

Inactive by Design:  
Neighborhood Design and Political Participation

Daniel J. Hopkins\*  
Assistant Professor  
Department of Government  
Georgetown University  
dhopkins@iq.harvard.edu

Thad Williamson  
Assistant Professor of Leadership Studies  
Jepson School of Leadership Studies  
University of Richmond  
twillia9@richmond.edu

July 6, 2009

---

\*Authors' names appear in alphabetical order.

## **Abstract**

Critics have long denounced the design of suburban communities for fostering political apathy. We disaggregate the concept of suburban design into four distinct, measurable attributes of neighborhoods. We then use tract-level Census data and the Social Capital Community Benchmark Survey to measure the relationship between these different design features and political participation. Some design aspects common in suburban neighborhoods are powerful predictors of reduced political activity, illustrating a potential link between neighborhood design and politics. Yet low-density environments appear to facilitate some types of participation. Suburban designs vary, and so do their likely impacts on political participation.

# 1 Introduction

In the past half-century, American communities have undergone a revolution in design. In 1940, some 15% of Americans lived in suburbs. Today, that figure is 50% (U.S. Census Bureau 2002:33). And within suburban America, dense communities built around identifiable downtowns have given way to decentralized, car-oriented communities (Garreau 1991). The average driver now spends 55 minutes in her car daily (Bureau of Transportation Statistics 2006) as Americans live further from downtowns—and from one another.

As new suburban communities have sprung up, so have heated arguments about the impact of typical suburban designs on political participation. Many critics denounce the design of suburban communities for encouraging narrow, parochial conceptions of self-interest as well as political disengagement (e.g. Duany et al. 2000; Kunstler 1993; Davis 1990; Jackson 1985; Danielson 1976). Others offer more mixed assessments of their impacts, pointing out the benefits that small political communities can have (Oliver 2001) while also acknowledging the negative effects of aggregate commuting (Humphries 2001; Putnam 2000). Still others offer positive assessments, often pointing to the central role of consumer demand in shaping the design of U.S. communities (e.g. Bruegmann 2005; O’Toole 2001; Gordon and Richardson 1998). Given the continued growth of suburban and exurban communities (Nasser and Overberg 2005), assessing the impact of local designs on political behavior in a comprehensive way is crucial.

To be sure, scholars have begun to address the connection between neighborhood form and political participation, with particular contributions from survey analysis (Humphries 2001; Oliver 2001; Putnam 2000) and historical approaches (e.g. Freund 2007; Self 2003; McGirr 2001; Jackson 1985).<sup>1</sup> Still, numerous improvements remain to be made (Sander 2002), especially in using nationally representative samples to test the generality of past

---

<sup>1</sup>Similar questions have animated a growing literature in public health as well (e.g. Frumkin et al. 2004; Leyden 2003; Saelens et al. 2003; Frumkin 2003; Frank and Engelke

arguments. In past work, suburban designs are defined inconsistently, and a wide range of theories are invoked to link so-called “suburban sprawl” to reduced political participation. Local designs are usually measured at high levels of aggregation such as the municipality, ZIP code, county, or metropolitan statistical area, despite the considerable variation across neighborhoods. Alternative hypotheses, including the ever-present threat of selection bias, have not been effectively dismissed.

Section 2 integrates theories of urban design with explanations of political participation. The paper then uses common critiques of suburban development to identify four distinct components of local design. It distinguishes the aspects of local design that shape social organization from those that influence individuals’ commitment to their locality or their sense of efficacy. In our view, this disaggregation represents a key conceptual contribution. The term “suburban sprawl” is an uncomfortable combination of several disparate factors, and until we understand how they interrelate, we cannot understand their net effects. Section 3 introduces the Social Capital Community Benchmark Survey (SCCBS), a clustered survey of 29,724 Americans from 42 different communities. The SCCBS is uniquely suited to address these questions. It sampled an extraordinary number of Americans, provides geographic information about respondents’ census tracts, and questioned respondents about their political participation. As a result, it allows us to focus on design at very local levels.

Section 4 illustrates the relationship between local design and political participation. The percentage of one’s neighbors commuting alone is a reliable, negative predictor of a variety of activities, as is living in a more recently built neighborhood. For example, a shift from the 20th percentile solo driving tract to the 80th percentile solo driving tract is associated with a 13% drop in the probability of attending a political meeting or rally. Since the percent driving alone is a close correlate of car-oriented neighborhoods, findings like this one demonstrate that neighborhood design does matter. Designs that reduce

---

2001).

pedestrian traffic and chance encounters reduce more demanding and collective forms of political participation as well. Other aspects typically associated with suburban designs, including the community’s average commuting time, have effects that are typically weak or undetectable.

We do find an upside to the designs characteristic of suburbs. Controlling for other spatial characteristics, lower-density neighborhoods increase more intensive and conflictual types of political participation. This reinforces past findings that smaller, less populated communities encourage participation—and low-density designs have advantages. Suburban designs, we conclude, are not monolithic. Certain suburban design aspects dampen political participation, but others have little relationship or even positive correlations.

## **2 Conceptualizing Neighborhood Design’s Influence**

Does the structure of the built environment affect political engagement? This section outlines scholars’ existing answers and then develops hypotheses about the potential impacts of local design. Neighborhood designs are thought to be connected to a range of outcomes, from political activity to mental well-being (e.g. Oliver 2003). But the particular facet of neighborhood design that seems to matter varies from study to study, making it critical that scholars disaggregate the concept and consider its multiple aspects separately. Currently, our conception of suburban design—often subsumed under the heading of “sprawl”—is all-encompassing and hence imprecise. In the words of one author, “one of the most striking things revealed by even the most cursory study of the way ‘sprawl’ has been used over the years is the difficulty of pinning down a common definition” (Bruegmann 2005). For that reason, we jettison the notion of sprawl entirely, and focus on neighborhood design instead. We define neighborhood design as the features of the immediate built environment in which an individual lives. Scholars of sprawl are commonly interested in characteristics

of metropolitan areas; here, we focus on the characteristics of neighborhoods.

In the past decade, some scholars have asserted that urban design structures Americans' political participation. Kohn argues that the character of shared space is essential in facilitating politics: “[p]ublic sidewalks and streets are practically the only remaining sites for unscripted political activity” (2004: 4). This argument echoes those of many other scholars (Barber 2002; Mattson 2002: 45; Duany et al. 2000; Lofland 1998; Moe and Wilkie 1997, Oldenburg 1989; Jackson 1985; and Jacobs 1961), and has drawn increasing attention from survey researchers (Gainsborough 2001; Humphries 2001; Oliver 2001, 2000; Putnam 2000). Putnam (2000) cites long average commutes as an important predictor of reduced civic engagement. Subsequent research using large-scale surveys of civic engagement also found an inverse relationship between local commuting times and trust (Rahn et al. 2003; Humphries 2001). In the Sunbelt, Oliver (2001; 2000) found less political participation in areas that had been built more recently. Cutting against the indictments of suburban development, however, he also found that smaller cities generated *increased* political participation. And Humphries (2001) found that retail density did not predict political participation in either direction.

Suburban design seems to have mixed impacts on political behavior. Yet the meaning of “suburban” varies from study to study, with most works operationalizing it in a single variable and ignoring its competing aspects. One solution is to develop indices of local design which incorporate several different dimensions (e.g. Cutsinger et al. 2005). But to do so risks obscuring which aspects of suburban environments influence political behavior—and it ignores the possibility of cross-cutting effects. Instead, we define neighborhood design so as to acknowledge its multiple aspects. *Suburban design is taken to be a pattern of development marked by falling densities, the acceleration of development on the outer fringes of existing metropolitan areas, the separation of residential and commercial space, and heavy dependence on cars.* Suburban design is distinct from suburbanization, a related

process in which the proportion of metropolitan residents living within a central city falls over time. We will now consider the aspects of designs thought to be suburban and the various pathways that might connect these environments to political behavior.

## 2.1 Hypotheses and Explanatory Variables

We wish to test the contentious claim that traditional urban areas are more hospitable to political engagement than newer, suburban areas. But the term “suburban” clusters several distinct aspects of community design, so in understanding the overall impact of suburbanization, it is critical to state the theoretical expectations linking each of its elements with political participation. At the same time, we outline how each component of suburban design is measured. We construe “design” narrowly so as to exclude considerations about homogeneity, segregation, and other demographic correlates. Throughout, we consider suburban designs chiefly as they influence the perceived costs and benefits of political participation, but we also consider the ways in which they might shape social networks, political organizing, or perceptions about the boundaries of one’s community.

*Neighborhood Density.* Past literature suggests that there is an inverse relationship between density and participation. This could be because those in densely settled communities feel less externally efficacious, since they perceive more acutely that their voice is one among a great many (Oliver 2001). Put differently, dense environments might exacerbate collective action problems, since with many neighbors, no one individual feels responsible for getting involved in politics. Hence we expect increased density, measured as the number of people per square mile, to predict reduced participation. Yet since certain activities require a critical mass of individuals, one might posit that density’s impacts will be specific to solitary acts such as voting. High-density environments might actually facilitate collective activities such as rally attendance.

*Neighborhood Age.* The next two variables speak to the concern that the character of

public spaces influences civic activity (Kohn 2004; Oldenburg 1989; Jacobs 1961). The first is traditional or community-oriented architecture, proxied by neighborhood age. Urbanists have demonstrated that neighborhoods built beginning in the postwar suburban boom differ from traditional urban neighborhoods featuring relatively narrow streets, front porches, integrated commercial sites, and street activity (Flint 2006; Nozzi 2003). Moreover, suburbanization by definition involves the construction of new neighborhoods in previously undeveloped areas. Newer neighborhoods thus tend to be located on the outskirts of metropolitan areas.

We hypothesize that residence in an older neighborhood increases political participation for two key reasons. First, the older neighborhood design associated with mixed use and shared public space is likely to be more conducive to formal and informal political recruitment than newer, single-use neighborhoods organized around large, detached houses. Second, older neighborhoods might also contain accumulated social networks and organizations which facilitate civic and political activity (Leyden 2003), whereas recently built neighborhoods must construct these networks from scratch (McGirr 2001).

This is not the first study to use neighborhood age to proxy neighborhood design (see Jargowsky 2002). The validity of neighborhood age as a measure of design is reinforced by examining the correlations between neighborhood age and the suburban sprawl indices developed by Ewing et al. (2002, 2006). At the county level, older housing stock is correlated with Ewing et al.'s index of sprawl (in which higher scores indicate lower sprawl) at  $r=.58$ , weighting by county population.<sup>2</sup>

---

<sup>2</sup>Ewing et al. compiled an index of sprawl for 951 metropolitan counties based on four component factors: residential density; the integration of homes, jobs, and services; the strength of centers, such as business districts; and accessibility via the street network. Our thanks to Reid Ewing for providing us with a copy of this index of county-level sprawl scores.

*Car-Oriented Development.* The degree to which a community relies on solo automobile transit is also closely related to its design and layout. Urban planners frequently contrast “human-scaled” areas marked by pedestrian activity, bicycles, and accessible public transit with developments designed to accommodate car traffic efficiently. In the latter areas informal street life is less common. It seems plausible that the former type of urban environment encourages political activity—and in fact, recent work has found that those in more walkable, mixed-use communities were more likely to know their neighbors (Leyden 2003).<sup>3</sup>

We measure whether an area is pedestrian-oriented or car-oriented by using the percentage of residents in the census tract who drive alone to work. Two checks confirmed the validity of this measure. First, we used Google Earth to visualize both the neighborhood age and driving alone measures—and saw considerably more cul-de-sacs and fewer traditional street grids in newer, more automobile-oriented neighborhoods. More systematically, the Pearson’s correlation between the tract’s percent driving alone and a three-category measure of the whether a satellite image of the tract had a “traditional street grid” was 0.85.<sup>4</sup> Second, we checked the Pearson’s correlation between the percentage driving alone

---

<sup>3</sup>It is also possible, though in our view somewhat less plausible, that the experience of transportation by car might influence individuals’ political engagement in important ways; unfortunately, the SCCBS does not contain information on individuals’ mode of transportation to work, so we are unable to test that hypothesis.

<sup>4</sup>Specifically, we selected 290 census tracts from our survey respondents, over-sampling to represent all of the surveyed communities as well as the tails of the distribution. Two independent coders then used satellite images of the census tract from Google Earth to identify whether the tract had a traditional street grid, meaning that “the majority of streets visible in the image follow a traditional grid, with frequent intersections and few cul-de-sacs or dead-ends.” Coders could respond “yes,” “no,” or “mixed/ambiguous.”

at the county level and Ewing's overall index of sprawl. For 951 metropolitan counties for which the index is available, the correlation (weighting by county population) was  $r=-.92$ ; counties with a higher proportion of solo automobile commuters are less compact and less pedestrian-oriented. We can thus be confident in our use of the percent driving alone as a measure of neighborhood design.

*Time in Transit.* Numerous studies have reported a link between community-wide average commuting time and reduced civic engagement (e.g. Rahn et al. 2003; Humphries 2001; Putnam 2000). Here, the likely mechanism is the collective loss of time available for political participation. Time in transit is time lost to political participation, and those working farther from home are less likely to return for daytime political activities. This variable is measured by the average commuting time among workers in a given census tract. Although time in transit is not itself a neighborhood design feature, it is indicative of land-use patterns in the broader area as well as the neighborhood's relationship to centers of economic activity. Moreover, this variable has been emphasized by past research on suburbanization and participation (e.g. Humphries 2001, Putnam 2000), and so merits inclusion for the sake of comparability.

The four Census variables that measure neighborhood design are summarized in Table 1, and Table 4 in the Appendix presents their correlations. The bivariate correlations illustrate that many of the elements of local design and land use are not highly correlated. The average commuting time, for instance, is not strongly associated with other stereotypically suburban design features, and is negatively correlated with greater solo commuting at 0.22. Areas such as New York City have proportionately few solo commuters and car-oriented communities but also have long commutes. This provides strong support for empirically testing the impact of each element separately. The percentage of people driving alone to work is most closely correlated with the other measures of suburban design, making it the measure that seems to track suburban design overall most closely.

## 2.2 Supply-Side Explanations

The mechanisms noted above operate at the individual level. Aggregate features of respondents' communities are thought to structure their behavior by shaping the perceived costs and benefits of political activity. But environmental features might also influence opportunities for participation. Meaningful political activity requires a critical mass of interested citizens, and forming such a mass requires that activists be able to recruit others. It is plausible that activists seeking to enlist others in political activity will concentrate their activities in settings in which the perceived costs of undertaking visible political activity are lower. From the activists' standpoint, it is more effective to pass out literature, hold signs, collect signatures, post billings, and hold demonstrations where one will be in frequent contact with the public. Alternately, the initial absence of political participation could influence norms about acceptable local behavior (e.g. Kolb 2007, Staehli and Mitchell 2005). In short, the individual-level mechanisms posited above could easily be compounded by organizers' choices about where to recruit and target and by other self-reinforcing mechanisms. Some forms of political participation are more susceptible to contagion or recruitment than others (Cho and Rudolph 2008), so *we will address these supply-side hypotheses by looking at the differential influence of each design feature on particular types of political activity.*

## 3 Data and Methods

A major methodological issue in gauging the impact of suburban design is the appropriate scale at which it should be measured. Most efforts to construct indices of suburban design or sprawl have focused on the metropolitan area (e.g. Cutsinger et al. 2005; Ewing 2002). Other studies have utilized the county or the municipality as the unit of analysis (e.g. Oliver 2001). In our view, there is no single ideal scale at which design should be measured. What is important is that there be a close fit between the scale of analysis, the dependent

variables being studied, and the available data. In examining macro-level phenomena such as the fiscal or environmental consequences of suburbanization, larger scales such as the metropolitan area make good sense. In studying individual-level phenomena, however, such a large scale may obscure the substantial variations in spatial context within a given metropolitan area.<sup>5</sup>

This consideration, as well as our focus on neighborhood-level design, guides us to a much smaller unit of analysis: the census tract. Focusing on census tracts allows us to specify the immediate context of an individual's daily life, and to do so with less measurement error than exists at higher levels of aggregation. Unlike counties or metropolitan areas, the population of census tracts is relatively uniform across the United States, typically ranging between 4,000 and 6,000 residents. Clearly, some of our measures will be heavily influenced by metropolitan-level characteristics. The local commuting time is shaped by the distance to places of employment. But since the theories above conceptualize the built environment primary as a local influence on the costs and benefits of political participation, it is appropriate to measure the environment at the lowest possible level of aggregation. Our analysis proceeds by matching census tract data from the 2000 U.S. Census to the SCCBS, which was itself conducted in the summer and fall of 2000. 29,133 of the original 29,724 cases were successfully matched in this fashion, with the missing cases distributed evenly among the community and national samples.<sup>6</sup>

---

<sup>5</sup>To determine if there was much to be gained from a tract-level analysis, for each of our key independent variables, we calculated the proportion of the variance that was attributable to differences across metropolitan areas. The proportions ranged from .15 (for density) to .35 (for commuting time), indicating that in all cases, the majority of the variation is *within* rather than across metropolitan areas.

<sup>6</sup>9,215 of these respondents did not have available census tract information, and they were assigned to a census tract based on the geographic center of their ZIP code.

### 3.1 Measures of Political Participation

The SCCBS covers a wide range of political and non-political behaviors. In this article, we focus narrowly on the relationship between design-related variables and political activity; future work should consider civic organizations, informal socializing, and other related metrics. The SCCBS provides information about eight explicitly political activities: voting, registering to vote, attending public meetings, joining a local reform organization, joining a political organization, petition signing, attending a political meeting or rally, and participating in a march or protest.<sup>7</sup> These measures are summarized in Table 1. These activities differ on a few key dimensions, including whether they are election-related, how common they are, how demanding they are, whether they can be performed alone, and the relationship that they create between residents and local authorities.

### 3.2 Other Independent Variables

Local design features are correlated with several potentially confounding variables, both at the tract and at the individual level. The value of multivariate analyses is precisely that they can partition the variance in an outcome among a variety of potential variables, telling us whether suburban environments differ because of contextual effects or because of differences in the individuals within them. Hence our models include a number of additional contextual variables, some of which have been linked to suburban design indirectly. These measures include the tract-level median household income; tract-level income inequality, measured by the Gini coefficient; the tract's ethnic and racial composition, measured via

---

<sup>7</sup>Voting measures whether the respondent reported voting in the 1996 presidential election, while the other activities are measured according to whether the respondent had engaged in the activity within the previous year.

the Herfindahl index<sup>8</sup>; its level of educational attainment, measured by the percentage of census tract residents with Bachelor’s degrees; the level of residential turnover in the preceding five years; and the neighborhood’s presence in a central city. We also control for a standard battery of individual-level characteristics, including age, gender, race, educational attainment, income, homeownership, years lived in the community, citizenship status, personal commuting time in hours, and the language in which the interview was conducted. In various robustness checks, we add attitudinal measures to the individual-level independent variables, including the respondent’s political ideology and her interest in politics. Table 5 in the Appendix summarizes these independent variables. Certainly, community design could influence political participation indirectly through its influence on economic segregation (e.g. Yang and Jargowsky 2006) or racial homogeneity (Oliver 2001) as well. Yet we consider only direct effects here, yielding conservative estimates.

## 4 Results: Design’s Multiple Impacts

This section employs logistic regressions to examine the relationship between design-related variables and political participation. We use Huber-White standard errors (Huber 1981, White 1980) to deal with the potential heteroskedasticity, and sometimes employ community fixed-effects as well.<sup>9</sup> Initially, we model three binary dependent variables which represent a range of political activities: whether the respondent voted in 1996, whether

---

<sup>8</sup>To calculate a Herfindahl index, one sums the squared proportion of each group within a population. We do so using four census-defined groups: non-Hispanic whites, non-Hispanic blacks, non-Hispanic Asians, and Hispanics. The Herfindahl index can be interpreted as the probability that two members of a community are of the same racial or ethnic group.

<sup>9</sup>All key results were also confirmed using standard errors clustered at the level of the sampled community. These tests confirmed the general pattern and significance of results reported here. Of the results presented in Table 3, two have noteworthy changes. Older

the respondent attended a rally or political meeting in the last year, and whether the respondent attended a public meeting in the last year. Table 2 shows that the impact of our key variables hinges on the dependent variable. The percentage of the respondent's neighbors who drive alone to work is a negative predictor of all three dependent variables. The median year in which the communities' homes were built negatively affects attendance at rallies and public meetings—but not voting. Average commuting time, conditional on these other covariates, is not a strong predictor. On the other hand, population density has a negative effect on both attending rallies and public meetings. From this initial analysis, *the negative impacts of design show up clearly a community's age and its percentage of residents driving alone to work.* Figure 1 illustrates these results for attendance at political meetings and rallies.

One advantage of this model specification is that it allows differences in design to partially account for variations across the 42 sampled communities. Still, on account of the survey's clustered sampling design, there is a concern that unobserved community-level differences might drive the findings. In results not presented, we re-estimated the models including 41 indicator variables for the sampled communities, a conservative approach that focuses our attention only on these variables' strength in predicting variation within communities.<sup>10</sup> Even with this specification, some results re-appear. Both the percentage driving alone and younger communities are negative predictors of attending rallies. Lower population density again has a positive effect on attendance at public meetings, as does living outside the central city. Design features typical of suburbs seem to have their most neighborhood age is a less precise predictor of petition signing, and density is no longer significantly related to voter registration.

<sup>10</sup>For instance, accounting for community-level fixed effects addresses the possibility that observed differences in political participation across spatial contexts could reflect unmeasured differences in institutional practices at the municipal or state levels.

marked negative impact on conflictual political activities.<sup>11</sup> The core findings were also confirmed with models that removed three of the four measures of design, so as to rule out the possibility that the results are due to multi-collinearity.

We now estimate our basic model for all eight dependent variables, as shown in Table 3. The percentage of residents driving alone to work is a consistently negative predictor of political behavior of all kinds. Its negative impact on petition-signing is to be expected—pedestrians are available to sign petitions while drivers are not. Recently constructed communities reduce more intensive and conflictual kinds of participation, but have no strong impact on registering to vote or voting.<sup>12</sup>

Intriguingly, we do not find aggregate commuting time to be a powerful predictor of political behavior. But this makes sense: because it reduces the net time available for participation, aggregate commuting time should matter more for repetitive activities like Parent-Teacher Associations or book clubs than for acts of sporadic political participation. And indeed, these same data show that high aggregate commuting times have an adverse effect on social trust and overall group membership, reaffirming Putnam’s negative finding

---

<sup>11</sup>A very similar pattern of results also appears when we remove the 5,077 respondents who live outside metropolitan areas, affirming that these results are not driven by rural respondents. Still, our purpose is to capture the influence of spatial features, and to remove rural residents from our standard models would limit both the available variation and the generality of our findings.

<sup>12</sup>Given that we measure design in part through the age of the median home, we also explored whether there were non-linear effects that might be evidence that certain time periods had especially influential designs. To do so, we broke up the age-based measure into five categories, and explored the impact of the resulting indicator variables. Our results showed a continual decline as homes grow younger, and did not give strong evidence of non-linear effects.

(2000:213).<sup>13</sup>

Another challenge is that these results could be specific to the level of aggregation used, the census tract. While the census tract is clearly preferable to the county given the former's close connection to respondents' residential community, *we duplicated our key findings at the county level. They remain quite similar.* The percentage driving alone and the age of the community's buildings are consistently negative predictors for non-electoral activities; aggregate commuting time is generally a weak predictor; and population density is a negative predictor of public meeting attendance and petition-signing.<sup>14</sup> The same general pattern also holds for the full data set with regional indicator variables (not shown), suggesting that the core results are not the by-product of regional differences.

#### 4.1 Selection Bias and Alternative Explanations

This finding of a conditional correlation between specific design-related variables and reduced levels of political activism lends itself to several explanations. The first is advanced by Kohn and many urban designers: different spatial contexts vary in the extent to which they facilitate political communication and political organizing. For instance, urban environments provide more public spaces and more opportunities for unscripted social interaction, which may in turn influence activism. But in studies of contextual effects, selection

---

<sup>13</sup>Public meetings continue to be an atypical dependent variable as well, in that they are negatively related to population density. One potential explanation is that public meetings are dominated by school-related events, although conditioning on whether the respondent has children or is a member of a Parent-Teacher Association does not change the estimated influences of design. According to these data, it is low-density communities where public meeting attendance is highest.

<sup>14</sup>We duplicated the findings using the ZIP code as the level of aggregation, and also did so at the tract level including controls for logged city population.

bias is an ever-present issue, and represents one of the central challenges to valid inference (Handy et al. 2006, Sampson et al. 2002). To be causal estimates, the models above need to assume that the characteristics of an individual's census tract are randomly assigned, and are not the products of moving decisions. That assumption is patently false. There is no easy solution, but here, we try to confront it by using available information to test the possibility that selection processes are driving these results.

First, the results hold up at higher levels of aggregation, even though selection processes across counties are likely to be less pronounced. Also, we consider the alternative explanation that individuals choose environments in part because of their political characteristics. Perhaps liberal activists systematically group themselves into cities whereas conservatives and moderates prefer suburbs (Gainsborough 2001). Strikingly, the link between design-related characteristics and reduced participation remains robust even after we control for individuals' political ideology, their interest in politics, and their county's political partisanship. In Table 6 in the Appendix, we show that the basic pattern of results remains even conditioning on these three measures. It is not just that people in car-dependent neighborhoods have different political preferences, or less concern with politics.

A second strategy for confronting selection bias is to identify who within the data set should be more or less susceptible to it. First, we confirmed that the same findings hold when we restrict the sample to the 12,612 respondents who reported an income of \$40,000 or lower. These individuals are likely to be more constrained in their housing choices, and less able to match their place to their preferences. We then investigated other subsets where selection bias is less pronounced. To the extent that selection bias is operating, it is likely to be a stronger factor in explaining participation among those who have recently moved. There are two reasons for this. First, people who have recently moved have not been susceptible to the influence of their new environment for long, weakening any potential contextual treatment effects. If context is correlated with participation among

new residents, such correlations would *have to be the result of selection processes*. Also, such residents recently had the opportunity to match their context with their preferences, reducing the mismatch. To be clear, we are not assuming that those who have lived in their communities for a long time are representative of the population as a whole. Instead, given the significant costs and friction in moving, we assume that they are somewhat less likely to be living in a community based on their personal values or propensity to participate. If we restrict the data set to the 13,018 respondents who have lived in the same community for more than ten years, we can re-estimate the basic models from above and see if the results prove robust. They do, at least in part. Yet again, the percentage of people within the census tract driving alone to work is a strong negative predictor of most dependent variables (see Table 7 in the Appendix). Younger communities continue to discourage attendance at marches and demonstrations.

Another alternative explanation is reverse causation. Perhaps cities with activist populations become less likely to evolve in suburban directions, and more likely to embrace public transit and other density-increasing policies. Looking retrospectively, it is not clear that those places which have urban designs now were better mobilized in the past. First of all, if community mobilization did have an impact on local design in the period leading up to 2000, it as likely would have taken the direction of promoting more lower density and more car-oriented development (e.g. Lassiter 2006, Kruse 2005, Self 2003, Burns 1994). Second, the number of instances in which popular mobilization has shaped urban design is quite small (e.g. Gans 1967). Likewise, public transportation systems have generally been implemented in a top-down fashion in which high-level officials establish the basic parameters of policy; citizen participation on transportation-related issues tends to be defensive and highly localized (Altshuler 1979, Schrag 2006). Third, exogenous geographic factors account, sometimes decisively, for many of the nation's dense metropolitan areas. Cities like Boston and San Francisco which are hemmed in by water, mountains, or other

geographic features are far less likely to develop in low-density, car-oriented patterns.

Yet another alternative explanation is that design shapes political participation only by shifting its outward forms. Perhaps residents of low-density, car-dependent neighborhoods substitute away from meetings and rallies and toward online activism, for example. A detailed treatment of internet-based political participation is beyond our scope here (see instead Wellman 1999, Behrens et al. 2007, and Hindman 2009). However, we should note that in our data, we find no evidence that newer neighborhoods, car-dependent neighborhoods, or neighborhoods with high aggregate commuting correlate with increased use of the internet. Using our basic model above, we find no strong evidence that these design measures are related to higher or lower total internet time. The same is true for participation in an online discussion. At the same time, we do observe that respondents in more dense communities report higher levels of both activities. At least as of 2000, newer, car-oriented designs were not merely channeling political participation online.

## **5 Conclusion: The Influence of Urban Design**

Urban designers and other case study-based researchers often conclude that there is “a direct causal relationship between the character of the physical environment and the social health of families and the community at large” (Duany: xiii). Of course, claims about causation in observational settings are difficult to prove beyond a reasonable doubt, relying as they do on strong assumptions about omitted variables. Still, the conditional correlations presented here partially reinforce that claim, and are robust to a variety of possible explanations. Substantively, they are substantial as well. As we move from a community where 66% of people commute alone to a community where 85% do—that is, as we move from the 20th percentile to the 80th—we should expect that the probability of voting will

drop by 1.6 percentage points, or 2%.<sup>15</sup> Less common and more conflictual activities are far more susceptible to environmental influence, with the same change in the percentage driving alone leading to a 13% change in the probability of attending a rally or political meeting.<sup>16</sup> While this impact is not as strong as a comparable shift in education (which produces a 45% increase), the effect is slightly larger than the predicted shift when comparing homeowners and renters (11% increase). Intriguingly, the activities that are most consistently influenced by design are the activities that rely most on social contagion effects. Few people attend rallies or meetings if they expect not to know anyone there. Thus the pattern of results reinforces the claim that local designs shape politics through their influence on recruitment and on local norms.

One aspect common to suburban designs runs against this trend: population density. Moving from the 20th percentile to the 80th in terms of density—that is, moving to a more dense, more “urban” environment—we should expect a 1.8 percentage point drop in the probability of attending a rally<sup>17</sup> and a marked 7.2 percentage point drop in the probability of attending a public meeting.<sup>18</sup> Less dense environments do facilitate certain political activities, sometimes powerfully. Suburban neighborhood designs are not monolithic, and their effects are not always in the same direction. Still, these impacts are two of the only examples of suburban design’s positive potential across the four independent variables and eight dependent variables examined here.

Past work has suggested many reasons why neighborhood designs common in suburbs might influence political participation, but we now have evidence on which aspects of

---

<sup>15</sup>The 95% confidence interval runs from 0.3 percentage points to 2.8 percentage points.

<sup>16</sup>Here, the mean estimated impact is 2.4 percentage points, with a 95% confidence interval from 1.5 percentage points to 3.2 percentage points.

<sup>17</sup>Here, the 95% confidence interval runs from -2.9 to -0.8 percentage points.

<sup>18</sup>The 95% confidence interval for the impact of density on public meetings runs from 5.7 to 8.6 percentage points.

local design influence which political behaviors. Communities dominated by newly built homes and by cars are less successful as incubators for political participation. By contrast, explanations based on considerations about time lost to commuting seem less compelling in light of these results. Conditional on urban design, the average commuting time in a census tract does not have a major impact on political participation.

Traditional urbanist communities oriented around transit, walking, and biking, as well as communities built before 1950, appear to be more hospitable locales for political participation, even accounting for a host of confounding factors. The conventional wisdom of New Urbanists and planning scholars which assumes a strong connection between spatial design and behavior appears correct: design does matter. It also seems fair to conclude that the kinds of suburban communities which America has built in the last third of the twentieth century, whatever their other benefits, have not helped Americans become more vigorous citizens.

But this core finding raises as many questions as it answers. One obvious question is whether the connection between more recently built neighborhoods and reduced political participation reflects not an inherent problem with new developments but a “period effect” reflecting the specific types of building common in the late 20th century. If this is the case, we might expect the relationship between neighborhood age and reduced participation to decline in coming decades, as contemporary developments reflect changing norms. Normatively, the finding that some elements of suburban design are detrimental to non-electoral participation must be weighed against both the benefits suburbanization may bring and the cost of shifting to a different urban development pattern. Answers to such questions await future research and additional empirical work—as well as spirited public debate over the costs and benefits of suburban designs. This article emphatically does not establish that all dimensions of suburban design are harmful to all the goods democratic citizens should care about. It does show, using the best data currently available, that some important

aspects of those designs have a robust and substantial negative relationship with citizens' participation.

## References

Altshuler, Alan. 1979. *The Urban Transportation System*. Cambridge, MA: The MIT Press.

Barber, Benjamin. 2002. "Civic Space." in David Smiley, ed. *Sprawl and Public Space: Redressing the Mall*. National Endowment for the Arts: Washington, DC.

Behrens, Dean, Paul Glavin, and Barry Wellman. 2007. "Connected Lives—North Chapleau." Available online at: [www.chass.utoronto.ca](http://www.chass.utoronto.ca)

Burns, Nancy. 1994. *The Formation of American Local Governments: Private Values in Public Institutions*. New York: Oxford University Press.

Bruegmann, Robert. 2005. *Sprawl: A Compact History*. Chicago: University of Chicago Press.

Bureau of Transportation Statistics. 2006. "National Transportation Household Survey: Daily Travel Quick Facts." Available online at: [http://www.bts.gov/programs/national\\_household\\_travel\\_survey/daily\\_travel.html](http://www.bts.gov/programs/national_household_travel_survey/daily_travel.html) [accessed January 25, 2006]

Cho, Wendy K Tam and Thomas Rudolph. 2008. "Emanating Political Participation: Untangling the Spatial Structure Behind Participation." *British Journal of Political Science* 38(2): 273-289.

Cutsinger, Jackie, George Galster, Howard Wolman, Royce Hanson, and Douglas Towns. 2005. "Verifying the Multi-Dimensional Nature of Metropolitan Land Use: Advancing the Understanding and Measurement of Sprawl." *Journal of Urban Affairs* 27(3):235-259.

Danielson, Michael N. 1976. *The Politics of Exclusion*. New York: Columbia University Press.

Davis, Mike. 1990. *City of Quartz: Excavating the Future in Los Angeles*. New York: Vintage.

Duany, Andres, Elizabeth Plater-Zyberk, and Jeff Speck. 2000. *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*. New York: North Point Press.

Ewing, Reid, Rolf Pendall and Don Chen. 2002. "Measuring Sprawl and Its Impact." Smart Growth America. [www.smartgrowth.org](http://www.smartgrowth.org) [Accessed June 18, 2006]

Ewing, Reid, Ross Brownson and David Berrigan. 2006. "Relationship Between Urban Sprawl and Physical Activity, Obesity, and Morbidity." *American Journal of Preventive Medicine* 31:461-474.

Flint, Anthony. 2006. *This Land: The Battle Over Sprawl and the Future of America*. Baltimore: Johns Hopkins Press.

Frank, Lawrence D. and Peter Engelke. 2001. "The Built Environment and Human Activity Patterns: Exploring the Impacts of Urban Form on Public Health." *Journal of Planning Literature* 16:202-218.

Freund, David. 2007. *Colored Property: State Policy and White Racial Politics in Suburban America*. Chicago, IL: University of Chicago Press.

Frumkin, Howard. 2003. "Healthy Places: Exploring the Evidence." *American Journal of Public Health*. 93(9):1451-1456.

Frumkin, Howard, Lawrence D. Frank and Richard Jackson. 2004. *Urban Sprawl and Public Health: Designing, Planning, and Building for Healthy Communities*. Washington, DC: Island Press.

Gainsborough, Juliet. 2001. *Fenced Off: The Suburbanization of American Politics*. Washington, DC: Georgetown University Press.

Gans, Herbert J. 1967. *The Levittowners: Ways of Life and Politics in a New Suburban Community*. New York: Vintage.

Garreau, Joel. 1991. *Edge City: Life on the New Frontier*. New York: Anchor Books.

Gordon, Peter and Harry W. Richardson. 1998. "Prove it: The Costs and Benefits of Sprawl." *The Brookings Review* 16(4):23-25.

Hakim, Danny and Jeremy W. Peters. 2005. "Go Ahead and Drive Less, If You Can." *The New York Times*. September 25. Week in Review:3.

Handy, Susan, Xinyu Cao, and Patricia L. Mokhtarian. 2006. "Self-Selection in the Relationship between the Built Environment and Walking." *Journal of the American Planning Association*. 72(1):55-74.

Hindman, Matthew S. 2009. *The Myth of Digital Democracy*. Princeton, NJ: Princeton University Press.

Huber, Peter J. 1981. *Robust Statistics*. New York: John Wiley and Sons.

Humphries, Stan. 2001. "Who's Afraid of the Big, Bad Firm: The Impact of Economic Scale on Political Participation." *American Journal of Political Science* 45(3):678-000.

Jackson, Kenneth. 1985. *Crabgrass Frontier: The Suburbanization of the United States*. New York: Oxford University Press.

Jacobs, Jane. 1961. *The Death and Life of Great American Cities*. New York: Vintage Books.

Jargowsky, Paul. 2002. "Sprawl, Concentration of Poverty, and Urban Inequality." in Gregory Squires, ed. *Urban Sprawl: Causes, Consequences, and Policy Responses*. Washington, DC: Urban Institute. Pages 39-72.

Kohn, Margaret. 2004. *Brave New Neighborhoods: The Privatization of Public Space*. New York: Routledge.

Kruse, Kevin M. 2005. *White Flight: Atlanta and the Making of Modern Conservatism*. Princeton, NJ: Princeton University Press.

Kunstler, James Howard. 1993. *The Geography of Nowhere: The Rise and Decline of America's Man-made Environment*. New York: Simon and Schuster.

Lassiter, Matthew D. 2006. *The Silent Majority: Suburban Politics in the Sunbelt South*.

Princeton, NJ: Princeton University Press.

Leyden, Kevin M. 2003. "Social Capital and the Built Environment: The Importance of Walkable Neighborhoods." *American Journal of Public Health*. 93(9):1546-1551.

Lofland, Lyn. 1998. *The Public Realm: Exploring the City's Quintessentially Social Space*. Hawthorne, NY: Aldine de Gruyter.

McGirr, Lisa. 2001. *Suburban Warriors: The Origins of the New American Right*. Princeton, NJ: Princeton University Press.

Mattson, Kevin. 2002. "Antidotes to Sprawl." in David Smiley, ed. *Sprawl and Public Space: Redressing the Mall*. National Endowment for the Arts: Washington, DC.

Moe, Richard and Carter Wilkie. 1997. *Changing Places: Rebuilding Community in the Age of Sprawl*. New York: Henry Holt.

Nasser, Haya El and Paul Overberg. 2005. "Metro Areas See Growth at Edges." *USA Today*. April 4th. Available online at: <http://www.usatoday.com>

Nozzi, Dom. 2003. *Road to Ruin: An Introduction to Sprawl and How to Cure It*. Westport, CT: Praeger.

Oldenburg, Ray. 1989. *The Great Good Place*. New York: Paragon House.

Oliver, J. Eric. 2003. "Mental Life and The Metropolis in Suburban America." *Urban Affairs Review*. 39(2):228-253.

Oliver, J. Eric. 2001. *Democracy in Suburbia*. Princeton, NJ: Princeton University Press.

O'Toole, Randal. 2001. *The Vanishing Automobile and Other Urban Myths: How Smart Growth Will Harm American Cities* Bandon, OR: Thoreau Institute.

Putnam, Robert D. 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York: Touchstone.

Rahn, Wendy M., Kwang Suk Yoon, Michael Garet, Steven Lipson, and Katherine Loffin. 2003. "Geographies of Trust: Explaining Inter-Community Variation in General

Social Trust Using Hierarchical Linear Modeling (HLM).” Presented at the Annual Conference of the American Association for Public Opinion Research, Nashville Tennessee, May 16.

Rodriguez, Daniel A., Asad J. Khattak, and Kelly R. Evenson. 2006. “Can New Urbanism Encourage Physical Activity?” *Journal of the American Planning Association* 72(1):43-54.

Saelens, Brian E., James F. Sallis, and Lawrence D. Frank. 2003. “Environmental Correlates of Walking and Cycling: Findings from the Transportation, Urban Design, and Planning Literatures.” *Annals of Behavioral Medicine* 25(2):80-91.

Sampson, Robert J., Jeffrey Morenoff and Thomas Gannon-Rowley. 2002. “Assessing ‘Neighborhood Effects’: Social Processes and New Directions in Research.” *Annual Review of Sociology*. 28:443-78.

Sander, Thomas H. 2002. “Social Capital and New Urbanism: Leading a Civic Horse to Water?” *National Civic Review*. 91(3):213-234.

Schrag, Zachary M. 2006. *The Great Society Subway: A History of the Washington Metro*. Baltimore: Johns Hopkins University Press.

Self, Robert O. 2003. *American Babylon: Race and the Struggle for Postwar Oakland*. Princeton, NJ: Princeton University Press.

Staehli, Lynn and Don Mitchell. 2005. “USA’s Destiny? Regulating space and creating community in American Shopping Malls.” *Urban Studies* 43(5/6):977-992.

U.S. Census Bureau. 2002. “Demographic Trends in the 20th Century.” *U.S. Census Special Reports* (November):33.

Verba, Sidney and Norman Nie. 1972. *Participation in America*. New York: University of Chicago.

White, Halbert. 1980. “A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity,” *Econometrica*. 48:817-838.

Yang, Rebecca and Paul Jargowsky. 2006. "Suburban Development and Economic Segregation in the 1990s." *Journal of Urban Affairs* 28(3):253-273.

Wellman, Barry. 1999. "The Networked Community: An Introduction." In *Networks in the Global Village*. Ed. Barry Wellman. Boulder, CO: Westview Press.

Ind. Variables	Mean	S.D.	Min.	Max.
% Drive Alone to Work	0.75	0.14	0.00	1.00
Avg. Commuting Time	23.43	5.68	7.29	65.53
Median Year, Home Built	1964.74	15.72	1939.00	1999.00
Population Density	5059.49	8764.58	0.30	218000.00
Dep. Variables	Mean	S.D.	Min.	Max.
Voted, '96	0.70	0.46	0	1
Registered	0.82	0.38	0	1
Public Mtg.	0.44	0.49	0	1
Local Reform Grp.	0.21	0.41	0	1
Political Grp.	0.10	0.30	0	1
Signed Petition	0.40	0.49	0	1
Attend Rally/Pol. Mtg.	0.18	0.39	0	1
Attended March/Protest	0.08	0.27	0	1

Table 1: This table summarizes the key independent and dependent variables. All independent variables are measured at the census tract level.

Variable	Voted '96		Attended Rally		Attended Public Mtg.	
	$\beta$	SE	$\beta$	SE	$\beta$	SE
Intercept	-7.626	3.044	9.328	2.950	7.221	2.380
% Drive Alone	-0.444*	0.184	-0.915*	0.171	-0.467*	0.146
Avg. Commute	0.002	0.003	0.004	0.003	0.001	0.003
Median Year Built	-0.683	1.522	-6.218*	1.487	-3.223*	1.199
Lg. Density	-0.014	0.012	-0.041*	0.012	-0.092*	0.010
Tr. Gini	-1.062	0.415	0.761	0.399	-0.073	0.324
Tr. Homogeneity	0.113	0.102	0.028	0.105	-0.017	0.083
Tr. Hsh. Med. Inc.	-0.006	0.002	-0.002	0.001	-0.001	0.001
Tr. % BA	1.962	0.298	0.720	0.279	0.237	0.225
Tr. % Sm House 95	0.552	0.182	-0.179	0.180	0.162	0.145
Center City	0.035	0.050	0.121	0.048	-0.074	0.039
English Interview	0.624	0.122	0.259	0.138	0.181	0.093
Male	-0.091	0.034	0.218	0.034	-0.143	0.027
Tenure	0.069	0.012	0.072	0.013	0.076	0.010
U.S. Citizen	4.426	0.214	0.874	0.125	0.250	0.079
Education	0.442	0.013	0.211	0.010	0.203	0.008
Income	0.006	0.001	0.005	0.001	0.006	0.000
Age	0.059	0.001	0.000	0.001	-0.011	0.001
Black	0.246	0.053	0.325	0.053	0.448	0.044
Hispanic	-0.301	0.068	0.202	0.076	0.167	0.060
Asian Am.	-1.472	0.124	-0.189	0.124	-0.365	0.096
Commute	0.132	0.044	-0.006	0.044	-0.003	0.034
Homeowner	0.364	0.041	0.151	0.044	0.417	0.034
Degrees of Freedom	25576		25668		25668	

Table 2: This table presents logistic regressions of three key dependent variables on the basic model, with the star (\*) denoting significance for key variables at the  $p < .05$  level. One key point that emerges from these results is that the impact of the various measures of design hinges on the dependent variable.

Dependent Variable	Avg. Commute Time			Median Yr. Homes Built		
	$\beta$	SE	Z	$\beta$	SE	Z
Voted 96	0.002	0.003	0.713	-0.001	0.002	-0.449
Reg to Vote	0.002	0.004	0.567	-0.002	0.002	-1.061
Signed Petition	0.001	0.003	0.426	-0.005	0.001	-3.939
Reform Grp	-0.002	0.003	-0.661	-0.005	0.001	-3.544
Attend Public Mtg	0.001	0.003	0.202	-0.003	0.001	-2.687
Member of Pol Grp	-0.003	0.005	-0.619	-0.006	0.002	-3.289
Attend March	0.005	0.005	1.070	-0.009	0.002	-4.439
Attend Rally	0.004	0.003	1.062	-0.006	0.001	-4.182
Dependent Variable	Lg. Pop. Density			Drive Alone		
	$\beta$	SE	Z	$\beta$	SE	Z
Voted 96	-0.014	0.012	-1.212	-0.444	0.184	-2.420
Reg to Vote	-0.030	0.015	-2.092	-0.406	0.222	-1.830
Signed Petition	0.010	0.010	1.048	-1.155	0.148	-7.814
Reform Grp	-0.017	0.012	-1.352	-0.776	0.169	-4.594
Attend Public Mtg	-0.092	0.010	-9.569	-0.467	0.146	-3.192
Member of Pol Grp	-0.035	0.016	-2.184	-0.886	0.213	-4.153
Attend March	0.015	0.018	0.813	-1.258	0.223	-5.639
Attend Rally	-0.041	0.012	-3.400	-0.915	0.171	-5.357

Table 3: Above, we present partial results from eight regressions using the same model as in Table 2, with Huber-White corrected standard errors. The percentage of tract residents who drive alone to work is a consistently negative predictor of political activity. Also, as neighborhoods get younger, they dampen participation in the less common and conventional forms of political participation. Z scores greater than 1.96 are significant at the  $p < 0.05$  level.

## Appendix

	Avg. Commute	Median Year Home Built	Log Pop. Density
% Drive Alone to Work	-0.22	0.49	-0.40
Avg. Commuting Time	1.00	0.11	0.08
Median Year, Home Built		1.00	-0.38
Lg. Population Density			1.00

Table 4: This table presents Pearson's correlations for the key independent variables. These variables are often not highly correlated, indicating that suburban design is indeed a multidimensional concept.

Variable	Mean	S.D.	Min.	Max.
Tract Level				
% with BA	0.18	0.11	0.00	1.00
Gini Coef. for Inc.	0.40	0.05	0.14	0.64
% Same House, 95-00	0.67	0.13	0.00	0.98
Herfindahl	0.72	0.21	0.22	1.00
Household Median Income Center City	46.35	19.93	0.00	200.00*
Individual Level				
Commute (hrs.)	0.27	0.40	0.00	4.92
Male	1.41	0.49	1.00	2.00
Asian American	0.02	0.15	0.00	1.00
Hispanic	0.09	0.29	0.00	1.00
Black	0.13	0.33	0.00	1.00
U.S. Citizen	1.95	0.22	1.00	2.00
Survey in English	1.96	0.19	1.00	2.00
Tenure in Community	3.57	1.48	1.00	6.00
Education	3.68	1.83	1.00	7.00
Age	44.69	16.67	18.00	99.00
Income	53.97	34.56	10.00	125.00*
Homeowner	0.69	0.46	0.00	1.00
Attitudinal				
Ideology	3.17	1.14	1	5
Interest in Politics	2.92	0.97	1	4

Table 5: This table summarizes the explanatory variables. A star (\*) denotes that this variable is in thousands. Tenure in the community and education are categorical variables with six and seven response options, respectively. Higher values of ideology are more conservative.

Dependent Variable	Avg. Commute Time			Median Yr. Homes Built		
	$\beta$	SE	Z	$\beta$	SE	Z
Voted 96	0.001	0.004	0.169	-0.000	0.002	-0.028
Reg to Vote	0.002	0.005	0.394	-0.002	0.002	-1.060
Signed Petition	-0.004	0.003	-1.243	-0.003	0.001	-2.174
Reform Grp	-0.005	0.004	-1.313	-0.004	0.002	-2.354
Attend Public Mtg	0.001	0.003	0.198	-0.004	0.001	-2.831
Member of Pol Grp	-0.004	0.005	-0.852	-0.005	0.002	-2.555
Attend March	0.002	0.005	0.366	-0.007	0.002	-3.076
Attend Rally	0.001	0.004	0.356	-0.005	0.002	-3.309
Dependent Variable	Lg. Pop. Density			Drive Alone		
	$\beta$	SE	Z	$\beta$	SE	Z
Voted 96	-0.018	0.013	-1.384	-0.397	0.196	-2.023
Reg to Vote	-0.037	0.016	-2.322	-0.244	0.237	-1.030
Signed Petition	-0.002	0.010	-0.219	-0.947	0.155	-6.110
Reform Grp	-0.031	0.013	-2.365	-0.526	0.178	-2.957
Attend Public Mtg	-0.094	0.010	-9.350	-0.423	0.152	-2.781
Member of Pol Grp	-0.039	0.017	-2.296	-0.682	0.229	-2.978
Attend March	-0.004	0.019	-0.227	-0.880	0.239	-3.680
Attend Rally	-0.050	0.013	-3.827	-0.696	0.181	-3.839

Table 6: Here, we modified the model from Table 2 to include several potentially confounding political variables, including measures of respondents' political ideology, their interest in politics, and their county's two-party support for Al Gore in the 2000 election. The conclusions from Table 3 remain unchanged, meaning that the results are not due to differences in political attitudes across neighborhood contexts. Z scores greater than 1.96 are significant at the  $p < 0.05$  level.

Dependent Variable	Avg. Commute Time			Median Yr. Homes Built		
	$\beta$	SE	Z	$\beta$	SE	Z
Voted 96	0.004	0.006	0.737	-0.001	0.003	-0.199
Reg to Vote	-0.003	0.007	-0.395	-0.000	0.003	-0.030
Signed Petition	-0.006	0.004	-1.406	-0.000	0.002	-0.223
Reform Grp	-0.006	0.005	-1.076	-0.004	0.002	-1.753
Attend Public Mtg	-0.001	0.004	-0.194	-0.004	0.002	-1.949
Member of Pol Grp	-0.002	0.007	-0.318	-0.005	0.003	-1.666
Attend March	0.006	0.008	0.790	-0.007	0.003	-2.055
Attend Rally	0.006	0.005	1.237	-0.002	0.002	-0.938
Dependent Variable	Lg. Pop. Density			Drive Alone		
	$\beta$	SE	Z	$\beta$	SE	Z
Voted 96	-0.032	0.018	-1.722	-0.544	0.325	-1.671
Reg to Vote	-0.032	0.023	-1.345	-1.203	0.437	-2.751
Signed Petition	-0.004	0.013	-0.284	-1.210	0.226	-5.345
Reform Grp	-0.026	0.017	-1.511	-0.667	0.264	-2.530
Attend Public Mtg	-0.096	0.014	-7.100	-0.404	0.228	-1.769
Member of Pol Grp	-0.038	0.022	-1.763	-1.074	0.322	-3.335
Attend March	0.003	0.026	0.131	-1.115	0.366	-3.043
Attend Rally	-0.044	0.017	-2.604	-0.629	0.266	-2.361

Table 7: To confront the challenge of selection bias, we re-estimated the model from Table 2 on the subset of 13,018 respondents who have lived in their present community for over 10 years. These entrenched people have been susceptible to community influence for longer, and may well have jobs, families, friends, or other factors that prevent them from moving. Even among this group, *as the number of one's neighbors who drive alone to work rises, participation in a variety of political activities drops*. Z scores greater than 1.96 are significant at the  $p < 0.05$  level.

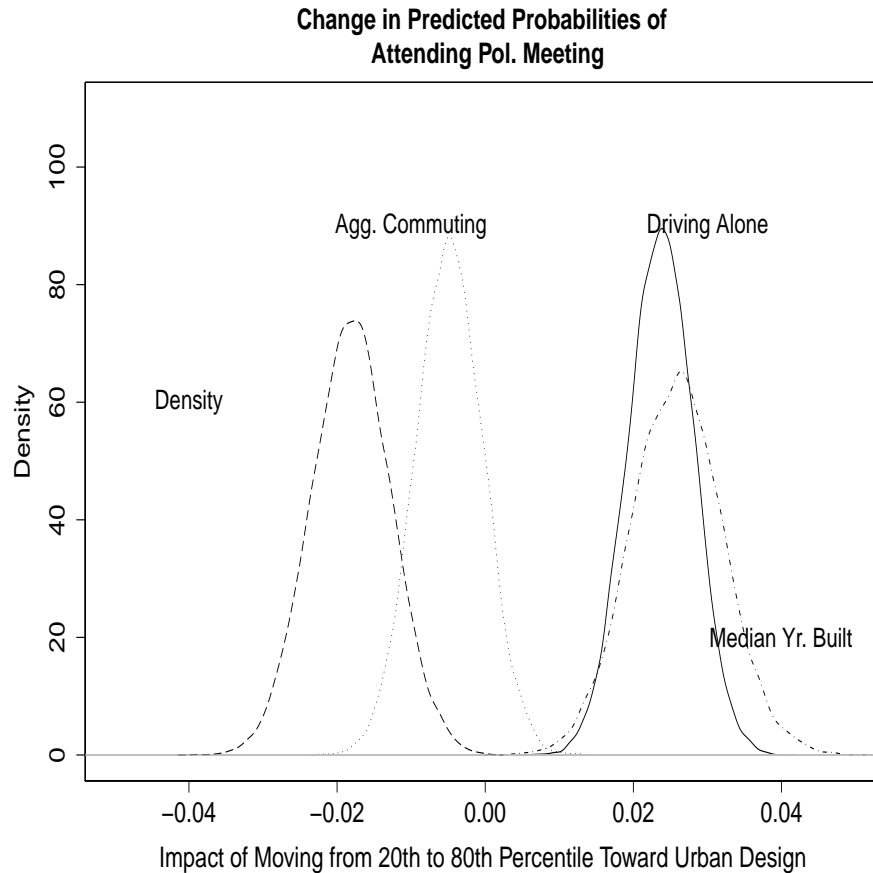


Figure 1: This Figure allows us to compare the impact of various aspects of suburban design on a key dependent variable, the probability of attending a rally or political meeting. It shows the predicted probabilities when we shift each of our four measures from the 20th to the 80th percentile away from “suburban” design. Two variables are positively related to rally attendance: residence in a community with relatively few residents driving alone to work or in an older community show higher probabilities of attending rallies or political meetings. Density has the opposite relationship: as density rises, attendance at political meetings and rallies declines.