Abstract: The idea that public policy tends to be biased in favor of groups of citizens who vote at high rates is central to the scholarly study of American politics, but few studies have actually tested it. In this paper, I carry out a test of the expected turnout-policy connection that leverages variation in the turnout of senior citizens in city elections and the senior-friendliness of city transportation policy. On average, I find no evidence that a higher percentage of seniors in the electorate is associated with better transportation for seniors. In the second half of the paper, I use this surprising null finding as a launching pad for developing expectations about the conditions under which a group of citizens will influence policy. In a preliminary set of findings, I show that city transportation policies are friendlier to seniors when senior citizens are a more cohesive, politically focused group in the city, and also when they engage in political activities other than voting.

This paper was prepared for the annual meeting of the Midwest Political Science Association in Chicago, IL, April 7-10, 2016. Thank you to the Dipaola Foundation for financial support, to Sarah Chevallier and Gabrielle Elul for research assistance, and to Paul Mitchell from Political Data, Inc., for providing the voter turnout data.
V.O. Key once wrote that “politicians and officials are under no compulsion to pay much heed to classes and groups of citizens that do not vote” (Key 1949, 527). Today, the idea that public policy tends to be biased in favor of groups of citizens who vote at high rates is central to the scholarly study of American politics—and for good reason. Some of the subfield’s best-documented empirical findings show that individual characteristics such as race, education, and age are strong predictors of the decision to vote (e.g., Rosenstone and Hansen 1992, Verba et al. 1995), and that in the aggregate, active voters are an unrepresentative subset of those eligible. Given the dominant theoretical frameworks of American politics, it is no great leap to the conclusion that political outcomes and policies are biased as a result. The Downsian model of political competition, rooted in the median voter theorem, emphasizes the link between voters and elected officials, and it implies that politicians make policy decisions in response to those who vote in their elections (Downs 1957). If some groups of citizens vote at higher rates than others, then elected officials should favor them in their policy decisions.¹

But if political science adherence to the idea of a turnout-policy connection is robust, the empirical evidence in support of such a connection is not. As Martin and Claibourn (2013, 59) put it, “very few studies have successfully connected citizen participation with policy or political outcomes. Rather, scholars tend to take a theoretical approach and assume effects” (see also Leighley 1995, Lijphart 1997, Verba et al. 1995). There are some studies that link the overall turnout rate to election outcomes (e.g., Hajnal and Trounstine 2005, Pacek and Radcliff 1995), and others document a relationship between turnout in congressional districts and policy responsiveness in roll-call votes (Martin and Claibourn 2003) and federal spending (Martin

¹ Strictly speaking, this could happen for one of two reasons: either because voters select representatives who share their policy views or because officials are disproportionately responsive to citizens who will be important to their reelectons (see Griffin and Newman 2005). The empirical implication, however, is the same either way: the greater a group’s share of the active electorate, the more policy should tilt in its favored direction.
But studies that actually document a link between the higher turnout rates of particular groups and policy outcomes in their favor are surprisingly rare.

There are some notable exceptions. Button (1989) examines six communities in Florida from the 1950s to the 1980s and finds that when African American voter registration and turnout rose after the passage of the Voting Rights Act, there were significant expansions in public services (see also Keech 1968). Hill and Leighley (1992) find that when turnout in state elections is biased in favor of citizens of high socioeconomic status, state welfare policies tend to be less generous. In my own research on school board elections, I argue that teacher unions and their supporters have a greater relative presence in low-turnout environments, and I document a negative relationship between overall turnout and policies preferred by public school teachers (Anzia 2014). All of these studies take the important step of showing that when groups of citizens make up a larger share of the electorate, they are more likely to receive the policies they favor. But given the centrality of this general theoretical expectation in political science research (e.g., Bennet and Resnick 1990; Piven and Cloward 1988; Lijphart 1997), what is perhaps most striking is that so few studies have provided empirical evidence in support of it.

One likely reason for the dearth of empirical research on voter participation and policy outcomes is that American politics scholars in recent decades have focused very heavily on national elections and the U.S. Congress. National politics is certainly an appealing research target: it receives the lion’s share of media attention, and it offers troves of easily accessible data to analyze. But national politics may well be a context in which it is quite difficult to detect a relationship between turnout and policy. As Citrin et al. (2003) explain, in national elections, the preferences of voters are not all that different from the preferences of nonvoters. There is also little variation in policy to analyze when the focus is a single policy-making body like the U.S.
Congress. Congressional roll-call votes offer one way out of this dilemma; they at least provide variation in legislators’ positions on policies. But policy, of course, is shaped both by action and inaction (Hacker and Pierson 2014, Moe 2015, Pierson 2015). And by focusing on roll-call votes, scholars are looking only at the subset of issues that is being acted upon—and ignoring the effects of what policymakers are not doing in a policy area.

For both substantive and methodological reasons, then, it should be much easier to detect a relationship between turnout and policy in state and local governments. First, there are 50 states and tens of thousands of local governments, each with different policies. Second, in local elections in particular, turnout tends to be much lower than in national elections, and thus the potential for turnout bias is much greater (Hajnal and Trounstine 2005). State and local governments therefore stand to be an excellent test bed for the expected link between turnout and policy—a context in which it seems most likely that such a link should exist in detectable form.

Perhaps it is not surprising, then, that the few existing studies that successfully connect the turnout rates of particular demographic groups to political and policy outcomes usually do so with state- and local-level data. It is also not surprising that they focus on two groups of citizens that are known to vote at disproportionately low rates: racial minorities and low-income citizens (e.g., Hajnal and Trounstine 2005; Hill and Leighley 1992). That said, one of the strongest predictors of the individual decision to vote is age (e.g., Campbell et al. 1960, Glenn and Grimes 1968). Indeed, Wolfinger and Rosenstone (1980, 102) find that age is one of the most important factors in explaining turnout, second only to education. How, then, does turnout bias in favor of older voters affect public policy? Does the disproportionately high turnout of senior citizens lead to policies that disproportionately favor seniors?
The answer, very simply, is that we do not know. Campbell’s (2003) landmark study of Social Security and senior citizens’ activity in national politics shows convincingly that seniors have indeed been influential in that arena, but the goal of her study is not to isolate the effect of high turnout; she instead illustrates the multiple channels through which seniors influence Social Security policy. There is also an education finance literature on the so-called “Grey Peril,” the general argument being that the size of the local senior population (most of whom do not have school-aged children) has a negative effect on public school spending. Some empirical findings support that argument (e.g., Brunner and Balsdon 2004, Miller 1996, Poterba 1997), but the evidence overall is mixed (see Fletcher and Kenny 2008). Regardless, these school finance studies do not focus on or measure the turnout rates of seniors in local elections. As it stands, we do not have a good sense of how age bias in turnout affects public policy.

Moreover, understanding the impact of seniors’ political participation in state and local government is important in its own right. State and local governments account for more than half of all government spending in the United States, and as Kiewiet and McCubbins (2014) explain, these governments today are devoting increasing shares of their budgets to formula-based programs that largely benefit older Americans—most notably, Medicaid and government employees’ retirement benefits. Scholars and practitioners alike have argued that state and local spending on older Americans is beginning to crowd out spending on other public services (ibid). In such a policy environment, it is well worth asking whether high senior citizen participation rates affect how governments spend public money, how governments adapt to tightening budgets, and how receptive elected officials are to reform proposals.

This paper is a first step in that direction: it is an attempt to assess the relationship between the importance of senior citizens as voters and the senior-friendliness of local
government policies. As my empirical case, I focus on senior citizen turnout in the elections of over 400 Californian cities, asking whether cities that have larger shares of seniors in the active electorate are more likely to offer special transportation services to seniors. My initial findings, it turns out, are not what the literature leads us to expect: I find no statistically significant relationship between the senior-friendliness of city transportation policies and the percentage of city voters who are 65 and over. Why, in this case, does it look like the group’s electoral presence is not significantly associated with the presence of policies favorable to them? The second part of the paper uses this null finding as a launching pad for developing hypotheses about the conditions under which a group of citizens will influence policy, and my preliminary tests of these hypotheses support my expectations. In the end, there are two factors that strongly predict the availability of senior-friendly transportation services: the cohesiveness and focus of the city’s senior community, and a form of seniors’ political activity other than voting.

Senior Citizens in City Elections: Testing the Turnout-Policy Connection

With few exceptions (e.g., Hill and Leighley 1992), research that examines the turnout-policy connection does not actually measure the turnout rates of the particular groups in the particular elections they are focused on—and for good reason. It is notoriously difficult to collect any data on voter turnout in local elections, let alone data on the turnout rates of different groups. To get data on turnout in local elections disaggregated by type of voter, one usually has to acquire individual voter files, and in many states, the voter files provided by the state government only provide information on individuals’ participation in state elections—not in local elections, which are usually held on different dates. The solution to that problem would be to go county to county (or city to city) to collect and assemble local government voter files, but that quickly turns into a tedious, costly, and time-consuming process. Thus, while local
governments are—in principle—an excellent test bed for the hypothesized turnout-policy connection, there are considerable obstacles to collecting the data needed for such a test.

It is mainly for data availability reasons, then, that I focus my analysis on cities in California. In California, Political Data, Inc., (PDI) collects, cleans, assembles, and regularly updates the voter files of all of the state’s local jurisdictions that administer elections. I was therefore able to purchase from PDI data on the number of registered voters, by age, who voted in recent municipal elections in the state. California happens to be a great testing ground for other reasons as well: First, it has more than 480 municipal governments, each with a population of senior citizens, and each with its own policies. In addition, the timing of regular city elections varies across the state, with some holding elections at the same time as state and national general elections, others holding city races concurrently with state and national primary elections, and still others on entirely different days (off-cycle). Because the timing of elections has such a large impact on overall turnout rates (Anzia 2014, Hajnal et al. 2002), the within-state variation in local election timing makes it likely that age bias will vary from city to city as well (see Hajnal and Trounstine 2005).

In March of 2014, therefore, I used the local election data provided by the California Elections Data Archive (CEDA) to identify the most recent regular election date for each of the state’s municipal governments.\(^2\) Then, for that list of city election dates, as well as for the November 2010 and 2012 elections for all cities, PDI provided city-level data on the number of residents who were registered and the number who voted in that election, broken down by age.

A few caveats about this dataset are worth mentioning. First, because some of the smallest cities do not hold elections every cycle (for example, they might skip an election if the

\(^2\) At the time, the most recent year of election data available through the CEDA was 2012, so the most recent election figures in my dataset are from November 2012.
race is uncontested), I limit my analysis to cities with at least 1,000 residents. I also exclude four cities with more than 1,000 residents that did not, according to the CEDA data, have a regular election between 2008 and 2012. Of the remaining cities, some were not included in the data sent by PDI; most of these were cities that held their regular elections on highly unusual days, such as Piedmont and Modesto, which held elections in February of 2012. Even with these cities excluded, however, the PDI dataset contains rich information on the age distribution of registered and voting citizens in the elections of 434 California cities.3

**Age and Turnout in California City Elections**

Given how little we know about voters in local elections (see Oliver 2012), an important starting point is to simply describe how registration and voting rates vary by age in these cities. First, what percent of city residents in each age category are even registered to vote? To answer that question, I started with the PDI data on the number of registered voters in each age category and city as of the November 2010 election. I then merged in city-by-age population data from the 2010 U.S. Census to calculate—for each age category and each of the 434 cities—the percent of the city population registered to vote. The dashed line in Figure 1 presents the percent registered for each age category, averaged over all 434 cities in the dataset.4 It is clear from the figure that registration rates are far from universal in any age group, but it is also clear that registration rates vary greatly by age. On average, within California cities, about 57% of residents who are 20 to 40 years old are registered to vote. Among those who are 60 to 80 years

---

3 All of the elections in this dataset were held between 2008 and 2012. It is important to note that the PDI data tell us how many people voted in a particular city on a particular day—not how many people voted in particular races on those days. Therefore, if some voters turned out to vote for the president in November 2012 and did not cast a vote in city races, those voters are still counted as having turned out on the city election day.

4 I limit the analysis to residents 90 years old and younger because many cities have very small numbers of residents above 90. Also, there is some noise in the percent registered measure because the numerator and denominator come from different sources (PDI and the U.S. Census, respectively) and were collected at different points in time. For presentation purposes, the dashed line in Figure 1 is based on three-year moving averages of percent registered in each city.
old, however, 76% are. Thus, even before we turn to voting rates as a percentage of those registered, it is important to recognize that older city residents are much more likely to be registered than younger city residents.

Next, I use the PDI data to calculate the percentage of registered voters of each age in each city who voted in the most recent city election. The solid line in Figure 1 represents that average of those percentages within age categories across all 434 cities.\textsuperscript{5} There, we can see that of those registered to vote, a much greater share of older voters actually vote in city elections than younger voters. In the average city, 40% of registered voters 20 to 30 years old voted in the most recent city election. Among registered voters 65 to 75 years old, however, 74% did—a 34 point increase. In the typical California city, therefore, city electorates tilt strongly in favor of older residents, both because older residents are more likely be registered, and because among those registered, older residents turn out to vote at much higher rates.

Does the degree of age bias in turnout depend on characteristics of the cities and their elections? It is possible, for example, that the timing of a city’s election has a greater impact on the turnout rates of younger voters than of older voters—and that the age gap in turnout is smallest in city elections held concurrently with presidential elections. Figure 2 confirms that expectation. There, I show the average turnout rates by age in city elections held at four different times: concurrently with presidential elections (solid line), concurrently with midterm and gubernatorial elections (short-dashed line), during a presidential or statewide primary election (dotted line), and entirely off-cycle (long-dashed line). For all ages, turnout is lowest in off-cycle city elections, higher during primaries, higher still during midterm and gubernatorial elections, and highest during presidential elections. But the gap between the turnout rates of older and younger voters is also wider during some types of elections than others. During

\textsuperscript{5} Like the dotted line, the solid line is based on a three-year moving average within cities.
presidential elections, the average difference in the turnout rates of 65 to 75 year olds and 25 to 35 year olds is 28 percentage points, whereas in off-cycle and midterm elections, it is 34 points and 38 points, respectively. The average age gap in voter turnout appears to be largest in city elections held during primaries, where is a whopping 50 percentage points. It is apparent from Figure 2, then, that age bias in turnout depends on the timing of city elections—and is especially large in cities that hold their elections concurrently with state and national primaries.6

Next I explore whether there are other city or election characteristics that help to explain the extent of age bias in city election turnout. Here, the unit of analysis is the city, and the dependent variable is the difference between the turnout rates of 65 to 75 year olds and 25 to 35 year olds. Quite strikingly, this variable is positive in every city. But the size of the gap does vary considerably: it ranges from 6 percentage points to 59 percentage points, with a median of 30 points. In Table 1, I use OLS to regress the age gap on indicators for the timing of the city’s election (the excluded category is concurrence with presidential elections), an indicator for whether there was a mayoral race on the ballot, and city demographic variables including log total population, log per capita income, and the percentage of residents who live in urban areas. The positive coefficients on the election timing variables show that the election date does have a significant effect: the age gap is greater in city elections held at times other than presidential elections. By contrast, it matters little whether there is a mayor on the ballot, whether it is a large or small city, or whether per capita income is high or low. In fact, the only other variable that has a statistically significant coefficient is percent urban: the age gap in turnout appears to be smaller in more urban municipal governments.

6 One might be concerned that Figure 2 is simply picking up differences in the cities that have elections at these four times. In the online appendix, I show how the age composition of the electorate varies within cities on different election dates. For example, I compare turnout by age in off-cycle city elections to turnout by age in those same cities during the November 2012 presidential election. I do the same for cities that hold their elections concurrently with primaries. The patterns in the appendix are the same as those shown here.
So far, this descriptive analysis has revealed that older city residents are more likely to be registered than younger residents, that they vote at higher rates than younger citizens (oftentimes much higher), and that the age gap in turnover is largest in city elections held at times other than presidential elections. But what does all of this mean for the composition of the electorate in city elections? After all, a high turnout rate among a very small group of citizens might not weigh heavily on the decisions of election-oriented politicians. High turnout by a large group, by contrast, should matter a great deal. Given that my goal is to test whether elected officials are more responsive to groups that make up a larger share of the voting electorate, the quantity of greatest interest here is the percentage of city election voters who are senior citizens.

For each of the 434 cities in the analysis, I calculate the percentage of city election voters who are between 65 and 90 years of age—a measure I call Percent senior. The distribution of Percent senior is shown by the solid line in Figure 3: it ranges from 10% to 83% with a median of 25%. Figure 3 also shows the distributions of two other variables, for comparison purposes: percent of city population that is between 65 and 90 years old, and percent of city registered voters who are between 65 and 90 years old. Focusing on the dotted line, we can see that in the median city, seniors make up 15% of the population, but they make up 19% of those registered and 25% of voters in city elections. But highlighting the medians misses the right skew in the distribution of Percent senior: in 105 of the 434 cities, for example, senior citizens make up over a third of voters in city elections—even though their presence in the population as a whole in those cities is considerably smaller. Therefore, the electoral presence of senior citizens as voters varies a great deal across Californian cities. In what follows, I test whether this variation helps to explain variation in city policy.
City Transportation Services for Senior Citizens

To test the turnout-policy connection, it would be helpful to have city-level measures of seniors’ policy preferences; with those data in hand, I could test whether city policies are more aligned with seniors’ preferences when seniors make up a greater percentage of the city electorate. Unfortunately, I know of no public opinion data that detail the preferences of senior citizens on local policy issues in each of these 434 cities. An alternative approach is to ask whether there are local policies for which it is safe to assume that seniors have certain preferences—and preferences that diverge from those of non-seniors. If so, one way forward would be to measure city variation in those policies and test whether Percent senior helps to explain that variation.

A good candidate for that approach, I argue, is local transportation policy—specifically, local transportation services designed for senior citizens. Many cities, counties, and special districts across the United States provide what is called demand-response (DR) service, which is defined by the Federal Transit Administration as “a transit mode comprised of passenger cars, vans or small buses operating in response to calls from passengers or their agents to the transit operator, who then dispatches a vehicle to pick up the passengers and transport them to their destinations.”7 DR service therefore differs from standard public transportation in that it usually does not follow a fixed route or operate on a set schedule; instead, it picks up and drops off users in the locations of the users’ requests. While many local governments do not provide DR service, the ones that do typically provide the service for senior citizens, disabled citizens, or both. My assumption, then, is that seniors would rather have access to DR service than not, and moreover that they would rather have a service exclusively for them (and the disabled) than a

---

service that is open to the public. Non-seniors, by contrast, do not directly benefit from DR service (unless it is available to the general public), and so by comparison, we should expect them to be less strongly in favor of DR service for seniors.\(^8\)

With this logic as the motivation, during the spring of 2014, I hand-collected data on the DR services available to senior citizens in each California municipality. Most of the information was available on the websites of California’s cities, counties, and transit authorities, but when needed, I followed up with phone calls to the relevant agencies. Over the course of two months, I mapped out which DR services were available to seniors living in each municipal government. In addition to identifying whether DR service was available, I noted the agency providing the service, the geographic area served, and age or other eligibility requirements of the service. The result was a dataset of all the public DR services available to senior citizens in California.

In roughly a third of the 434 cities, senior citizens do not have access to any DR service, but in the cities where they do, the most common provider is the city government itself. Specifically, there are 172 cities in which seniors have access to a DR service provided by a city agency—most often a transportation department, a parks and recreation department, a human services department, or the city manager’s office. In addition, seniors in 88 cities have DR service provided by regional transit authorities or transit districts; these entities serve multiple cities and are typically governed by boards composed of city council members and county commissioners from the jurisdictions served. And finally, 84 cities have DR service for seniors provided by the county government. There are a few cities that have more than one DR service

---

\(^8\) Other city policies are less likely to have these features. Many of the most common city services—such as street sweeping, refuse collection, and public parks—are distributed relatively equally among city residents (Oliver 2012). For example, seniors might prefer high spending on public safety, but the preferences of non-seniors might not be all that different. Another possibility is tax policy; as I explained earlier, one argument in the education finance literature is that seniors prefer lower taxes and less spending on public schools than younger residents. But it is not obvious that the same should be true of city tax policy; seniors presumably do benefit—sometimes very directly—from city services paid for by local taxes.
for seniors; for example, 37 of the cities that have county-provided DR service have a second DR service provided by a transit authority or a city agency.

If only city agencies could provide DR service, then testing for the turnout-policy link in city government would be straightforward. The question, then, is how to deal with cities that receive service from a regional transit authority or a county government. Because the governing boards of transit authorities are usually composed of city councilmembers from the various cities they serve (and county commissioners), the governing boards of transit authorities may well pay attention to voters in city elections. But there is little reason to expect a link between city elections and policies made by county governments. For these reasons, in the analysis to follow, I categorize cities according to whether they receive DR service from either city agencies or transit authorities. Specifically, the dependent variable $DR\text{ service}$ equals 0 if the city’s seniors have no access to DR service from a city or transit authority (184 cities), 1 if seniors have access to a DR service that is also available to the public (83 cities), and 2 if seniors have access to DR service that is exclusively for seniors (167 cities).

In Figure 4, I provide a first look at the data: box plots of the variable $Percent\text{ senior}$ in each of these three categories of cities. Does it look as though local transportation policy is more senior-friendly in cities where larger percentages of city voters are seniors? The answer, surprisingly, is no. While Figure 4 is helpful in identifying a city that might be an influential point—Laguna Woods, where 83% of city voters are seniors—there is little in the figure to suggest that there is a link between senior turnout and senior-friendly policy.

Of course, this is only a bivariate plot, and there may be city characteristics that are correlated with both the percentage of seniors in the electorate and the senior-friendliness of

---

9 For example, the city of Canyon Lake is served by the DR service of the Riverside Transit Authority, and the Board of Directors for that authority includes a city councilmember from Canyon Lake (as well as city councilmembers from the other cities served, and representatives from Riverside County).
transportation. Perhaps smaller cities tend to have high percentages of seniors in the population (and therefore also in the electorate), but also have insufficient capacity to provide DR service. It may also be that more rural, less dense areas are less likely to have DR service but are also more likely to have high percentages of seniors in the population. Income may be a factor here as well if poorer cities have higher percentages of seniors and are less able to afford DR service. There is good reason, then, to account for city size, density, and income in testing whether the voting importance of seniors is associated with transportation policy. In addition, if a city’s seniors already receive DR service from their county government, city officials may be less inclined to provide a second service, and that consideration needs to incorporated into the analysis.

As a next step, then, I use an ordinal logit model to explain the senior-friendliness of city transportation policy (DR service) with a series of city-level variables: 10 the percentage of city voters who are 65 and over (Percent senior), log city population and log population density as measured by the 2010 U.S. Census of Population, and log per capita income as measured by the American Community Survey. 11 I also control for the senior-friendliness of any DR service a city’s residents receive from their county government: that variable equals 0 if the county provides no DR service to the city, 1 if it provides DR service to the general public in the city, and 2 if it provides DR service exclusively for the city’s seniors and the disabled. 12 To address correlation in the errors of cities in the same county, I cluster the standard errors by county.

---

10 My conclusions are mostly the same when I use OLS, which treats the intervals between adjacent categories as equal. It is not clear that such an assumption about equal intervals is warranted, however. For example, it is reasonable to think that, for seniors, having some DR service is much better than having none, even if it is open to the public. However, compared to DR service open to the public, having an exclusive DR service for seniors is arguably somewhat better.

11 I use the five-year estimates from 2013.

12 I also drop Laguna Hills from this analysis—the city in which 83% of voters were 65 and older.
The results of this model are presented in column 1 of Table 2. There, we can see that larger and denser cities tend to have transportation policies friendlier to seniors: the coefficients on log population and log population density are both positive and statistically significant. But even with these city-level factors taken into account, the coefficient on Percent senior is statistically indistinguishable from zero. Surprisingly, the results of this model do not show that cities with more seniors in the electorate are more likely to have policies that cater to seniors.

Given that this null finding is not what the American politics literature leads us to expect, what can explain it? One possibility is that the data here are problematic; perhaps it is difficult to detect a positive relationship (supposing one exists) using cross-sectional data. While I have not been able to acquire reliable panel data on city DR service—because most city officials do not know the detailed history of their cities’ DR services—in some cities, the services date back several years, and sometimes even decades. Unfortunately, it is not possible to measure in any precise sense how the composition of past city electorates differed from those of today. But it is true that many California cities that currently hold their elections during November of even-numbered years recently switched to that schedule from off-cycle elections—and the CEDA data allow us to identify them. If seniors made up a much larger percentage of those cities’ electorates in the past, then the variable Percent senior may be a poor measure of the electorates that actually inspired city officials to adopt DR service years ago.

In Table 2, I deal with these 46 cities in two different ways. First, in column 2, I add a binary indicator variable equal to 1 for the cities that currently hold elections in November of even-numbered years but used to (within the past two decades) hold them off-cycle. The coefficient on that variable, Off-cycle history, is positive but statistically insignificant, and even with that variable included, the coefficient on Percent senior is still statistically indistinguishable.
from zero. The same is true in column 3, where I drop the 46 cities with a recent history of off-cycle elections. There, the coefficient on Percent senior grows slightly but is still insignificant.

Another possibility is that cities within the same county might share characteristics that are correlated with both Percent senior and DR service. Perhaps omitting these characteristics from the model works to mask a positive relationship between senior turnout and policy. For example, counties often provide transportation funding to their cities and transit authorities, or they are charged with distributing state transportation money to local governments within their boundaries. To deal with this, in column 4, I add county fixed effects (and drop the county DR service control variable). In that set of estimates, the coefficient on Percent senior is actually negative—a finding that is hard to square with the idea that higher senior turnout should lead to policies friendlier to seniors.

Could it be that the modeling choice or the operationalization of the dependent variable is the problem? In column 5, I estimate the model from column 2 using OLS rather than ordinal logit, but even there, the coefficient on Percent senior is insignificant. And in columns 6 and 7, I use two simpler dependent variables. The dependent variable in column 6 equals 1 if a city’s seniors have access to any DR from a city agency or transit authority—regardless of who else can use it; it equals 0 if the city has no DR service. Even in this logit model however, I find no significant effect of senior turnout on policy. In column 7, the dependent variable is a binary indicator for whether seniors have access to DR service provided by the city government; services provided by transit authorities and county governments enter as controls. There is some evidence here that city and transit authority DR services are substitutes: the coefficient on the

---

13 The county DR control variable in column 6 is also just a binary indicator for whether the county government provides any DR service to seniors in the city.
transit authority DR service variable is negative and significant. But even here, where the focus is exclusively on DR service provided by the city, I find no significant effect of senior voting.

In many ways, this is a context in which it should be fairly easy to detect the expected positive relationship between the importance of a group in the electorate and public policies that cater to that group. This design allows me to compare hundreds of governments, each with different policies. It focuses on a group of citizens that is known to have great influence on national policy (Campbell 2003). And instead of assuming something about the importance of seniors as voters in elections, I have measured it—and tested whether it can explain variation in policies friendly to seniors. Yet I have not found the expected relationship. Contrary to the general expectations of the literature, I have found that on average, in this case, there is no evidence of a turnout-policy connection.

**When Does a Group of Citizens Have Influence?**

Several questions emerge from this analysis. If seniors’ presence as voters in city elections does not explain the senior-friendliness of transportation policy, then what does? More generally, are there conditions that have to be met—beyond high turnout rates—in order for a group of citizens to influence public policy? To account for the null finding in Table 2, I argue that it is worth revisiting some of the more traditional political science literature about group participation and influence—a literature that puts forward rich theoretical ideas that are often overlooked in modern scholarly American politics research.

There is one important consideration here that is not at all controversial: that is, even within the Downsian theoretical framework (Downs 1957), in order for the voting presence of a group to make a difference to policy, that group has to have policy preferences that are distinct from other citizens (see, e.g., Citrin et al. 2003, Schlozman et al. 2012). This condition need not
hold in every context, and when it does not, we shouldn’t expect the group’s turnout rates to make much difference to policy.

But in the analysis presented above, I focused on transportation services for seniors precisely because that is an area in which it is highly likely that seniors’ policy preferences look different than those of non-seniors. Here, however, it may be important to draw a distinction between the substance of preferences and the focus of the citizens who hold those preferences. This distinction, after all, is a central part of Arnold’s (1990) discussion of “attentive publics”: some groups of citizens feel passionately about a particular issue and weigh that issue heavily in their vote decisions, whereas others—even if they state a preference on an issue when asked—are less attentive to the issue and make their vote decisions on the basis of other factors. It is possible, then, that having homogenous, distinct preferences on an issue is not enough for a group’s turnout to affect policymakers’ decisions. If Arnold’s logic is correct, the group also has to be focused on the issue and willing to vote (at least partly) on that basis.

In American politics research today, most scholars pay little attention to what makes certain groups of citizens focused and others less focused on particular issues. But older political science theories, particularly those that highlight the importance of social interaction and group memberships, have much to contribute here. For example, Berelson et al. (1954) argue that individuals’ political views are shaped by the groups they associate with, and that organizational memberships reinforce individuals’ latent political dispositions. In The American Voter, Campbell et al. (1960) analyze how group membership influences individuals’ behaviors and political views, writing that “when primary groups engage in political discussion and are homogenous in basic member viewpoints, the attitudes of the individual must be continually reinforced as he sees similar opinions echoed in the social group” (ibid, 293). Arnold (1990),
too, notes that citizens who interact frequently are more likely to become attentive publics. While American society as a whole has seen considerable decline in group memberships that involve social interaction (Putnam 2000, Skocpol 2003), there are still some forums—such as workplaces—in which social interaction helps to shape groups’ preferences and their political orientation (e.g., Estlund 2003, Mutz and Mondak 2006). It may be, then, that groups of citizens who regularly interact, and who are part of what Campbell et al. (1960) call “self-conscious groups,” have more focused preferences on issues that affect the group and are more likely to vote on the basis of those preferences.

Turning back to senior citizens in California city governments, how might we identify communities where seniors are focused and willing to vote on the basis of senior issues—and distinguish them from communities where seniors have less focus and vote on the basis of other matters? Here, again, one would like to have detailed data on the opinions and interactions of seniors in each of the 434 cities, but no such data exist. In the absence of more direct measures of seniors’ social interaction and political focus, a reasonable proxy is the presence of a senior center. Senior centers provide a variety of services to a community’s seniors, and they are also places where seniors interact socially as a group. If so, then on average, seniors in cities with senior centers should be more attentive to local senior issues than those in cities without senior centers. As a result, they should also be more likely to have senior-friendly transportation. Therefore, using information on the Congress of California Seniors’ website, cross-checked with

---

14 Campbell et al. (1960, 293) distinguish between “self-conscious groups, such as racial or ethnic communities, and those groups that emerge from certain formal categories, such as the age cohort of people over 60 years old or such as women.” For the former, individuals are “part of a group conscious of itself as a group” (ibid, 473)—or members. The latter simply have some shared demographic characteristic.

15 One can think of the distinction I am drawing here—between seniors in cities with and without senior centers—as a distinction between seniors as a “self-conscious group” and seniors that simply share demographic characteristics (see Campbell et al. 1960).
information on cities’ official websites, I created an indicator equal to 1 if the city has a senior center (360 cities) and 0 if it does not (74 cities).

While far from perfect, this measure allows for a preliminary test of the expectation that groups of citizens who are focused are more likely to receive favorable policies than groups of citizens who are less focused. But so far, this discussion has been only about citizens. In order for a group to have influence on policies, the officials charged with making those policies have to be aware of the group’s preferences, and a vote for a candidate, by itself, does not clearly communicate policy preferences. Public opinion polls can help policymakers learn about citizens’ preferences, but in local politics, polling is not especially common. Political parties can impose some structure as well, although in California, local elections are formally nonpartisan. If there is sufficient ideological constraint in the electorate, elected officials might be able to infer something about citizens’ policy preferences from their votes, but as Oliver (2012) shows, politics in most municipal governments is less ideological than politics on the national level. In this environment, then, we cannot assume that elected officials somehow know what groups of citizens want—even if those citizens vote at high rates. Actually, in order for policymakers to be aware of citizens’ policy preferences, citizens have to do something other than vote, such as contacting elected officials, testifying at hearings, or lobbying as a group.

In recent years, a growing number of American politics scholars have argued that these other forms of political activity deserve much greater attention by political scientists. Bartels’ (2008, 275-279), for example, finds that even when he controls for the differential voting rates of low-, middle-, and high-income citizens, U.S. senators are still mostly responsive to the preferences of high-income voters in their roll-call votes. The implication, then, is that high-income citizens must have influence in some other way, through some other form of political
activity. Martin (2003) notes that political activities like contacting elected officials convey much more “policy content” to decision-makers than voting (see also Schlozman et al. 2012, Verba et al. 1995), and Arnold (1990) explains that many attentive publics are highly organized and communicate their members’ policy preferences by lobbying (see also Griffin and Newman 2005). While there is a literature on interest groups (see Hojnacki et al. 2012), Hacker and Pierson (2010, 2014) argue that American politics scholars have been too attached to the Downsian theoretical framework—which puts voters in a central role—and have not paid enough attention to the political influence of interest groups. Indeed, the findings of Gilens and Page (2014) suggest that the preferences of economic elites and interest groups are better able to explain congressional roll-call votes than the preferences of the median voter in the electorate.

What might a more comprehensive model of political influence look like? Campbell’s (2003) study of senior citizens and Social Security is a good example: it illustrates the many ways in which groups of citizens can influence policy—and what conditions must hold for them to be successful. Voter turnout is certainly a part of the story. Prior to the expansion of Social Security, Campbell explains, senior citizens participated at rates similar to or even lower than those of young citizens, and when the program expanded—giving seniors greater time and income—their turnout increased. But the expansion of Social Security did more than increase seniors’ numbers as voters. It also enhanced the content and meaning of their participation, through several channels. Seniors increasingly wrote letters to policymakers to communicate their preferences, and their preferences became much more intensely focused on Social Security. They also gained clout through the AARP, and political parties began to mobilize them around the issue. Seniors’ voices also found a more formal place within government itself: key government agencies, such as the Social Security Administration and the Agency on Aging,
became important vehicles for communicating the interests of seniors to policymakers. And so while seniors’ voting rates did increase after the expansion of Social Security, there were many other changes that also contributed to their enhanced political clout and policy success.

Turning back to seniors in California cities, this discussion suggests that there could be many ways—other than voting—that seniors might influence city policy. Seniors might attend city council meetings or contact their elected officials directly. They might be active through interest groups or as key players in political parties. One challenge, however, is that in the context of California cities, these channels are either hard to measure or are likely irrelevant: there are no records of city council meeting attendance that note the ages of those testifying, local elections in California are formally nonpartisan, and in research I have done elsewhere, I have found that city councilmembers and mayors across the United States report very little political activity by formal organizations of senior citizens (Anzia 2015). However, there is one type of city institution that is easier to measure and could be an important way that seniors voice their preferences to elected officials: senior commissions.

Nearly all city governments in the United States have citizen authorities, boards, or commissions,16 most of which have appointed members who advise the city council on designated issues (such as zoning). Senior commissions, in particular, are set up to consider and advise city officials on policy matters of interest to seniors. For each of the 434 cities in my dataset, I used information on cities’ websites—following up with a phone call if necessary—to establish whether or not each city has a senior board or commission. The hypothesis, then, is that the 106 cities that have senior commissions will be more likely to provide DR service exclusively for seniors than the cities without senior commissions.

---

16 According to the ICMA 2011 Municipal Form of Government Survey, 95% of respondent municipalities report having some boards and commissions, including all but 5 of the 209 California cities that responded to the survey.
Empirical Results: Turnout, Senior Centers, and Senior Commissions

As before, it helps to start by examining the bivariate relationships between DR service and the two indicators of interest: presence of a senior center and presence of a senior commission. In Table 3, I present two cross-tabulations. The rows are defined according to the three categories of the dependent variable: again, a city is coded as 0 if it has no DR service for seniors provided by the city or a transit authority, 1 if it has DR service available to the general public, and 2 if it has DR service exclusively for seniors. The first set of columns breaks the cities into groups depending on whether or not they have a senior center, and the second differentiates between cities with and without senior commissions.

The patterns that emerge from Table 3 suggest that cities with senior centers and senior commissions are indeed more likely to have better transportation options for seniors. 43 percent of the cities with senior centers have DR service exclusively for seniors, while only 19% of the cities without senior centers do. The same is true of cities with senior commissions: 55% of the cities with senior commissions have exclusive DR service for seniors, which is true of only 33% of the cities without senior commissions. At first glance, then, these two city characteristics do seem to have a positive relationship with the senior-friendliness of transportation policy.

In column 1 of Table 4, I add these two variables to the main ordinal logit model from Table 2. Strikingly, both of the new variables—Senior center and Senior commission—have a positive, statistically significant relationship with the senior-friendliness of city transportation. To give a sense of the magnitude of these effects, in Table 5, I use this model to calculate the predicted probability that a city will have DR service exclusively for seniors. (I calculate the probabilities using Clarify (Tomz et al. 2003), setting the continuous variables at their means and County DR service and Off-cycle history at zero.) There, in the top panel, we can see that the
predicted probability of exclusive DR service in a city with no senior center and no senior commission is only 25%. By contrast, cities with senior centers (but no senior commissions) are predicted to have exclusive DR service 38% of the time—a 13 point difference. The same is true of cities with senior commissions but no senior centers: the model predicts that 38% will have exclusive DR service. And in cities with both senior centers and senior commissions, the expectation is that 52% will have exclusive DR service for seniors—more than double the rate of cities with neither.

In columns 2 and 3 of Table 4, I show the results of two alternative specifications. The model in column 2 excludes the 46 cities with a history of off-cycle elections. Here too, the effects of having a senior center and a senior commission remain positive and significant. The same is true in column 3, where I add county fixed effects to the model. Even when I focus on variation within counties, then, I still find that cities with senior centers and senior commissions are significantly more likely to have transportation policies friendly to seniors.17

These estimates are preliminary, of course, and it too early to say whether these effects are causal. It may be, for instance, that some unobserved city characteristic explains the presence of these city institutions and the senior-friendliness of city transportation policy—a possibility I will explore in future empirical tests. For now, though, it is worth noting that these estimates are consistent with the theoretical expectations I have developed. When seniors are a cohesive group with focused preferences, and when seniors’ voices are heard through participatory channels other than voting, policy outcomes are more likely to tilt in their favor.

In all of these models, the coefficient on Percent senior remains statistically insignificant, as it was in the earlier models. On average, then, the sheer number of seniors voting—or the

17 The predicted probabilities calculated from these models (not shown) are almost exactly the same as those calculated from the first model.
percentage of the city electorate they make up—has no clear relationship with transportation policy friendly to seniors. One possibility that I haven’t yet tested, however, is that seniors’ presence in the electorate does matter under certain conditions—in particular, when seniors are a cohesive group focused on issues relevant to seniors. In those contexts, the size of the senior voting bloc may well matter. The hypothesis to be tested, then, is that the percentage of seniors in the electorate will have a positive effect on city transportation policy in cities with senior centers, but it will not have an effect in cities without senior centers.

In columns 4 and 5 of Table 4, I test this by interacting the Senior center variable with Percent senior, first including all cities and controlling for Off-cycle history, and then dropping the 46 cities with a recent history of off-cycle election scheduling. The coefficients on Percent senior are statistically insignificant, indicating that in cities without senior centers, seniors’ presence in the electorate has little effect on the availability of senior-friendly transportation. To understand the effect of seniors’ electoral presence in cities with senior centers, I combine the coefficients on Percent senior and its interaction with Senior center, with the results shown at the bottom of columns 4 and 5. In column 4, that effect is positive—the expected direction—but statistically insignificant. In column 5, which excludes the 46 cities with off-cycle history, the estimated effect is larger and significant at the 10% level. While this is still a weak effect, it at least suggests that seniors’ turnout does matter in some contexts—and in the contexts where we would expect it to: cities where seniors interact regularly and are more likely to be focused on issues relevant to the group.

The predicted probabilities from this last model are shown in the second panel of Table 5. The predicted probability of exclusive DR service in cities without senior centers or senior commissions is still about 25%. But then I calculate two different probabilities for cities with
senior centers (and no senior commissions): those with low senior turnout—where seniors make up 15% of city electorates (the 5th percentile)—and those with high senior turnout—where seniors make up 43% of the electorate (the 95th percentile). For the low-turnout cities, the probability of exclusive DR service is 32%. For high-turnout cities, it is 46%. The pattern is similar for cities with senior commissions. Without a senior center, the expectation is that 37% will have exclusive DR service. For cities with senior centers but low senior turnout, the predicted probability is 47%. And in cities with senior commissions, senior centers, and high senior turnout, the probability of having exclusive DR service is 61%.

Thus, there is some evidence of a turnout-policy connection for seniors in city politics, but that connection is conditional. In order for a group to be influential as a voting bloc, it has to be a cohesive group—and one that is politically focused on issues relevant to the group.

**Discussion**

This paper began with a simple purpose and a simple hypothesis. The purpose was to test a core theoretical idea of American politics: that groups of citizens who vote at high rates and make up a larger share of the electorate are more successful in securing favorable policies than groups with a smaller voting presence. For an idea so widely accepted by scholars of American politics, it is surprising that it has been subject to so little empirical testing. Relying on an empirical design that exploits variation in turnout and policy in over 400 California city governments, I set out the straightforward hypothesis that transportation policy would be friendlier to senior citizens in cities where seniors make up a larger percentage of voters in city elections. Surprisingly, though, my empirical results did not support that expectation. Even though I directly measured the percentage of seniors in city electorates and examined a policy area of relevance to seniors, I found no evidence of the expected turnout-policy connection.
That null finding calls for explanation. In the second part of this paper, I revisited some theoretical contributions of an older political science literature to develop a two-part argument. The first part of the argument is that a group of citizens that is focused on a particular issue and casts votes on the basis of that issue will have more success in getting policies they favor, compared to a group with less focus. There are many factors that likely contribute to a group’s focus, but the amount of social interaction in the group—which helps to crystalize and focus members’ political views—stands to be an important one. Second, I argue that voting is not a very precise way of communicating a group’s policy preferences to elected officials, and other forms of political activity may well have greater policy-shaping impact.

For this study in particular, I have only rough measures of these phenomena for the 434 cities in my analysis. But even with these rough measures, I find considerable support for my argument. Cities with senior centers—where senior citizens regularly interact socially—are more likely to have senior-friendly transportation. Moreover, in the cities that do have senior centers, there is some evidence that seniors’ share of the voting electorate is associated with senior-friendly policies. And finally, when cities have senior commissions, which are charged with advising city councils on matters of interest to seniors, once again I find that city policies are more in favor of this demographic group. Therefore, while the exact size of the senior voting bloc does not matter in every situation, it does under certain conditions; and if we really want to explain variation in policy, there are other forms of political activity that matter as well.

As I alluded to earlier, one could raise a number of concerns about my empirical analysis, especially in the second part of the paper. Perhaps the most glaring problem is the possible endogeneity of senior centers and senior commissions: it may be that some unobserved factor—such as the political activism of seniors 20 years ago—explains both why certain cities have
exclusive DR service and why certain cities have senior centers and senior commissions. These are concerns that must be dealt with in future work, and in the meantime, these relationships should not be interpreted as causal. But as a step toward learning about what does explain variation in policy—and the conditions under which turnout matters—this is a promising set of findings. Going forward, scholars should build on these empirical findings to further enhance our understanding of the conditions under which a group of citizens has influence over policy.

I should emphasize that these findings in no way imply that turnout never matters for policy. As I discussed earlier, there is already some evidence—not much, but some—that turnout does shape policy in particular contexts for particular groups. Hill and Leighley (1992), for example, find that turnout bias in favor of high-income voters in state elections leads to less generous welfare policies. My own research shows that in off-cycle elections, in which overall turnout is low, organized groups with a big stake in the election outcome make up a disproportionately large share of those voting—and are more likely to get policies they favor (Anzia 2014). There is nothing in the findings of this paper that necessarily contradicts those conclusions. This study has only examined one group (seniors) in one context (city elections in California) and its influence on one policy (transportation). Moreover, the results in Tables 4 and 5 suggest that under certain conditions—when the group of citizens is a cohesive unit focused on issues of relevance to the group—the group’s voting presence does matter. Turning back to Hill and Leighley (1992), if high-income voters in state elections are very focused on issues such as welfare policy, it makes sense that state policies would be correlated with their numbers in the electorate. Similarly, my work on election timing looks at organized groups such as teacher unions and municipal employee unions—groups that are very focused on the core policy issues of interest to their members. There is therefore nothing in my findings here that is
inconsistent with these studies. And by testing the turnout-policy connection in a new context with a new group, we learn something important about the conditions under which that connection will exist.

Going forward, American politics scholars should pursue other tests of the turnout-policy connection and the conditions under which it exists. They should also devote greater attention to what makes certain groups attentive publics and others not—and do more to understand the policy effects of political activities other than voting. After all, as Harold Lasswell (1958, 7) wrote, “the study of politics is the study of influence and the influential.” If a primary aim of political science is to understand influence, it is not enough to only study voting. We must also learn about the conditions under which voting is influential and also the other avenues groups pursue to exert influence. To be sure, collecting data on voter turnout is easier than measuring testimony at government hearings, lobbying interactions, letter-writing to elected officials, and the social interactions of groups. But even if these phenomena are harder to measure and raise thorny questions of identification, they stand to play a very important role in shaping public policy and representation—and their effects need to be understood.
References


Figure 1: Registration and Voting in City Elections, by Age

Figure 2: Turnout in City Elections, by Age and Timing (% of Registered Voters)
Figure 3: Senior Citizens in California Municipalities

- % of population age 65 or over
- % of all registered age 65 or over
- % of all city election voters age 65 or over

Figure 4: Seniors in City Electorates and the Senior-Friendliness of City Transportation

- % of City Election Voters 65 and Over

No DR Service  DR Service for General Public  Exclusive DR Service
## Table 1: Explaining the Age Gap in City Elections

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate</th>
<th>Std. Err</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concurrent with midterm</td>
<td>0.104</td>
<td>(0.015)</td>
<td>***</td>
</tr>
<tr>
<td>Concurrent with primary</td>
<td>0.218</td>
<td>(0.012)</td>
<td>***</td>
</tr>
<tr>
<td>Off-cycle</td>
<td>0.072</td>
<td>(0.011)</td>
<td>***</td>
</tr>
<tr>
<td>Mayor</td>
<td>0.005</td>
<td>(0.008)</td>
<td></td>
</tr>
<tr>
<td>Ln(total population)</td>
<td>0.001</td>
<td>(0.003)</td>
<td></td>
</tr>
<tr>
<td>Ln(per capita income)</td>
<td>0.004</td>
<td>(0.009)</td>
<td></td>
</tr>
<tr>
<td>% Urban</td>
<td>-0.032</td>
<td>(0.010)</td>
<td>***</td>
</tr>
<tr>
<td>Constant</td>
<td>0.254</td>
<td>(0.097)</td>
<td>***</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>434</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Robust standard errors in parentheses. Dependent variable is the difference in the turnout rates of 65 to 75 year olds and 25 to 35 year olds in the most recent city election. Hypothesis tests are two-tailed. *p<0.10; **p<0.05; ***p<0.01
### Table 2: Seniors in the Electorate and Senior-Friendly Transportation Policies

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent senior</td>
<td>0.792</td>
<td>0.877</td>
<td>1.351</td>
<td>-1.787</td>
<td>0.408</td>
<td>-0.135</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>(1.783)</td>
<td>(1.750)</td>
<td>(1.749)</td>
<td>(1.043)</td>
<td>(0.768)</td>
<td>(1.781)</td>
<td>(1.830)</td>
</tr>
<tr>
<td>Ln(Population)</td>
<td>0.362***</td>
<td>0.359***</td>
<td>0.357***</td>
<td>0.4***</td>
<td>0.155***</td>
<td>0.24</td>
<td>0.38***</td>
</tr>
<tr>
<td></td>
<td>(0.111)</td>
<td>(0.110)</td>
<td>(0.124)</td>
<td>(0.157)</td>
<td>(0.049)</td>
<td>(0.150)</td>
<td>(0.128)</td>
</tr>
<tr>
<td>Ln(Population density)</td>
<td>0.225*</td>
<td>0.244*</td>
<td>0.219</td>
<td>-0.053</td>
<td>0.106*</td>
<td>0.195</td>
<td>0.373**</td>
</tr>
<tr>
<td></td>
<td>(0.129)</td>
<td>(0.130)</td>
<td>(0.135)</td>
<td>(0.189)</td>
<td>(0.054)</td>
<td>(0.145)</td>
<td>(0.179)</td>
</tr>
<tr>
<td>Ln(Income per capita)</td>
<td>-0.208</td>
<td>-0.238</td>
<td>-0.171</td>
<td>-0.405</td>
<td>-0.087</td>
<td>-0.519</td>
<td>-0.165</td>
</tr>
<tr>
<td></td>
<td>(0.331)</td>
<td>(0.328)</td>
<td>(0.308)</td>
<td>(0.314)</td>
<td>(0.137)</td>
<td>(0.350)</td>
<td>(0.343)</td>
</tr>
<tr>
<td>County DR</td>
<td>-0.239</td>
<td>-0.227</td>
<td>-0.211</td>
<td>-0.094</td>
<td>-0.779</td>
<td>-0.378</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.357)</td>
<td>(0.358)</td>
<td>(0.335)</td>
<td>(0.153)</td>
<td>(0.584)</td>
<td>(0.610)</td>
<td></td>
</tr>
<tr>
<td>Off-cycle history</td>
<td>0.381</td>
<td>0.432</td>
<td>0.144</td>
<td>0.104</td>
<td>-0.239</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.309)</td>
<td>(0.402)</td>
<td>(0.133)</td>
<td>(0.323)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transit authority DR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-1.891***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.427)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>Ordinal Logit</td>
<td>Ordinal Logit</td>
<td>Ordinal Logit</td>
<td>Ordinal Logit, County FE</td>
<td>OLS</td>
<td>Logit</td>
<td>Logit</td>
</tr>
<tr>
<td>Observations</td>
<td>433</td>
<td>433</td>
<td>387</td>
<td>433</td>
<td>433</td>
<td>433</td>
<td>433</td>
</tr>
<tr>
<td>Pseudo R-squared</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.23</td>
<td>0.05</td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.08</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Standard errors clustered by county in parentheses. The dependent variable in columns 1-5 is *DR service*, equal to 0 if the city has no DR service for seniors provided by the city or a transit authority; it equals 1 if the city has DR service for seniors open to the public; it equals 2 if the city has DR service exclusively for seniors and the disabled. Dependent variable in column 6 equals 1 if the city has any DR service for seniors provided by the city or a transit authority. Dependent variable in column 7 equals 1 if the city has any DR service for seniors provided by the city (not transit authorities). Hypothesis tests on *Percent senior* are one-tailed; all other hypothesis tests are two-tailed. * p<0.10; ** p<.05; ***p<0.01.
<table>
<thead>
<tr>
<th></th>
<th>No senior center</th>
<th>Senior center</th>
<th>No senior commission</th>
<th>Senior commission</th>
</tr>
</thead>
<tbody>
<tr>
<td>No DR service</td>
<td>48</td>
<td>136</td>
<td>155</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>64.9%</td>
<td>37.8%</td>
<td>47.3%</td>
<td>27.4%</td>
</tr>
<tr>
<td>DR service for general public</td>
<td>12</td>
<td>71</td>
<td>64</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>16.2%</td>
<td>19.7%</td>
<td>19.5%</td>
<td>17.9%</td>
</tr>
<tr>
<td>Exclusive DR service</td>
<td>14</td>
<td>153</td>
<td>109</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>18.9%</td>
<td>42.5%</td>
<td>33.2%</td>
<td>54.7%</td>
</tr>
<tr>
<td>Total</td>
<td>74</td>
<td>360</td>
<td>328</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
## Table 4: Senior Turnout, Senior Centers, and Senior Commissions

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent senior</td>
<td>0.946</td>
<td>1.488</td>
<td>-1.881</td>
<td>-2.248</td>
<td>-2.656</td>
</tr>
<tr>
<td></td>
<td>(1.799)</td>
<td>(1.763)</td>
<td>(1.246)</td>
<td>(4.142)</td>
<td>(4.254)</td>
</tr>
<tr>
<td>Senior center</td>
<td>0.621**</td>
<td>0.714**</td>
<td>0.676**</td>
<td>-0.388</td>
<td>-0.626</td>
</tr>
<tr>
<td></td>
<td>(0.303)</td>
<td>(0.324)</td>
<td>(0.360)</td>
<td>(0.763)</td>
<td>(0.777)</td>
</tr>
<tr>
<td>Senior commission</td>
<td>0.59***</td>
<td>0.598***</td>
<td>0.761***</td>
<td>0.597***</td>
<td>0.607***</td>
</tr>
<tr>
<td></td>
<td>(0.194)</td>
<td>(0.191)</td>
<td>(0.256)</td>
<td>(0.196)</td>
<td>(0.191)</td>
</tr>
<tr>
<td>Senior center * Percent senior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.648</td>
<td>4.833</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.224)</td>
<td>(3.283)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ln(Population)</td>
<td>0.231**</td>
<td>0.214*</td>
<td>0.243</td>
<td>0.225**</td>
<td>0.202*</td>
</tr>
<tr>
<td></td>
<td>(0.102)</td>
<td>(0.113)</td>
<td>(0.154)</td>
<td>(0.105)</td>
<td>(0.117)</td>
</tr>
<tr>
<td>Ln(Population density)</td>
<td>0.218*</td>
<td>0.199</td>
<td>-0.045</td>
<td>0.214*</td>
<td>0.193</td>
</tr>
<tr>
<td></td>
<td>(0.118)</td>
<td>(0.121)</td>
<td>(0.181)</td>
<td>(0.120)</td>
<td>(0.123)</td>
</tr>
<tr>
<td>Ln(Income per capita)</td>
<td>-0.219</td>
<td>-0.12</td>
<td>-0.285</td>
<td>-0.177</td>
<td>-0.053</td>
</tr>
<tr>
<td></td>
<td>(0.325)</td>
<td>(0.318)</td>
<td>(0.336)</td>
<td>(0.327)</td>
<td>(0.320)</td>
</tr>
<tr>
<td>County DR</td>
<td>-0.233</td>
<td>-0.22</td>
<td>-0.23</td>
<td>-0.215</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.365)</td>
<td>(0.344)</td>
<td>(0.364)</td>
<td>(0.344)</td>
<td></td>
</tr>
<tr>
<td>Off-cycle history</td>
<td>0.36</td>
<td>0.505</td>
<td>0.336</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.291)</td>
<td>(0.433)</td>
<td>(0.283)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>County fixed effects?</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Observations</td>
<td>433</td>
<td>387</td>
<td>433</td>
<td>433</td>
<td>387</td>
</tr>
<tr>
<td>Pseudo R-squared</td>
<td>0.053</td>
<td>0.051</td>
<td>0.248</td>
<td>0.055</td>
<td>0.054</td>
</tr>
</tbody>
</table>

Notes: Standard errors clustered by county in parentheses. All models are ordinal logit models. Hypothesis tests on Percent senior, Senior center, Senior commission, and their associated interactions are one-tailed; all other hypothesis tests are two-tailed. * p<0.10; **p<0.05; ***p<0.01.
Table 5: Predicted probabilities of exclusive DR service

<table>
<thead>
<tr>
<th></th>
<th>Without senior commission</th>
<th>With senior commission</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Without senior center</td>
<td>0.249</td>
<td>0.376</td>
</tr>
<tr>
<td>With senior center</td>
<td>0.378</td>
<td>0.524</td>
</tr>
<tr>
<td>(2) Without senior center</td>
<td>0.244</td>
<td>0.370</td>
</tr>
<tr>
<td>With senior center, low percent senior</td>
<td>0.323</td>
<td>0.465</td>
</tr>
<tr>
<td>With senior center, high percent senior</td>
<td>0.463</td>
<td>0.609</td>
</tr>
</tbody>
</table>