.05; **p<0.01; ***p<0.001; z statistics in parentheses

Notes: 1 reference is renter, no moves; 2 reference is white; 3 reference is married; 4 reference is employed full-time; 5 reference is HS degree or less

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